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Extract from the Political Code.

SECTION 2296. Books may be taken from the Library by the MEMBERS OF THE LEGISLATURE, DURING THE SESSIONS THEREOF, and by other State officers at any time.

SEC. 2298. The Controller, if notified by the Librarian that any officer has failed to return books taken by him within the time prescribed by the Rules, and after demand made, must not draw his warrant for the salary of such officer until the return is made, or three times the value of the books, or of any injuries thereto, has been paid to the Librarian.

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The foregoing Regulations will be strictly enforced.

PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, JANUARY 7, 1882. Number 1

Inventors and Agriculture.

One who signs himself "Inventor," writes in answer to some strictures passed upon inventors by a Stockton paper, claiming that inventors are idle, designing persons, who are always endeavoring to live without work, always looking for the opportunity to entrap some unwary capitalist into investing money in their inventions. Such remarks applied to the inventors in general is a base, ungrateful slander. One has only to look into the present working of any department of the arts or manufactures to learn the service of invention to industry. Every item of progress, from the rude processes and appliances of the ancients has been the work of the inventors. As a rule, the improvements have cost a great amount of experiment and effort and actual outlay to those who have achieved them. There is, of course, now and then, a happy thought; but the average of effort for each invention is very great. It is but natural that the successful laborer in the field of invention should desire to enjoy a part of the fruits of his labor, and the people of the United States and other civilized countries, have decided that his claim is a just one. What would farming be without the triumphs of the inventor? Contrast the labor it is now possible to accomplish by one man's labor with what was done by a man in the early days. Contrast the gang plow with the forked stick, the self-binding reaper with the sickle, the thrashing outfit with the flail. People who decry the service of the invennor to the industries are relics of a bygone age. They have no part or parcel in the progress of the Agriculture has enjoyed her full share of the inventors' attention, and while she has been advanced, they, in turn, or many of them, have become enriched. It is a case of useful labor well requited; and there is much more of it to do. Excellent as are our agricultural tools and machines, no one can tell what farther improvement may come to them through the inventor's earnest efforts.

THERE are 1,000 artesian wells in this State, 300 of which are in the Santa Clara valley. They average from 150 to 250 ft. deep.

Bishop's Head on the Maine Coast.

The coast of Maine is fitly described in the words of the poet who pictured the landing of the Pilgrim fathers, for it is "stern and rock-bound" to the last degree. It is also exceedingly broken and ragged. Following the line of the shores, Maine has 2,486 miles of sea coast, being the most irregular and deeply indented coast line in the United States. All along the shores there are jutting or solitary rocks which have taken names from their resemblance to animate objects. The one shown in the engraving is "Bishop's Head," and the mitered head of such a functionary is well brought out in the rock. The frowning shore above and the wild, dashing waves form a picture of nature in one of her heavier moods, which is most impressive.

Maine, with all her riches of coast scenery, does not possess a monopoly of threatening rocks or forms from nature's chisel which bear semblance to living objects. The resistless force of the waves has hewn mysterious shapes wherever rocky shores have attempted to fence in the ocean. Nor has the ocean alone been the sculptor. On this coast the work of river and glacier has left monuments standing far inland. The headlands along the Columbia river have a majesty peculiarly their own. Cape Horn will perhaps come to the reader's mind, as his eye rests upon the Atlantic scene which appears upon this page.

The mind lingers long in contemplation of such a creation as Bishop's Head. There are many weird fancies woven around it, and it has won a place in the literature, as well as in the art, of New England. It is also a notable point with mariners.

VIEW OF BISHOP'S HEAD, ON THE COAST OF MAINE.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Mildew, Molds, etc, on Living Plants.

Written for RURAL PRESS by C. L. ANDERSON, M. D.

In the study of nature, whatever direction we take, there will be encountered some time or other a wall of mystery beyond which we would gladly look. This is as true in botany and zoology as in astronomy, In one there is an infinity (to our minds) of minuteness; in the other an infinity of greatness.

I am led to make this remark on account of some recent thoughts I have had on diseases of plants and animals caused by the microscopic parasites, chiefly of a vegetable nature—such as mildews, molds, etc.

There are many persons not totally ignorant of these things, and whose knowledge does not exceed "a little learning," who are ready to be very dogmatic on a few observed facts. Becoming acquainted with one or two instances of mildew or blight they are ready to assign all diseases to that cause. They see bacteria or fungus in everything. Then, again, there are skeptics who will not believe unless the fungus spores were as large as bird shot, and they may see the threads creeping like snakes through the tissues of the plant.

Not so much for the instruction of either of these classes do I write, as for those who have a reasonable faith and are willing to learn.

I desire to repeat some observed facts in regard to what is known of fungi on living plants. Now what is a fungus? It is one of a family of plants distinguished by certain characters. We will mention the leading ones:

First, it is never grass-green, the cells contain no chlorophyl, but when not empty hold a brownish cell matter of very fine grains. Second, it cannot absorb inorganic matter so as to use it for food, but lives on matter that has already been assimilated or organized. Third, it is furnished with long, slender, thread-like cell tubes (mycelium), which are so small, among the molds and mildews, that it penetrates and passes through the cell structures of plants in all directions without obstruction—appropriating food already elaborated, and tearing to pieces or starving the organism.

Fungi that grow on *living* plants are quite limited in range. The same kind is generally confined to one or two species, or plants of the same family and structure.

There are various ways by which fungi are propagated: First, by fertilized spores, *i. e.*, spores that have passed through a sexual process and are so endowed that powerful forces are required to destroy the life inherent thereto. These spores may be transported long distances, may be kept a long time and subjected to various climates of heat and cold, wet and dry, and still retain vitality. Second, By the contents of specially developed cells, still called spores, of quick and ready growth, but not sexually endowed, and of easy destruction by climate and other causes. These correspond with the budding process of propagation. Third, by fragments of the fine threads (mycelium), any part of which in some species will grow when the circumstances are favorable, such as heat and moisture.

There are other ways of propagation which we need not mention at present.

Growth of a Fungus.

Let us take a case, and see how one of these fungi will work. Suppose I have a fine-looking potato patch about the middle of July, with vines in the full vigor of growth, the most favorable soil and in beautiful condition, showers, warm air and not too much sunshine, I begin in imagination to count the large full sacks of "spuds" that shall reward me for my time, money spent and trouble. But some fine morning I behold some suspicious looking brown spots here and there. Surely, there has been no frost. There are no bugs—no insects of any kind to be seen. The disease increases, and in less than a week my hopes and potatoes are both blighted.

I take a diseased vine, a book and a microscope, and will try to solve the mystery. I use the book that I may have the benefit of past investigations. I take the microscope that I may see what others have seen and described. It is probable that I shall see something that is new and unexplained, that I may reach the boundary wall of the great field which is as yet unexplored, and where the first discoverers are usually lost and confused.

And this is what I see and learn: The thread cells of a fungus have passed from the "seed potato" into the stem and leaves of the new growth, and with a little care I may see microscopic trees, thickly growing from the under surface, and a few from the upper surface of the leaves. These little growths generally protude from the breathing pores. They are loaded with minute sacs, and these are filled with a fine powder. They burst, and the powder, which is composed of egg-shaped spores, falls on other parts of the potato plant, and very soon begin to grow by sending forth thread cells, which penetrate the cells of the potato, and when the weather is moist and cloudy they grow so fast that in a few days the once thrifty vein is destroyed.

I learn that the seed potato I planted was infested, having brown rusty patches, and in preserving the potato I also preserved the fungus spores and mycelia, planting them together in the spring. Have we not read, "whatsoever a man soweth that shall he also reap." In this case, however, I reap no potatoes but a great deal of fungus.

Grape Mildew.

The mildew on grape leaves differs in some respects from that on the potato. The one most troublesome in this vicinity has often been called *Oidium*. It is a different fungus, however, to the *Oidium* so destructive to the grape in Europe. Here it is called *Uncinula spiralis*. It appears about midsummer on the leaves and young stalks of the grapevine, in ash-colored spots, plainer on the upper surface of the leaf than on the lower. When the season favors them these spots grow until they cover the whole leaf and the grapes—of course destroying the crop. Later in the season *Uncinula* produces perfect spores which fall with the leaf, remaining vital after the leaf has decayed, and with summer heat and dry winds is carried to the young growth of the grape and falling on the leaf and stalk adheres to the viscid surface and begins to propagate.

Now this is but one of the many fungi that attack the grape—but it is perhaps the most troublesome with Californians.

Fungi on the Peach.

There are two fungi that infest our peaches. One is found on the ripe fruit spreading like leprous patches. It is the *Sphærotheca pannosa*, and is also found on cultivated raspberries and perhaps other fruits. But I have not seen it except on the peach. The other fungus produces the "curl leaf," about which we have read in the newspapers a great many theories. Its name is *Taphrina* (*Ascomyces*) *deformans*. It causes the leaf to curl, thicken and eventually to fall off, and is the worst enemy to our peach trees.

Smut on Trees.

I must mention another mold fungus, the Fumago; very common on oranges, poplars, willows and many other trees that are subject to *Coccidæ*, or plant lice. These insects usually form a honey-like coating on the leaves. To this the spores of the fumago, drifting in the air, adhere and grow. It does but little damage, except to interfere with the respiration of the leaves. One of our native plants, the *Eriodictyon glutinosum*, the "yerba santa" of the Spanish, has a very glutinous leaf which serves to catch the spores of this fungus; and there is nearly always a block mold on the leaves of this plant. In all probability the fungus feeds on the gum, for I have noticed that the leaves are not injured, and on the older ones it scales off leaving a smooth, dry surface to the leaf.

Pear Fungus.

There is a mold fungus on some of our early pears which disfigures and deforms the fruit before it matures, thus rendering it unfit for market, although it scarcely affects the flavor. Whether there has been an insect on the pear previous to the fungus I have not observed. I expect to do so next year. But reasoning from what I have seen I incline to the opinion that a fungus has found a suitable place and food on either a natural secretion of the young pear or that of an insect of the *Coccidæ* family. But in either case the fungus is the "cat that eats the cream."

Nevertheless, it will not be profitable to dogmatize without plenty of established facts. Nature is so variable, with such a multiplicity of resources, and so *uniform* when we understand the variations and multiplicities, that we are astonished at her uniformity.

San Cruz, Cal., Dec. 23, 1881.

Stockton Notes.

EDITORS PRESS:—The city of Stockton proudly bears the cherished memory and honored name of one of America's noblest and bravest commodores—Stockton.

The city of Stockton is the great center, or, we should say, the emporium of the great and unrivaled wheat-growing country, San Joaquin valley. For cereals in general, it is justly unsurpassed, nay, unapproachable. The annual yield, even under adverse circumstances, is immense, and would bewilder the arithmetician and statistician in an ocean of figures. Ah! how unmindful we are generally about the bounties of a kind Providence towards us poor finite beings.

The charming couplet of the prince of prose writers, Addison, in relation to Italy, may be very appropriately applied to California in general, but especially to San Joaquin valley:

> Could Nature's bounty satisfy the breast,
> The sons of California are surely blest.

Yet the land is literally teeming with discontented, chronic people. The wheat crop in the valley this year, shared about the same fate as the other sections of the State; if anything, probably comparatively a little better than other places where we have been in our travels. One great point in favor of the San Joaquin valley farmer is the great facilities that are offered him for carrying his grain and produce to so near a mart as Stockton and San Francisco. The price, also, is more favorable for the farmer than he anticipated a few months ago.

The City of Stockton.

But let us turn our attention again to Stockton for a few moments. Its population is about 12,000 souls. The summer or harvest season introduces a large number of the working class or farmers' help to the city, who leave a good portion of their hard-earned wages with the saloon keepers, who are at all times on the alert for their dupes. It is an acknowledged fact the world over, that those who earn their money with most difficulty and hardship, part with it most easily. The sailor boy, eternally rocked and tossed about on the bosom of an angry ocean, on reaching land becomes at once oblivious of his past dangers and hardship. So it is with the farmer's boy or help.

Stockton sadly needs a new court house, also a good and respectable temple devoted to the drama. The city it seems is somewhat unfortunate from the earliest day as the home of true dramatic taste. The legitimate stage is almost the peer of the press itself.

There are some handsome residences, fine gardens and shrubbery also.

The object which attracts the visitor's attention is the

Insane Asylum.

The poet Burns sings, that man is made to mourn. He is begotten in pain and very generally makes his exit in pain. But it is too painful to think that man should be cast down in the noon-time of his days of usefulness and deprived of reason—the principal faculty that distinguishes man from and raises him above the brute creation. A visit to such an institution is very well adapted to arouse the warmest feelings of the human heart and enlist our sympathies on behalf of the unfortunate inmates.

The grounds are on a princely scale, and laid out with great judgment and taste. Each and every vegetable adapted to growth in California is cultivated. The trees, plants and shrubbery are plentiful, and present at once a perennial freshness, which would please the eyes, and mollify the hearts of the unfortunate victims were they capable of duly appreciating the natural and artificial beauties of their surroundings or home.

The officers of the asylum are efficient and scrupulous in the discharge of their sacred trust. The buildings are not as handsome or as costly as the Napa asylum, but age kindly lends its aid to the Stockton asylum. We noticed a new wing, or building, is being put up. It is on the east side, near one of the main entrances, and was much needed for the proper reception of the inmates. The style will be of the English Gothic. It will consist of about 100 single rooms and several dormitories. All the walls, partitions, etc., will be built of brick and stone, and the trimmings will be made of the San Jose sandstone. All plumbing materials will be of Mott's enameled ironware; the waterclosets will be flushed automatically by patent self-acting flush-tanks, which will discharge a quantity of water at regular intervals. There will be an iron tank under the roof of 10,000 gallon capacity, supplying all parts of the building.

There will be four pipes in various parts of the building with fire hose on each floor. All the rooms will be well ventilated and warmed, the corridors wide and airy. The building will be three stories above basement. Heating steam apparatus in basement. The roof will be of corrugated galvanized iron. The architects of the building are the well-known firm of Percy & Hamilton, of Frisco and Stockton.

The Pacific or Nevada Insane Asylum is also located in the vicinity of Stockton, under the charge of Dr. Asa Clark, who has a contract for taking of patients from Nevada and Arizona. There were so few, and the climate of those Territories unfit for insane, that it was thought advisable to bring them here in the fall of the year 1877, from Woodbridge, in this county. The number here is about 167 in all. They have about 40 acres, which gives them abundance of vegetables. They have nice grounds, good, clean and airy rooms. Chas. Flauner is Superintendent.

Moving among the friends and patrons of the RURAL PRESS in Stockton, we come across an old-timer—Mr. Phillip Fitzgerald, on the Waterloo road. Mr. F. may be justly classed among the old Californians; finding his way across the continent, settling for a while in the mountains, and finally came into this valley. He has ten acres of grapes under cultivation, and put in ten more last spring. They are doing well. It is such men as Mr. F. that make a wilderness bloom and flourish.

D. W. KELLEHER.

THE FASCINATION OF BIRDS BY SNAKES.—Catherine C. Hopely suggests in *Land and Water* a new theory of the so-called fascination of birds by snakes. It is that the bird mistakes the snake's tongue, which the animal keeps in constant motion, while it otherwise remains perfectly still, for a lively worm, and gazes at it with the expectation of making food of it. The idea was suggested by observations at the Zoological gardens, where the birds where frequently seen watching the tongues of the snakes. Commenting upon the above the *Germantown Telegraph* says: This, we think, is a mistake. Judge Miller, of Missouri, told us a month or so ago that he had two plants of fine lettuce of which he desired to preserve the seed; but as the seed matured the goldfinches preyed upon them to such an extent as likely to rob him of all his prized seed. So, to preserve what there was left, he constructed an artificial snake of some striped stuff, filled it with bran, curled it up and placed it near the stalks, where the birds could see it plainly; and the result was that not a bird approached the plant.

THE APIARY.

Beekeeping.

EDITORS PRESS:—Friend Rumford will please understand that your humble servant only claims to be one of the lesser "guns" in beekeeping at present, however his aspirations may extend. All the lessons are not learned at once, and it seems that our experiences are not all alike. For instance, my bees worked on golden rod and did not bum on cockle burr; but wherever it was allowed to grow, you could hear their busy hum at quite a distance. There is no sunflower in my immediate vicinity. I found a more serious drawback than that, which was, a great many perished in a neighbor's wine tubs while the grapes were being pressed; to use his words, "there were thousands" which went for the juice and got drowned. Consequently, some swarms do not fill their hive, though they will go over the division-board and protect their combs.

In reducing the hives to lower story, I found one in particular that covered (Nov. 26th) all frames, both in upper and lower story, with honey in most of the frames (a 20-frame Langstroth hive). The old queen was superseded, after filling three hives with brood and stores, and building all from foundation. The last time I looked for her there was a young queen in her place, which has done her duty since.

To answer friend Rumford's question, I will state that Italians persist in filling every available cell with honey or pollen, or both, and if it accumulates to crowd the queen in her duties, they will swarm. I have prevented them from swarming by giving foundation or empty comb in brood nest, and empty comb and foundation above, until it came in so fast that with what help I could get at the time (not much experience at that) they would get the start of me and swarm. This season I calculated to work for comb honey mostly, but the cool nights compelled the bees to crowd the brood apartment and the sections were not filled out and capped at the corner, so most had to be extracted, to do service another season.

I am satisfied that extracting will keep back the swarming fever and think that with suitable help at the proper season the swarming might be entirely controlled, especially by keeping out drone comb and using foundation of all worker comb. I found that bees that have early drones are about the first to swarm. Some of my choicest swarms that I kept for drones were the first to swarm, both last spring and the previous year.

With 200 colonies of Italians, I think one would have his hands full to prevent swarming even in a season like the past. I had only 60 in the spring and returned swarms as much as possible, but was compelled to increase to 80. I ran for queens considerably which would interfere with the honey product, but had over 1,000 lbs. for market, most of which is disposed of, reserving enough extra combs to carry me through until the spring crop comes again. My intention in the spring was to replace the most of my queens and run the old ones for extracted and young ones for comb in sections, as young queens give more vitality to the swarm, but the small gear of my extractor gave out just in the middle of the harvest. The centers being too near, the small gear ran inside the large one, and the ends of the cogs wore smooth. It was late when I got it in working order again and I had lively times, though I got the best of them and had them going regular in a week or 10 days. Moving the old hives and using foundation did it.

Our season was a fortnight earlier than last one was, but we had no honey from May 18th to the last week in July, or, at least, but little—though there was no robbing. The frost killed the sage bloom; it did not go to seed.

There is a great difference in bees about swarming. Some swarm more than others. I think it may be remedied by careful breeding and still preserve the honey-gathering qualities. I believe the opinion of those that have tried both that the Italians are more disposed to swarm; but they do not hang out long. As soon as I see a cluster begin to form at the entrance I immediately arrange the hive to prevent swarming, by either tiering up, or giving foundation, or empty comb. I have seen a swarm come out after 5 P. M. and not two dozen bees at the entrance; when, on opening the hive, I found no empty space. After arranging the comb and putting on upper story, the bees were returned, when they appeared satisfied.

In some of the late A. B. J's. reports of Mr. L. C. Root, of Mohawk, by extracting 100 swarms, he averaged 225 lbs. of honey. I think he had no swarming, but, as I write only from memory, will not be certain. I don't aspire to 200 swarms, as there is no experienced help to be had in this vicinity. I shall run all I can conveniently, from 125 to 150 at most, and be content.

It will not do to extract for market in this vicinity later than June 15th, as the flavor and color are objectionable. The late crop will answer for home consumption and for strengthening the weak colonies.

To save combs from the moth when not in the hive I use a box about 15 inches square, no top or bottom, a door one-half the size of box

on one side, a loose board on top, with hole 6 inches square, the board large enough to hold the top story of the hive. By false ends to support the frames, inside, I tier up, leaving combs ½ inch apart. When tiered up as high as one can reach, cover the top with empty grain sacks, enough to make the top tight. In the lower box burn brimstone a few times, once a week, until sure all worms are killed. It don't need much smoke to kill worms. The combs will come handy in the spring. I should add that all imperfect combs should be melted into wax.

I have been told by an old bee man, that skunks will scratch at the entrance of a hive, to get the bees to attack them and cover them. Their long hair protects them from stings, when they are about covered they roll and crush them and shake them out and eat them. My experience seems to justify it.

As friend Rumford, by his bee notes, appears to be troubled with moths, and "one Italian and Cyprian swarm kept them out all summer," let me suggest to him through the PRESS to *circulate* the *queens* from those *two* swarms through his hives another season, and let us hear through the PRESS *how they act* in regard to the *worms*. By the way, as there are such conflicting reports in regard to the Cyprians, will friend Rumford give us through the same source his experience in regard to the *dispositions* of the Cyprians in regard to being handled? Are they as gentle as the Italians? I don't mean hybrids, of course. I believe I have a strain of Italians that are not so much given to swarming as some others, though I don't think the original stock are such honey gatherers as the imported Italians. I have four different strains, and believe in adding new blood as long as it is pure. I have done buying untested queens, and keep none that don't prove pure, good workers, and with good disposition as well as prolific. I believe a very prolific queen will not last as long as one not so prolific; she will lay herself to death sooner. J. D. ENAS.

Sunnyside Apiary, Napa, Cal.

THE FIELD.

The Utilization of Small Springs.

H. J. Rudisill has an article in the Riverside *Press and Horticulturist*, which may be useful or suggestive to some of our readers. It is with reference to the employment of the water from small springs for irrigation. He says: Even a small spring yielding but two quarts per second, is equivalent to a three inch stream, and would be sufficient for 12 to 15 acres in fruit trees, and with sub-irrigation a much greater area. To derive the greatest benefit from small springs, however, a reservoir is necessary, in which the flow of 12 to 24 hours, or even a longer period, can be accumulated and then discharged as required. It is by using water in driblets that many springs are wasted. A spring supplying even 1½ inches of water would be wholly swallowed up by a thirsty soil within 200 ft. of its source, when by arresting the flow and accumulating it in a reservoir and discharged at intervals in a volume four times as large it would more than cover eight times the surface. A spring flowing two quarts per second will discharge 43,200 gallons in 24 hours. This would require a reservoir 40x20 ft. and 7 ft. deep, or double that width if the depth is decreased one-half. The shallower it can be made the better, for many reasons, but especially on account of the temperature of the water. That of springs is generally too low in summer for immediate use, and its value is greatly enhanced by being raised to an equal or greater temperature than that of the air. This is quickly done by exposure in a shallow pond.

A reservoir can be constructed entirely in the ground where the slope will admit of it, and by lining the bottom and sides with clay well puddled, will answer for most purposes. At San Bernardino some are built of adobe, backed with earth and plastered on the inner side with hydraulic cement.

Concrete of lime, sand and broken stone is however, the best material, where lime can be readily obtained, and any person with ordinary mechanical genius can construct them. When the reservoir is shallow, and consequently there is but little pressure, the lime will be sufficient to make it water tight. The limes of Southern California are slightly hydraulic in character, making excellent dams, reservoirs and aqueducts, as the works left by the Mission Fathers fully prove.

Where there are a number of springs of small volume they can easily be gathered into one conduit or reservoir by a system of underdrains, very cheaply made with broken stone. A grade of six inches to 100 ft. will not wash in ordinary earth, and will be sufficient fall to keep the drain free from sediment. When a greater fall than this is required, the drain could be paved with stone, leaving an opening sufficient to conduct the water freely. Or a cheap continuous concrete pipe of sand, lime and a small portion of cement can be made in the trench or upon the surface of the ground by using a center piece of wood turned to the diameter of pipe required, and as fast as the mortar sets around it the center can be withdrawn. Wooden pipe of two to four inches diameter is cheaply made in the Eastern States from young, thrifty timber, bored with the old fashioned pump auger. When the pipe is required to withstand considerable pressure it can be greatly strengthened by bands, or wrapped with light hoop iron. The young pines and white cedar of the San Jacinto and Smith mountain would be excellent timber for this purpose.

Bluestoning Seed Wheat.

EDITORS PRESS:—Your correspondent, J. C. B., of Stockton, asks (will some scientific man please tell why it is so), in regard to a portion of a field of wheat being smutty, and another portion of the same field being free from smut.

If some scientific man answers J. C. B., which I hope will be the case, perhaps J. C. B. would be satisfied; but there are others who would prefer hearing the results of observations made during an experience of 25 years in raising wheat in Stanislaus county.

The first piece of ground I ever plowed was a field of 23 acres on the Tuolumne river. The soil was a rich sandy loam. I soaked the wheat, as was the custom at that time, from 10 to 14 hours in a solution of bluestone water, in which was dissolved bluestone, at the rate of one-quarter of a pound of bluestone to 100 lbs. of wheat.

I sowed the field by hand, and was fortunate enough to get it all sowed and harrowed before it rained, except a small three-cornered piece of about a quarter of an acre. That piece I sowed two days after the rest of the field was sown, and while I was sowing considerable rain was falling. I harrowed right after sowing, and when the field was harvested there was no smut on any part of the field except that small piece that was sown while it was raining—that was fully two-thirds smut. A neighbor on the place next to us would not buy bluestone, as it was too expensive; so he sowed ten acres of wheat on ground that was in fine condition. The result was that his 10 acres was nine-tenths smut. I helped him mow it and we tried time and again and the result was nearly the same, nine heads of smut and one of wheat.

Since that time (1857) I have sown wheat every year and on almost every condition of soil, and have never seen very smutty wheat (if the seed was properly bluestoned), if the ground was dry when the seed was sown, but have always had smut if the seed was sown when the ground was too wheat. What I mean by the land being too wet is this: Every farmer knows that he wants his land in about a certain condition to work, and he will not work it any other way unless in an emergency.

Now there is another fact in regard to smut. I have worked with threshing machines for the last 24 years, and have never seen a field of volunteer grain smutty. By volunteer grain I mean where the farmer has concluded there was seed enough on the ground and did not sow any seed on the field, but simply brushed or harrowed it.

From my experience I do not claim that bluestone is a sure preventive against smut if the grain is sown at all times, nor do I claim that there is nothing else that will prevent smut in grain, but I do claim that if wheat is properly bluestoned and sown when the ground is not too wet it will prevent smut. As J. C. B. says, it would be well if the farmers would experiment and ascertain if there is anything that will take the place of bluestone, as it costs quite a little sum to bluestone the seed of one crop. J. B. B.

Oakdale, Stanislaus Co.

THE VINEYARD.

Varieties of Vines Cultivated in Portugal.

[Written for the RURAL PRESS by REV. JOHN I. BLEASDALE.]

5. ALMACEGA.
Same as the following.

ALMAFEGA.
5a. Malvasia do Bairro.
A good bearer; early—about 20th of September; thrives in weak land. Gyrao, however, remarks that it does well in strong land and yields both large bunches and better wine, as well as a more vigorous growth.

6. ALMASSA. Arruda

7. APORCHEIRO.
Same as last.

8. ALVA.
Cultivated in Tootalegre.

9. ALVADORAO, in Bairada.
A good bearer; early; uncertain; bunches large; a good wine grape; requires strong land.

10. ALVAR, in Bairada.
A good bearer; early—15th of September; uncertain; needs strong land.

11. ALVAROSA.
In the Douro, produces much wine, but watery and green; damp, strong land.

12. ALVAROCO.
Cultivated in the Minho; very productive, but easily rots; throws out strong rods, and requires strong land.

13. ALVARINHO.
On the borders of the Minho, very productive, good wine, strong land.

14. ALVO DA SERRA.
In Cartaxo, a fair bearer, early, ripens middle of August, succeeds in light soils.

15. ARINTO.
Cultivated over nearly all Portugal. There are two varieties of White Arinto:—A. cachudo which produces both much and good wine, and needs strong land; and A. mindo (small). There is also a black variety, to be mentioned in its proper place.

The Arinto is very famous, the shoots are reddish, leaves five lobed, deeply cut, very wooly on the under side, leafstalk reddish, bunches 8 or 9 inches long and very thick, berries small and closely packed, oval, greenish white; skin thick, stiff, fleshy, not very juicy, sweet enough, and with a certain astringency.

16. ASSARIO.
Mentioned by Aguiar as being cultivated in Cartaxo; a good wine grape, but an irregular bearer, ripening late.

17. AZAL.
There are two varieties called Azal Branco and Azal Molle.

18. AZAR.
A table grape.

19. BOAL.
Another highly popular vine, especially in the warm southern portions of Portugal. Aguiar distinguishes three kinds—the White, the Red and the Alicante. Referring to the first named of these, he says: It is sufficiently productive, slightly uncertain, early, ripening in the middle of August, and succeeding best in silicious soils. Besides the above, the same Aguiar mentions the Boal in different parts with various epithets, such, for instance—Boal Cachudo, B. Carniceiro, B. Baboso, B. de Santarem, B. Carrasquinha, B. Esfarrapado and B. Liso.

Among the kinds cultivated in Borba, Gyrao mentions: 1. B. Liso, a good bearer, but failing some years; needs strong land and throws out strong rods. 2. B. Cachudo, which produces much, and good wine, has strong rods and needs fairly good land. It is mentioned by Gyrao as occurring often in the vineyards of Algarve, where it yields good wine from middling land or even sandy; has short rods and requires short pruning.

In the Azores, in S. Miguel, in Fayal and in Pico, it produces well, gives large bunches and throws out good rods; it needs strong land. Its best wine, however, is yielded from stony ground of volcanic origin. The variety called Baboso is not worth planting, says Alarte.

Boal Cachudo is a profitable kind.

But, according to that author, B. Branco (white) is an excellent kind. It thrives marvelously in any kind of land, and of excellent taste; it gives the best wine of that class. It has, however, a fault: it does not last long, being continually weakened by the quantity of unripened fruit which it gives (*novidade*).

20. BORRA MOSCA.
A variety mentioned by Aguiar among those cultivated at Torres Vedras, being a good producer, late, and yielding well in all soils.

21. BOTELHEIRA.
A vine of small account.

22. CAIRHO BRANCO.
Known only on the Minho.

23. CAMARATE (Aguiar).
Rodrigo Affonso (Aguiar).
Carrega Bestas (Aguiar).
Batdocira (Olivaes).
Alarte declares this to be an excellent kind, very early, yielding plenty of very sweet grapes, doing well in all kinds of land, but decaying in low, damp localities; and for high, substantial land there is no better. From Aguiar's notes, it seems the Camarate is a good bearer, early, ripening about the end of August, and preferring weak land. Gyrao, mentioning it among the vines of Ourem, says: It gives good, but weak wine, and that the sun in September dries the grapes.

24. CAMARATAO.
Mentioned by Gyrao among the sorts grown at Ourem.

25. CARNAL.
Mentioned by Gyrao among the white grapes of the Douro. It yields good wine and resists the effects of rain, but the trunk soon rots. Medium soils.

26. CARRASQUINHA.
Agudelho.
Trinca Dente.
An excellent table grape.

27. CASTELLAO BRANCO.
Of no particular value.

28. CATHARINA.
Mentioned by Gyrao among the vines of Ourem, but of little consequence, the wine being thin.

29. CERCIAL (Madeira).
Sercial (Madeira).
Sarcial (Madeira).
Esgana Cao (Barrada).
Esganosa (Minho).
Esganinho (Minho).
Alarte says of it: The grapes called Esgana Cao, and elsewhere Sercial, are an excellent kind, because they are yielded in great quantity and their wine is full-bodied; they are free from nearly all the troubles peculiar to others, for no one eats them, not even the dogs, on account of their harsh taste; they need good substantial soil and humid; on dry soils they dry up before ripening. Count Odart, in the "Ampelographia Universal," makes particular mention of this variety.

Its principal characteristics are: Average sized leaves, hairy, deeply sinused; bunches medium-sized, conical-shaped, not close, hanging loose; berries middle-sized, oval, whitish yellow.

The Sercial wines of Madeira are among the most esteemed.

30. CODEGA.
Malvasia Grossa (Douro).
Fennetino (Genoa).
Vermentino (Corsica).
Malvasia a Gros Grains (South of France).
This is an excellent kind and produces abundantly on strong soil; highly praised by Odart. The plant is very vigorous and thick; bark delicate, closely adhering, not cracked, smooth. It bursts buds in the end of March, plenty of rods, erect, with internodes of 0.08 inch to 0.010 inch when half mature, with little pith; knots thick and shining; leaves five-lobed, woolly on the under side, very adherent, white; bunches very large; berries very large, white or slightly yellow. It furnishes a strong, clear must, 100 of grapes give 63 of must of 1.110, containing 17.-518% of sugar and 0.376% acids.

31. COSCORO.
Mentioned by Gyrao among the varieties of the Douro. Little known and of small value.

32. CRATO.
Included by Gyrao in his list of the white kinds of Algarve. Yields medium wine; needs rich land; medium pruning; throws out long rods.

33. DEBO DE ALICANTE (Cartoxo).
Moderately productive, early, ripening in the end of August; prefers strong land.

34. DEDO DE DAMA (Lady's Finger).
A kind better suited for trellises than vineyards on account of the beauty of its bunches and its agreeable taste. It is grown all over the country and is highly prized for the table. Scabra describes it as follows: Leaves five-lobed, serrated, with reddish footstalks; bunch large, with off-set parts; berries large, long, like fingers; loose, clear, amber color; skin thick, fleshy, little juice; taste peculiar, sweet, with slight roughness. A table grape. Requires ground to be wet rather than dry and peaty (*humoso*).

35. DIAGALVES.
Verdelho Estimado (Upper Douro).
Though it has but little analogy with the Verdelhos or Gouveios, while it has some with the Formosas.

Scabra describes it as known in Beira. I give here my own description, though, on the whole, it agrees with his:

Plant vigorous; bark thick, cracked and slightly adherent; rods abundant, erect, of medium length; interknots regular, of medium thickness; knots soft and smooth; pith regular, elastic; color, reddish or clear reddish brown; leaves middle-sized, almost equal, five-lobed, entire, sharp pointed, with the lateral sinuses more or less deep and sharp-pointed, the basal sinus sharp-pointed and rather close. The upper side of the leaf rather wrinkled, of uniform clear green; the under side almost glabrous, green brighter, with the veins well shown; serrations medium in two series, and sharp-pointed; the footstalk medium and reddish. Bunches, many either large or middle-sized, cylindrical, composite, with shoulders; peduncle short and warty, whitish green; pedicel short and warty. Berries large, equal, golden, translucid, sufficiently adhesive to the pedicel, leaving little pulp when removed; sufficiently hard, much pulp, thick skin, sweet and savory; ripen in the end of September. The yield in must is 62%, with a density of 1.95, containing 18.648% and acids 0.342 %.

36. DOSAL BRANCO.
Cultivated in Monsao.

37. DONNA BRANCA.
Gyrao considers it a light, irregular bearer, both on the main land and in the island of San Miguel. On the other hand, Aguiar, mentioning it among the varieties cultivated in the Agueira vineyard, in Upper Beira, represents it as very productive, ripening early in October, and doing well in all sorts of lands.

Alarte considers it the same as the Roupeiro or Graziolo.

Scabra, describing it, says: In Extremadura, it is known as Donna Branca, and in the Douro as Colhao do Gallo.

Leaves five-lobed, badly sinuated, with some wool on the under side, and footstalks pale clear chestnut; bunches up to eight inches long; berries irregular and scattered, oval, large, amber color; skin thick, fleshy, with little juice and sweet. Chiefly for the table. Land rather damp than dry, and somewhat peaty (*humoso*).

38. DONZELLINHO BRANCO.
Gyrao considers it the third variety of the Donzellhinos. It is a good bearer; in its bunches it looks like Gouveio or Verdelho; its taste is pleasant, gives good wine, and needs strong soil.

39. DOURADO.
Cultivated in the Ribeira do Lima. Yields well; bunches ripen well and are sweet. Requires good land,

40. ESCABELLADO.
Productive and early. Uvas de Joao Paes, a good kind for yielding abundance of fruit and very spirituous wine. Grapes hard, rough on the palate, but good for preserving.

[TO BE CONTINUED.]

"AMERICAN ARROWROOT" is not arrowroot at all, but simply potato starch. As *maranta arunainacea*, the source of true arrowroot, has been grown in some of the Southern States, "American arrowroot" is, possibly, an article of commerce, but if so, it is not sold under that name. What is bought and sold as American arrowroot is in no sense arrowroot at all, and yet, the consumers, at least, are led, by that name, to think that it is. Let the authorities start their experts to examine the article.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

Meeting of National Grange—No. 6.

Report of Committee on Education.

The Committee on Education, to which was referred so much of the Worthy Master's address as referred to this subject, have considered the same, and beg leave to present the following report:

The Worthy Master has very distinctly enunciated in his able address, the purpose of our Order in this direction, and very clearly indicated the means that must be relied upon to accomplish it.

The demand for the specific education of the American farmer, the basic principle of our Order, is being intensified by the rapid progress in other departments of industry—in the arts and manufactures, in the growth of corporations, of commerce, in the wider comprehension of the relations between the government and the governed, and, in fact, in a more just recognition of the mutual dependence of the several interests and classes upon each other. But in the grand panorama of bristling activities which go to make up the sum total of our industrial, commercial and social progress, the agricultural, the most important of all, lags behind for the want of that unity of action, directness of purpose, and educational training which has given a more rapid development to other interests, and has enabled them to outstrip the agricultural in the march of progress, to monopolize, to a greater extent than is consistent with its proper interests, the legislative functions of the government, and to exercise powers which are dangerous and oppressive.

The Grange, growing out of the exigencies of this great interest, seeks to preserve the just equilibrium between the agricultural and other interests, to secure for it the protection it requires through legislation, and to elevate those who pursue it to a higher plane in our social order.

In the pursuance of this end, the practical education or training of the farmer is precedent to the other steps which legitimately follow. For the accomplishment of which the Order early adopted practical and efficient plans, with which the Patrons of the country are already familiar, and which have now been in operation for several years, and which have produced results most encouraging to the Order. Already, either through the prosecution of these plans, or through the necessity, from the nature of our institutions, for a higher qualification for the duties of citizenship, or from the demand for an intelligent development of the grand potentialities of American agriculture and commerce, more largely in the hands of farmers than any other class, an impetus has been given to the demand for practical or special education, which has made its impress upon the age. This is evidenced by a growing interest in our agricultural colleges, which have been established in almost every State in the Union, and in the efforts these are making in some States to diffuse more widely all proper facilities for the advancement of agricultural education amongst the masses. The proper recognition of the important fact that such education should be brought within the reach of every farmer, by the colleges, would surely expedite the work of the Order, and should be urged by Patrons in every State.

In this connection we must be allowed to express our regret that the agricultural interests are too frequently merged, in these colleges, into the ordinary college course. The usefulness of the agricultural college is too often dwarfed, perhaps, however, by no fault of its own, and yet these colleges are too often agricultural only in name.

The public or common schools established by public authority for a definite purpose should be, under the auspices of the college established by the same authority, conducted with special reference to the end of all public education. The college is the compliment of the common school, and should foster in it such methods as are best calculated to advance the interests at stake. Thus, these schools will become the invaluable auxiliaries of the Grange and its ultimate purposes promoted.

The Grange, organized for the promotion of a higher agriculture, and for the elevation of the farmer, has, we reiterate, adopted plans for his practical education which are excellently adapted to the end in view. We most emphatically urge the vigorous prosecution of these plans. They consist, not only in those exercises which are prescribed for the subordinate Grange, but also in the diffusion, as already emphasized by this body, of agricultural literature through periodicals, agricultural reports and books. In the present status of agricultural education only a very small part of the vast fund of information contained in these sources are available to the masses. We should seek to remove this drawback to our progress by awakening a deeper interest in the subject and thus to stimulate investigation and inquiry. But whilst we would impress the importance of such means as are at our command, we should encourage, through experimental farms, popular lectures, and every other practical adjunct to the college, the extension of agricultural education to the farmers of every degree. More particularly would we impress the importance of such early instruction in the common schools as will lay the foundation for the practical education we insist upon, which, continued in the Grange, will make the farmer a practical, useful and successful man. We would have this body reiterate its recommendations at former sessions in reference to equipping the common schools for the purpose of instructing the young, particularly of the rural districts, in the elementary principles of scientific agriculture, and would again urge upon the members of this body redoubled efforts to secure such legislation as is needed in the premises.

Let us bear in mind that education, from a Grange standpoint, is practical in its scope, and of vital importance. Yet in general education we claim only an advisory and unofficial power to suggest such methods as will, in our judgment, best promote the interests of our families and class. Whilst we, as agriculturists, strive to have our calling fully and ably represented, educated and promoted in all things in which we have a voice or hand, in common with our fellow-citizens of other avocations, we do not assume to control the educational affairs of the community, or to determine that all shall be educated from a strictly agricultural standpoint. But we would urgently impress upon the members the importance of making the subordinate Granges, schools in which we may become thoroughly taught in matters of the farm, the household, in social culture, and in business methods.

In concluding this report, we desire to incorporate and make the valuable suggestions of the Worthy Master, referred to your committee, and already published in these proceedings, in his excellent address, a part of this report, and to which we refer the reader.

All of which is respectfully submitted: T. B. Harwell, C. D. Parker, J. J. Rosa, A. M. Cheek, M. A. Eshbaugh, M. A. Lipscomb, Committee.

Received and recommendations concurred in.

Lodi Grange.—At the last meeting of the Lodi Grange, two new members were elected for membership. There will be an initiation and installation at their next meeting, the first Wednesday in January at 10 o'clock A. M., followed by a grand banquet. Invitations have been extended to all the neighboring Lodges. There is to be an initiation and harvest feast Saturday, the 31st, in Stockton Lodge. The members of this Lodge have been invited to attend. There was a good time, followed by a harvest feast last Saturday, in Elliott Grange. We regret that, it being so near Christmas, the members of this Lodge could not accept their kind invitation to be present.—*Lodi Review.*

At Haywards.—Eden has invited Temescal Grange to unite with them at Haywards, on Saturday, Jan. 7th, and install officers together, and the invitation has been accepted. We hope a good turn out will be the result, and can confidently assure all good Grangers they will not be disappointed for visiting Eden Grange. Ten o'clock, we believe, is the hour of meeting. The C. P. R. R. ferry boats leaving San Francisco at 8 o'clock and 10 o'clock A. M., connect with trains passing Haywards.

Agricultural Notes.

CALIFORNIA.

COLUSA.

Editors Press:—Happy New Year to All! We hope that everybody everywhere has enjoyed a "Merry Xmas" to their hearts' content, and now we wish them a happy New Year. To say that the people in this vicinity have enjoyed themselves is only a meager way of expressing it. To-day their cup of bliss has been filled to overflowing; and while we do not feel as though we are blessed above our fellows, yet we are content with our lot. We have already been blessed with a goodly supply of early rain, and to-day another glorious rain has set in. Much rain in California means much prosperity.—L. D. J., Olimpo.

EL DORADO.

Care of Orchards.—*Placerville Republican:* As a rule, the orchards of this county have had little or no care, and it is hardly to be wondered at that our fruits, especially apples and peaches, have greatly deteriorated during the past ten years. For want of cultivation, or from over-production of other crops and pasturage, the trees in most of our orchards have become stunted and even moss covered in some instances. Mr. Wm. Hendrix who, it is admitted by all, has one of the finest orchards in the county, tells us that he practices thorough cultivation and does not attempt to raise anything but fruit in his orchard, and puts on all the manure that he can procure, and in this way keeps his trees thrifty and most productive. Last year he scraped all the rough bark from his trees and washed them with some strong solution, and has since been but slightly troubled with moth or other fruit pests, and has his trees so well in hand that it will require but little attention to keep them comparatively free. He thinks that by this treatment the trees are kept growing to such an extent as to destroy the larvæ, or most of it, if any is deposited upon the trees; this, together with keeping the trees clean and bright, doubtless has much to do with it. As fruit has become a staple and valuable article of commerce, no time should be lost in reclaiming our deteriorated orchards.

FRESNO.

An Avenue.—*Expositor:* Thos. E. Hughes has finally secured a donation of 20 ft. from the owners of the land on each side of the county road leading from the town of Fresno to the west line of the Easterby rancho, a distance of 2¼ miles, making an avenue of 100 ft., and is now at work making ditches on each side, and preparing to set out shade and ornamental trees, which will make one of the most magnificent drives in the State. Will not the owners of the land through the Easterby rancho donate the same amount of land before they get the land improved, and in a few years Fresno can boast of the finest avenue on the Pacific coast.

LAKE.

Agricultural Society.—The new Directors of the Lake County Agricultural Society, elected on Dec. 12th, met last Saturday, and H. Gruwell was chosen temporary Chairman. Directors present: Bond, Mitchell, Hanson, Clendenin, Cruwell and Merritt. On motion, the Directors proceeded to the election of officers, with the following result: R. D. Merritt, President; L. H. Gruwell, 1st Vice-President; D. A. Hanson, 2d Vice-President; T. A. K. Mitchell, Treasurer; D. L. Miller, Secretary. The meeting adjourned to meet in Lower Lake on the first Saturday in February, 1882, 12 M.

LOS ANGELES.

Rain Needed.—*Herald:* A drive yesterday of some 27 miles through the southern portion of Los Angeles county advised us that the country is much in need of rain; that the farmers are halting in their ploughing to see how the season will pitch; that their corn-bins are full to repletion; that the black Berkshire hog abounds on every hand, as fat as butter, and that the farming community generally are yet feeling the impetus given by the good season of last year and the high prices which they obtained for their products.

Raisins.—We have made a close examination of the Orange and Westminster raisins and have been delighted at the great size, fine flavor and admirable character of this product of our county. Mr. Stamps, of Orange, received for his raisins, without packing or boxing, 8 cents a pound, which was equivalent to $46 a ton for the grapes on the vines. As Mr. Stamp's vines already yield three or four tons to the acre, and will when more mature yield from five to seven tons, the profits of the business may be realized. The raisins are cured by simply exposing them to the sun for a period, generally of three weeks, according to the weather. There are no more thriving communities in this State than Orange and Westminster.

Lessons of a Dry Year.—The year 1877, much havoc as it wrought with people who were unprepared for it, and who obstinately ignored the conditions of the weather in California, was fraught with incalculable blessings to this section. It led to the utilization of our water resources and to habits of economy and self-reliance which have really changed the old time shiftlessness and chance life into a determined and systematic development of our unrivaled resources. Water has been developed and utilized which heretofore was disregarded. Amongst other things, it led to the construction of storage reservoirs in the city of Los Angeles whose usefulness is recognized, but is as yet but in its infancy. Should we have a dry year in 1881-1882, it will simply stimulate the development of our water resources, which has been really only fractional as yet, and a very small fraction at that. Our country is admirably provided with streams of perennial flow, which are discharged from considerable altitudes, at a velocity which excellently serves the purposes of irrigation. Fully two-thirds of their fertilizing waters are wasted in clumsy and porous ditches. One more dry year, and even the stupidest of our too prosperous people would recognize the necessity of carrying these precious waters in cemented and covered ditches, and in iron pipes; thus, at a blow, multiplying by three that area of Los Angeles county which would forever thereafter be independent of an occasional dry year.

MARIN.

Nicasio.—Cor. Petaluma *Courier:* At this writing it is raining quite hard, with prospects of plenty more to come. What rain we have had in the past week or two, together with the warm weather, has made the hillsides green with new grass, and the dairying prospects for this time of the year have never been better. About the only industry out here is dairying, and as good butter as can be found anywhere is made here. There are in the surroundings of Nicasio 25 or 30 dairies, ranging from 500 to 2,000 and more acres, and the average acres to the cow is eight or nine; so you see it is quite an extensive business. For a year or two ago, since Messrs. Taft & Simms, Wells, Fargo & Co.'s agents, started wagons to haul the butter to the railroad station at San Geronimo, five miles from here, all the butter is brought to this place by the dairymen and shipped by express to San Francisco for only $1 per box. The amount of butter shipped now is about 30 boxes a week. A San Rafael butcher comes here twice a week to buy calves, and during the last three or four weeks has bought all the way from 40 to 60 per week. Besides what they, sell the dairymen kill a good many and raise some to replenish their ranches. Another quite important industry is the cutting of wood here, which furnishes employment to all the Indians in this neighborhood, and of whom there are quite a number. Mr. Martin Miller employs from 15 to 20 all the time, and they and their families live in cabins on his place. These Indians are all quiet and well-behaved and most of them very industrious. Once in a while they have a grand dance, when work is suspended for a few days.

NAPA.

A Fine Stable.—St. Helena *Star:* The large and handsomely-built stable of Capt. Niebaum, near Rutherford, is 34x86 ft., and is three stories high, including the basement. The main floor contains the stalls, harness-room, carriage-room, etc. The floor itself is specially prepared for the purpose. A stout plank floor is painted with coal tar, and on this is a thick layer of asphaltum. The stalls are marvels of perfection. Their floors are racks removable at pleasure, through which water passes off and leaves the animal dry. The hay-rack is of cast iron, fitted to the foot of a chute which conducts the hay down from the loft above. The feed-box is of iron, especially cast for the purpose. Along the lines of stalls are gutters, receiving the drainage and carrying it away. These stalls are about 18 in number. In another apartment are drinking fountains for the horses and hose attachments for washing them off. In the harness-room are racks for harness and saddles complete—as neat and orderly as a clothes closet. In the carriage-room are vehicles of all kinds, from the sulky to the double carriage; enough, apparently, to make a very fair livery stock. The loft above is devoted chiefly to the storage of hay, and will hold a very large amount. The basement below, 12 ft. in hight, is devoted to various useful purposes. First, a store-room for the wagons and carts of a rougher character than those housed up stairs. Next, an inclined plane up which horses are conducted to the story above. Then a paint room, where vehicles may be painted without leaving the premises; a manure pit which receives the waste from the stalls above and has appliances for thorough decomposition. Lastly, a cow stable with curtained sides to open it out to the weather or shut it in at pleasure. The whole has a stone foundation and is protected in every way from decay. It is all handsomely finished, presents an imposing appearance and is highly creditable to the skill and taste of Mr. McMillan, who was its contractor and builder. The cost is about $8,000. Besides this stable, much other building has been done on the place this year.

SANTA BARBARA.

Editors Press:—We have had thus far about three inches of rain. Feed started in good season, and farmers were happy. Plowing and seeding progressed in fine style, and prospects were never better. All sorts of industries and improvements were in progress or in contemplation, and much money was to be made this coming year, but the rains have ceased; the ground and vegetation and the farmers' hearts are becoming dry. Many prophesy a dry year, but it is quite too early for that yet. When our usual rainy months have passed, it will be quite early enough to foretell evil to come. In foretelling the weather, I can see no reason in saying that because last month was wet or dry next month will be dry or wet. If last year was wet or dry, it is no indication whatever that this year will be similar or dissimilar. As we look back upon past years, none but the most imaginative can see any regularity or system in them. The weather is governed not by the moon or planetary conjunctions, but, partially at least, by laws of which we have very imperfect conceptions; and all man's prognostications are little else than guesswork. About all we can do in the matter is this: We can look back upon the past 10 or 20 years, the more the better, figure up the average rainfall of any particular period—January or February, for instance—and then we can say the chances are that we may have the same amount the coming January or February. Farther than this, it seems to me no one can go with reason. Upon this basis of calculation we shall yet have plenty of rain to make good crops, and all had best make their minds easy upon the subject for the present. The Lima bean fever is still raging, and land in some cases has gone up to $150 an acre in Carpenteria. Why not, when they make more than $100 an acre with one crop of beans. We will hope they will do as well again this coming season. Considerable new land is being prepared for the everlasting bean. Considerable barley is being sown, but land is now getting too dry to plow, and the labor is mostly stopped. Barley now up, is drying out in places, especially the past few days of hot suns and drying winds. Greetings and a happy New Year to all readers of the Rural Press, editors included.—S. P. Snow, Santa Barbara, Dec. 21st.

SANTA CLARA.

The Gilroy Region.—*Advocate:* The rains with which the Gilroy valley has been favored this month give to all our farmers the hope of an abundant harvest. All are vigorously at work plowing the moist soil and scattering the seed, expecting the heavens will continue to be propitious and insure them a good liberal reward for their labors. The new grass is cheering the stockman. His flocks and herds are relishing the new nourishment and picking up lost flesh.

SANTA CRUZ.

New Potatoes.—Editors Press: Last week I sent you some raspberries and strawberries for Christmas, in order that you might see what Santa Cruz can do in the way of growing nice fruit, nearly all the year around, and now I send

you some new potatoes for New Year's. You see these are nice, smooth potatoes, of good size, and they have grown since the October rains, which were in quantity sufficient for starting a new crop of grass, and the plow for seeding; and our climate is so mild that these potatoes have grown in the field, while our gardens have been full of nice flowers, and our pastures clothed with green grass, and this is not new for Santa Cruz; we always have fall rains, [and winter rains that insure us good crops with good tillage. Now, further, I want to remind you that Santa Cruz is not only one of the finest fruit growing countries in the world, but we grow large crops of potatoes and other vegetables, and year before last we grew more wheat to the acre (100 bushels), than any other country thus far heard from. So if you want to "locate" in a country where you always have rain and sunshine in season, and in quantity to suit, and never enough rain to cause destructive floods, nor excessive sunshine to cause drouth—and where the winters are mild and full of sunshine—and where the summers are cool and pleasant, with sunshine for months without intermission—come to Santa Cruz, its all here.—M. P. OWEN, Santa Cruz, Cal. [The potatoes are very handsome and well grown. We must caution our enthusiastic friend against the effort to monopolize all the blessings of California climate. There are hosts of places which can show all he claims for his own region. We like to see a man in love with his home, but he must not forget that others have homes also. Santa Cruz is splendid and so are some other counties. The distant reader must be cautioned against taking 100 bushels of wheat per acre as the average for Santa Cruz county. It is probably the result in one or a few instances, and that has been the case also in other counties in the State. No doubt all our correspondent writes about Santa Cruz is strictly true, and those seeking homes may rely upon it; but some other regions can make similar claims' EDS. PRESS.]

SOLANO.

SIDEHILL PLOW.—Suisun *Republican:* J. M. Fix, at Bird's landing, is manufacturing the most popular sidehill gang plow in the Montezuma hills. It is an improved gang of his own get up, and it is used by the most prominent farmers in that section, who say it is the most perfect gang they ever saw.

SONOMA.

TIMBER LAND,—The Cloverdale *Reveille:* A large number of the wool growers are securing title to their possessory lands by entering them as timber claims. This is probably the cheapest as well as the best method of obtaining title. It costs $2.50 per acre, all told, and a title secured in 60 days, without residence. Under this method, married women can take up land also—a fact not generally known. There is no worry of securing parties to enter lands, and chances of buying them out. It is strictly a legitimate transaction, and there is only half the worry and trouble. Where it can be done, we advise this method.

CLEARING FOR FRUIT.—Healdsburg *Enterprise:* J. W. Ward, who lives west of town, has five men at work clearing land for vines and fruit trees. The timber from the cleared lands is converted into charcoal, and pays for the clearing. He will put out some five acres of orchard and about 20 acres of vineyard right away, and intends to extend his acreage of vines and trees. He says his bearing orchard, although not containing the best varieties of fruit, paid him about $200 an acre this year.

TULARE.

POISONOUS PLANTS AND STOCK DISEASES.—*Delta*, Dec. 30: The following communication is of great value to stock-raisers, coming as it does from one of the most successful and most experienced stock-raiser in Tulare county. While he avoids the cattle disease, a discussion of which led to the poisoning of sheep, he treats the latter branch of the subject intelligently, and gives information that is of the greatest importance to all persons engaged in the business. Following is the communication: *Ed. Delta:*—Having never had anything to do with the disease known as "blackleg" among cattle, I am not prepared to speak fully on the subject; but concerning the various poisons in the foothills, I have had about 15 years experience, and more particularly with sheep than with any other kind of stock. As to the poisoning by black fern, mentioned by Mr. O'Connor in a recent interview published in the *Delta*, and so generally believed by sheep raisers to be a fatal poison for sheep, I would state that my experience has led me to consider the fern an entirely harmless weed. It is a species of the yerba buena used by Mexicans for a table tea. I have frequently chewed it, and have seen my Mexican herders gather it to make tea. For this purpose they gather that which grows where it receives the full benefit of the sun, as that which grows on the north side of hills and in shady places is unfit for tea, it being insipid and lacking in aromatic strength. Wherever the so-called black fern grows, there will be found a brush known as poison oak, of which the leaves and bark, and especially the berries, are poisonous to any hungry animal. It acts as a powerfully astringent caustic, burning the stomach and intestines when coming in direct contact with them, which is the case when the digestive organs contain no other food as a palliative. It is an evergreen, and hence hungry stock will the more readily eat it when other food is dried up. It is very seldom that stock running at large is affected with it, if there is any other food; for it is not palatable food. Sheep kept in close herd will eat anything coming within their reach, if they are hungry; but I have never known cattle to be affected by it. Horses and mules frequently are, but it is not noticeable on them unless, after having eaten it, they are warmed under work. The fact that an animal has been thus poisoned may be readily detected by the breaking out of a profuse perspiration, and trembling and twitching of the muscles, caused by the intense burning pain in the stomach and intestines. There is also a disposition to stop and lie down. If the animal is turned loose and not molested for two or three days, the injury rarely proves permanent; but if it is forced to continue exercise, the poisoning may prove fatal in from 30 minutes' to three hours' travel. Sometimes they drop dead from a standing posture, and at other times they linger for several days. Exercise is invariably injurious. And it is best to let the animal have its own way. I have had probably 1,000 sheep affected with it at a time, and until I found out how the case should be managed, I lost a large number; but of late years I seldom lose a sheep with it if I am with them myself, and I am always particular to instruct my herders that when they are driving through regions where poison oak abounds, and a sheep shows a disposition to lie down, to quietly walk around it; and nine times out of ten it will get up after a few minutes and follow the band. If a considerable number show indications of being sick, I order that the band be checked and the sheep allowed to spread out and move along as quietly as possible, and avoid all running or exercise that will warm them up, and stop them for three or four hours upon the first good feed arrived at; but I am cautious for two or three days to avoid all running or unnecessary exercise. There is no medicine so good for this poisoning as a vigorous letting alone, and allowing the sheep to scatter sufficiently to select their food. Care should also be exercised in seeing that they are not permitted to run down hill.

TUOLUMNE.

EDITORS PRESS:—We are in the midst of frost and shining sun in the foothills. The weather is truly delightful. We have had sufficient rains so far for all agricultural purposes. The young grass is all that could be desired. Early sown grain is from one to four inches high. Farmers are still busy seeding. If the season continues as begun, good crops may be anticipated. Surveyors are now busy in our county, laying out a path for the Nevada narrow gauge railroad. We will not speculate much even when the whole line is surveyed, we have been so often deceived by appearances. We have been careful of late in not giving a glowing color to our county for productiveness, or as a sanitarium resort. There is danger of creating a false impression by so doing, and the "up and go" portion of society imagine that money may be acquired without tireless labor, and houses found all ready for occupancy. All this is fallacious. Go where we will, it takes means and good judgment to locate and create a comfortable home. One county may be as good as another for whatever position or condition may be adapted to our fitness. One recommendation exists in our foothill selection. Settlers are generally permanently fixed, of clannish turn. Living as one family for thirty years and upwards begets friendships and acquaintances of a lasting nature, and wherever you find an "old Tuolumneite" you find a congenial friend, ready to help in time of need.

We love her rugged, flower-clad hills,
Her sparkling, crystal, rippling rills,
And all her pine-clad forests grand,
Whose roots gain strength mid the golden sand.

JOHN TAYLOR, Chinese Camp, Dec. 18, '81.

VENTURA.

EDITORS PRESS:—No rain of any account yet; plowing not begun; weather cooler than usual. Hay high; horses high; climate delicious; Eastern visitors plenty; salubrity unequaled probably in the world; special sanitarium for asthmatic patients; game from lions to quail; trout bite freely.—S. NORDHOFF, Dec. 25th.

A FEARFUL calamity occurred at Shanesville, O., last Saturday night. It resulted in the loss of several lives, and serious injury to nearly 100 victims. A floor gave way with a terrible crash, precipitating 300 people to the first floor. The red-hot stove fell with the crowd, and the oil from the broken chandeliers saturated the clothing of the unfortunate victims, and the whole mass was soon enveloped in flames. The band had just ceased playing, when the crash was heard and the floor began to settle lengthwise in the center; the joists slipped off the posts in the rear, and pulled out of the brick wall in front. The center settled rapidly and broke lengthwise. This threw people, tables, stoves and all together. The falling floor barricaded the front doors, but they were soon chopped down.

HONORS.—The son of our citizen, M. J. O'Byrne, has been a successful winner of $100 a year for three years at the Intermediate Examination, open to all attending schools of Great Britain and Ireland, and he stands a similar chance next year for higher branches. Mr. O'Byrne recently ranched near Merced city and has three sons in Clongowe's Wood College, county Kildare, Ireland. This prize money will nearly pay for one year's board and tuition of the three boys.

Wool Production and Trade of 1881.

The wool report of E. Grisar & Co., of San Francisco, furnishes the following reveiw of wool production and trade for the year 1881:

Our wool market this year opened under the influence of declining values in the East, and stocks there being large, and the demand limited, buyers were conservative; while, on the other hand, growers having been accustomed for several years to high opening prices, were not ready to meet the market until the accumulation of the new clip in the warehouses compelled them to modify their views. The market finally opened in April, and continued active until July, the demand being sufficient to take wools as fast as they arrived and to gradually reduce stocks. Since July, shippers of wools in the grease have bought comparatively little. The chief support of the markets has been manufacturers and local scourers. Prices have varied but little. An advance of about 10% on choice Northern spring was established for a short time, but was soon lost. Manufacturers, both local and Eastern, have bought largely of spring wools. Local scourers have taken most of the eastern Oregon and fall wools. The amount of wool scoured here has increased very largely during the past year, and the demand from scourers for the wools they wanted has been so great that shippers in the grease were unable to do business in these descriptions. The capacity of the mills now running is from 75,000 to 80,000 lbs. per day. Most of the fall clip exported will go forward in scoured condition. The recent reduction in overland freights from 2¾c per lb. to 1¼c per lb. on low priced wools, and to 2c on wools of medium cost, has increased shipments in the grease to some extent.

The spring clip, in appearance and soundness of growth, was superior to last year's production. Each year there is more difficulty in finding wools free from bur or seed. Shrinkage has exceeded buyers' expectations, and wools sent forward for sale have gone into consumption slowly, because other parts of the United States were producing equally good wools, which cost less clean. The clip of California is constantly growing finer and of more even grade, and the shrinkage increases with the improvement in quality, and although prices established here were not above the average, the poorer condition of the wools made these prices too high. Besides increased fineness, it must also be taken into consideration, that some of the best grazing land has been devoted to tillage, so that sheep have not only poorer pasture, but are compelled to travel more in search of feed. The effect of being driven from place to place is especially noticeable in the amount of dust fall wools contain. The opening and closing rates of spring wools were as follows. The difference made in favor of good stapled wools is greater than heretofore: Choice Northern, 29 to 30c; small sales were made at 32½ to 33c; fair to good Northern, 25 to 27c; average stapled (San Joaquin), 17 to 23c; average stapled, Southern Coast, 16 to 20c; good stapled, Southern Coast, 17 to 20c. The highest prices on all classes ruled in June.

The fall clip was of better staple than in 1880. The amount of very heavy sandy wool was smaller. Still the average shrinkage is about the same, although there may be a slight difference in favor of this year's product. Wools began to arrive in August, but very little business was done before November, and in the mean time receipts accumulated until stocks were larger than they have ever been. Owing to large supplies of old fall in the Eastern markets which could be moved only with great difficulty and at low prices, buyers were very conservative. Growers expected the rates which ruled in 1880, and yielded very slowly, until finally prices reached the point at which scourers bought freely of some descriptions, and lower freight rates induced purchasers for Eastern manufacturers to enter the market. Sales during the past two months have been large, and stocks, although considerable, are much smaller than was expected. Good stapled, nearly free mountain wools for scouring, and sightly parcels for shipment in grease have been in best demand, and such wools are in small supply. Heavy and defective wools constitute most of the stocks. Such wools have declined in price since the opening of the season, while other kinds are firmer and higher. Quotations: Choice Northern, 20 to 22c; fair to good Northern, 17 to 19c; fair to good San Joaquin (mountain), 15 to 17c; heavy or defective San Joaquin, 11 to 13c; Southern Coast, in good condition, having a few burs or seeds, 13 to 15c; Southern Coast, ordinary condition, 11 to 12c.

Wools grown in eastern Oregon constitute the greater part of the production of the State. Arrivals were earlier than usual, and met with ready sale. Opening rates were 25 to 26c for choice; 23 to 24c for good, and 21 to 22c for fair. Prices advanced about 8%, but afterwards fell back to opening rates. The demand from scourers was sufficient to take most of these wools at higher rates than shippers in the grease could afford to pay. There is now no stock on hand. The condition of the clip is as usual, as there was less very choice or very heavy. The quality, however, shows a constant improvement. Valley wools vary but little from year to year. Fine wools brought 31 to 32c. Ordinary lots 27 to 29c. Lower grades being undesirable for shipment, have generally been taken by local mills. Stocks of Valley are about 200,000 lbs. spring, and same amount of fall.

The clip of California has not been as large as was anticipated. Low prices and a dull market have prevented some growers from shearing in the fall, but this has probably not been very general. Sheep are being constantly driven into other States or Territories, and the number of large flocks is decreasing, especially in those localities where owners of land find that they can cultivate lands formerly used for grazing. Until farmers combine sheep raising with farming, like their competitors in the Eastern States, no great or permanent increase in the wool product of California can be expected.

Wool Production.

RECEIPTS AT SAN FRANCISCO:		
January	702	Bags
February	305	"
March	3,347	"
April	23,540	"
May	26,152	"
June	12,189	"
July	5,630	"
August	3,691	"
September	14,794	"
October	16,502	"
November	10,706	"
December	5,058	"
Total	122,615	"
Of which there was Spring Wool, 71,078 bags, weighing	21,465,548	Lbs.
Spring Wool shipped direct from the interior	2,309,429	"
Total Spring production	23,774,977	"
There was Fall Wool received 51,537 bags, weighing	17,522,580	"
Fall Wool shipped direct from the interior	902,402	"
Total Fleece Wool	42,199,959	"
Pulled Wool shipped direct from San Francisco	1,004,810	"
Total productions of California	43,204,769	"
On hand Dec. 31st, 1880, about	2,000,000	"
Received from Oregon, 26,313 bags	7,136,075	"
Foreign Wool received, 4,666 bales	1,390,000	"
Grand total	53,730,844	"

Exports.

DOMESTIC, FOREIGN, PULLED AND SCOURED.		
Per rail, inclusive of shipments from the interior	30,652,719	Lbs.
Per steamer, inclusive of shipments from the coast	76,319	"
Per sail	7,437,339	"
Total shipments	38,166,377	"
Value of exports	$7,000,000	
On hand Dec. 31st, 1881, about	5,000,000	"

Difference between receipts and exports arises from consumption of local mills, and wool on hand awaiting shipment in the grease or scoured. The difference is more marked than formerly, on account of the increased amount of wool scoured. Foreign wool is chiefly from Australia, in transit to Eastern markets. The weights of receipts and exports are gross. The usual tare of bags received is about 3 lbs. each; on pressed bales shipped, 14 to 16 lbs. each.

Production of California Wool.

1854	175,000	lbs.	Am't brought forward	60,711,952	lbs.
1855	300,000	"	1868	14,232,657	"
1856	600,000	"	1869	15,413 970	"
1857	1,100,000	"	1870	20,072,660	"
1858	1,428,351	"	1871	22,187,188	"
1859	2,378,250	"	1872	24,255,468	"
1860	3,055,325	"	1873	32,155,169	"
1861	3,721,998	"	1874	39,356,781	"
1862	5,990,300	"	1875	43,532,222	"
1863	6,268,480	"	1876	56,550,970	"
1864	7,923,670	"	1877	53,110,742	"
1865	8,949,931	"	1878	40,862,061	"
1866	8,532,047	"	1879	46,903,360	"
1867	10,288,600	"	1880	46,074,154	"
			1881	43,204,769	"
Am't carried forward	60,711,952	"	Total	558,624,124	"

News in Brief.

THE year 1882 began on Sunday and will end on Sunday.

A BILL to abolish the whipping-post has been introduced in the Legislature of Virginia by a colored Senator.

FOUR million one hundred and fifty thousand dollars has been expended this year in buildings in Denver, Colorado.

IT IS now thought probable that Iroquois and Foxhall will try conclusions in the spring over the Newmarket course, Eng.

AN agent of an Eastern packing establishment is in Glendive, M. T., buying buffalo meat to ship East for canning.

THE investigation of the theaters in New York bring to light instances of failure to comply with the requirement of the laws in nearly every establishment.

DE LONG'S store, at Fresno, was entered by burglars on Thursday night. The thieves were subsequently captured, and are in jail and the stolen goods recovered.

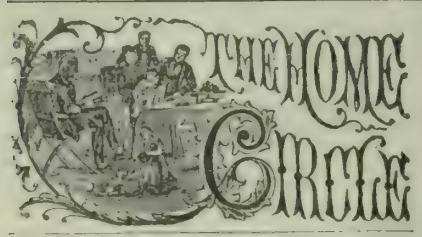
IT is said that Los Angeles county produces 45% of all the corn raised in California. Last year's crop was 752,104 bushels, against 1,993,325 bushels in the whole State.

THE arrival of the new year and the throwing open of the White House has broken the season of universal mourning in Washington society over President Garfield.

THE Southern Pacific Railroad Company, of Arizona, has appropriated $300,000 for the construction of the road from Yuma to Port Isabel. President Crocker says the road will be completed in 60 days.

THE Sunday law went into force in Washington Territory on the 1st inst. In Seattle, the law is strictly observed, but the prevailing sentiment seems to be that the law is void and will be disregarded in future.

THE Columbia and Puget sound, otherwise the Northern Pacific Railroad Co., is endeavoring to get a right of way along the city front of Seattle. The company promises to put in switches and side tracks wherever owners of wharves desire for the handling of grain.



The American Producer.

Give me the blue of the bending sky
O'er the land of the freeman hung,
And the bright, full beams of the sun on high,
While the hymn of the free is sung;
Oh, ne'er was the sky o'er a land like ours
Bent down with its arch of blue,
Or joyfully wept in the crystal showers,
Or gemmed the glad earth with dew.

Give me the land where the plough's bright share
Turns wealth from the virgin soil,
Nor melts in the forge where the vulcans bear
A sword for the warrior's spoil;
Not the song of the soldier's bloody trade,
Nor the trumpet's startling twang,
But the vow of peace on the altar laid,
Round the hearthstone fondly sang.

Oh, bright the land where the golden grain,
Waves over the fertile fields,
And the tall, ripe corn on the spreading plain
Its harvest of bounties yields;
Where the sounding flail, as it swings in air
Falls fast on the thrashing floor,
And the Autumn sun shows the toilers there
With the gold dust covered o'er.

Let the broad land wake in its proudest bloom,
In the light of our broader skies!
Let the anvil, plow and the busy loom
In their power and grandeur rise;
Let the workers all, in their well paid toil,
Rejoice with a labor song,
And the blessing of God on the uncovered soil
Be sought by the trusting throng.

Let the yeoman sing as he tills the land,
And follows the shining plough!
Let the toiler sing, as he lifts his hand,
Oft wiping his sweating brow!
Let the maiden sing! Let the anvil ring!
And the radiant truth be told—
That the labor of home, in its fruits, shall bring
A truer wealth than gold!

Then give me the blue of the bending sky,
O'er the land of the freeman hung,
And the bright, full beams of the sun on high
While the hymn of the free is sung.
Oh, ne'er has a sky o'er a land like ours
Bent down with its arch of blue,
Or joyfully wept in its crystal showers,
Or gemmed the glad earth with dew!

Nate Weston's Debt.

Written for the RURAL PRESS by MRS. RANCHER.]

It was, let me see, in '69 or '70. Being an old Californian, I ought to tell you the exact date; but then, I'm not a '49er. If I had come to California in that magic year, or even in the early fifties, the case might have been different. As it is, I must refer you to some one who did. If you will ask any genuine pioneer what year it was that——& Co. made a rule forbidding ladies to ride on the outside of their stage coaches, you will have the date of my story. It was a day in August. Gardener, the driver, sauntered into the company's office in Stockton, and glanced over the register. "Whew!" whistled he; "six white men, eight Chinies and one lady. A sweet ride it'll be for the lady! I only wish one of the bosses had to ride inside with eight of those pig-tails; for that's the way it'll be fixed."

And that was the way. Every white man was registered for an outside seat, and the Celestials had to be content with what was left. And the lady——she came quietly down the gang-plank of the *Julia*, a young girl, fair and sweet to look upon. "This way Miss," called the busy agent, and May Weston took the place assigned her. One Oriental form after another then filed in filling up the eight remaining seats.

May glanced timidly about her. "Don't be a-feared Miss," said the agent, reassuringly, "them uns is harmless."

"Umph!" grunted the driver. "It's a shame," said the other passengers.

However there was no time for talk. "All Aboard," shouted the agent. Crack! sounded the driver's whip, and the horses sprang to their work with gallant pace.

It was one of those sultry days when the heat seems as intense at 6 o'clock as at noon. Relentlessly the sun poured his beams on man and beast. No wind, scarce a breath of air, and the dust rising just high enough to float in at the open windows and settle stiflingly on all within.

For a while May watched the strange faces about her, and forgot the trials of the road. But after a time the peculiar smell that she had noticed from the first, the smell that proclaims the opium smoker, grew more and more sickening. She leaned far out the window, but the baneful drug seemed to permeate the air.

"Sixteen Mile House," shouted the driver, as he drew up his panting team before a low-built, country inn. "Get out and rest a bit, won't you?" he asked presently of May as he opened the coach door.

"Oh, if you please," answered poor May, pale now, even to her lips.

"Are you sick?" he kindly asked.

"A little," she replied; "perhaps it's the heat. I shall be better now that I can sit in here."

The driver, seeing her cared for by the hostess, turned toward the stables.

"I say, Gardener," said a tall young fellow, accompanying him, "it's abominable to make that girl ride inside with those Chinese; can't you break the rules for once?"

"Fur once," repeated Gardener, puffing hard at his cigar; "once, why, that there law has ben in force well nigh onter a year, and I have broke it about fifty times. Yer see, if a lady is stage sick, and some passenger helps her up the side of the stage whilst I'm lookin' t'other way, it's blamed likely I'd order her down agen; now, ain't it?"

"U———m, I understand;" said Charlie Haywood. Then walking to the door of the tavern, he raised his hat to May and said: "I beg your pardon, but the driver says if you will ride on the outside of the coach, you will not be sick; besides, it is much more pleasant."

"You are very kind," she replied, as a thought of the eight Chinamen, and of that vile odor, came into her mind. "But can I ride there?" "Yes, indeed; ladies generally prefer to do so," he answered; and soon May was in her lofty seat, with the driver on her right hand and a corpulent, grey-haired man, whom the others called "Cap," on her left. Ah, this was a change! The dust could not reach them now; the air, if hot, was pure; the country novel and interesting.

"Friends in Columbia?" said Gardener suddenly to May, "I see you're booked for that camp." "Yes sir;" she answered, "my father lives there; are you acquainted in Columbia?" "I reckon if I ain't I oughter be by this time," he replied.

"Because," she continued, you may know my father; his name is Weston."

"Nate Weston?" querried the driver. "Yes, sir," said May, after a momentary hesitation. The staid old aunties at home had always called him Nathaniel.

"Why, bless you, I've known Nate Weston for the last ten year; and I've known nothin' but good of him, either," he added.

A look of pleasure came into May Weston's bonnie brown eyes; for the driver's words sounded like genuine praise; and it is sweet to hear well of those we love.

"How pleasant," she said, "that you know him. Perhaps you will tell me when we reach his home. You see," she explained, "father, in his last letter, gave me particular directions as to what I should do, if anything prevented him from meeting me in Stockton. He said I need not go quite to Columbia. That the stage passed near his door, and that you would point it out to me." "Jess so," Gardener answered. "I remember me now, the old man told me a week ago that his little girl was coming out from the States, but I took it that his little girl was a child."

"How delightful!" cried May, with the gleesome air of a child indeed. "No doubt papa imagines I'm the same little girl he left at school nine years ago. You see," she continued, "I wrote him we would leave the middle of August, and instead, Mr. and Mrs. Sawyer, who took me in their care to San Francisco, concluded to start the first; so here I am, and papa don't expect me for two weeks. Won't he be pleased when I surprise him to-night!"

The passengers looked pleased, in sympathy.

"Well, Cap," said the driver, addressing the old man, "I'll have yer ter home soon; here we be at the ferry."

Dinner over and the tired, dusty horses changed for fresh ones, once more they started. Through the covered bridge that crosses the Stanislaus, past the toll house, where a young girl gave them a basket of California's luscious peaches; up, up, they began to rise, and May's spirits rose too; for was not this the beginning of the mountains, the mountains that were to be her home?

On they went, till at the foot of the "Big Hill" the driver drew in his horses and called upon the gentlemen to get out and walk.

Deprived of its ballast, the stage rolled and tumbled over croppings of bowlders, so bare and large that May wondered how the horses kept their feet.

Near the top, Gardener pointed to Charley Haywood, and said: "That young feller there, who spoke ter you at the Sixteen, said as how he'd give up his seat and ride on the boot ef I'd break over the rules and let you ride out here. So now's Cap's seat is vacant, I suppose it's no more'n fair ter let him have it."

"Of course not," replied May; "but I don't understand about the rules which you say you have broken."

"You don't!" ejaculated he, surprisedly; "then why in time did you think we put you inside with yon heathen?"

"I don't know, really; I supposed you thought it safer and more pleasant."

"Not much," responded the driver, emphatically. "Once we had an accident on this road, a regular turnover. Don't be skeared, we never have but one in five year, and this was only a year ago. There was a lady on the driver's seat, as you are now; so the company held, that, if a lady was riding in front, the driver could not attend to his business. To be sure, there was a bolt made of poor iron that gave way and let the stage down, but then it was more convenient to charge it to the lady. So the rule was made forbidding women to ride here. Still whenever a lady has been sick and wanted to come out here, I've been too blind to see."

"But is it not known?" querried May.

"Yes," answered Gardener, "always. Some one always blows on me. At first they were wrathy; talked of losing me my place. But, bless you, there's no danger. Sam Smith and I've been on this line too long to git our walking papers for a trifle like that. Halloo, Charlie," continued he, as they came up with the men at this point, "you ken take Cap's place unless you're stuck after your seat on the boot."

"Not in this dust," replied Charlie, mounting to his place.

"By the way," said Gardener turning to May, and striving, as he always did when speaking to a lady, to use his best English, "my friend Haywood is a great pardner of your father's; she's a daughter of Nate Weston's," he added to Charlie. Charlie gave a start of surprise. Nate Weston's daughter, he reiterated.

"Yes," said May, "I have come out to see my father, to live with him."

"What's the matter with you, Charley? You look as if you had seen a ghost," said Gardener. "Haven't you heard Weston say he was looking for his daughter?"

"I thought she was but a little girl," replied the young man, apologetically.

"Papa will be surprised to see me," cried May, eagerly. "I've taken such pains to learn to keep house. Oh, we will be so happy!"

Truth to tell, May Weston was not naturally at home with strangers; but these strangers knowing her father, seemed like oldtime friends.

But Charley did not join in the pleasant conversation, and May, noticing his reserve, grew silent too. At "Taylor's," Charley jumped from the coach, and followed the driver into the stable.

"I say, Gardener," he began, "at Knight's Ferry I had a telegram from father telling me to hurry home; that Nate Weston had been caved on and is dead." "Caved on," echoed the driver.

"Yes, they had finished that shaft and were drifting in, when I came away. Now, what's to be done? I guess I had better take her to our house and let mother tell her," decided Charley. "But," objected Gardener, "she knows the old man cabined at Springfield Flat, and I've promised to set her down there."

"Then, you must tell her, I can't," responded Charley.

The driver shook his head. "You're used to women folks and I ain't," and he walked away, to prevent further discussion.

After that, there were two silent men, while May wondered at the change. On they rolled, through Chinese, Montezuma, Jamestown, Sonora; still neither of the men spoke. Shaw's Flat came in sight, as they rounded the top of the long hill. Charley knew he could postpone no longer, and made one desperate effort. "Miss Weston," he began, "your father has been a friend of ours for many years. My mother and sisters will be glad to see you, if you will go to our house to-night, and will go home with you to-morrow."

"You are very kind," she murmured, "but perhaps you can understand how anxious I am to see papa. It seems to me I could not pass his door."

"But I have another reason," urged Charlie. "I had a message at Knight's Ferry, saying that your father had been hurt by dirt falling on him. Doubtless my mother has been there to-day and can tell you about it."

Poor May turned from one face to the other. She could see the pity with which they regarded her.

"Oh, what is it, what is it!" she cried. "Your words are kind and gentle, but your faces tell me that this is not the worst. My father, oh, my father!"

"God help you, poor child, for you must indeed bear the worst," said Gardener, pityingly.

May made no more outcry; the blood seemed stilled in her veins. At last Charlie spoke again: "So I hope you will come to my mother for to-night."

But she only shook her head and said, piteously, "Please do not ask me."

Soon they stopped abreast a small house, little more, indeed, than a cabin; but with roses and sweet jessamine growing over its porch in a loving, home-like way. At the door a group of men conversed in low, earnest tones.

"I will walk up by-and-by," said Charlie to Gardener, as he assisted May to alight. She followed him silently, making no moaning.

The men rose as they approached, and Charlie talked with them for a moment, in an undertone; then led her through the door.

In the stillness that followed, those rough miners heard her sobs and moans, and the quick tears sprang to many an eye. Not for the man who crushed and pale lay dead within. Such accidents were not infrequent. Many of them were exposed to the same danger, day by day, and they were in a manner hardened. But the sight of this young girl brought to mind thoughts of mother, wife, sister, sweetheart, and their hearts melted in sympathy.

We pass over the funeral; over the kindness and sympathy of strangers. May felt it all, and when Mrs. Haywood took her to her own home, and said, "Give yourself no thought for the future, my child, till you are rested," she realized that she had found friends. So a week passed; then she could be content with idleness no longer.

"Can you tell me how my father's business was left?" she asked Mr. Haywood one morning.

"I cannot," replied he, "but if you wish, I will ask his old partner, Rocky Canyon, to come up this afternoon and explain matters."

Afternoon found May alone, when her father's partner called; and as Mrs. Haywood and the girls were engaged, she answered the bell herself.

"I reckon you're Miss Weston?" he began, awkwardly enough, for Rocky Canyon was ill at ease among women.

"Yes. This is Mr. Canyon, is it not?" asked May simply, as she led the way to the family sitting-room.

"I reckon these yere books o' yer father's hain't no mo' need o' lawyerin' then I hev," began he, plunging at once into the subject, "though I 'low they'll hev ter tek a small dose enyhow. Th' ole man kep' 'em like clock work. Haywood'll tell yer what yer mus' do. I'll leave 'em with yer now. This yere las' claim," he continued like a boy who had learned his lesson, and was hurrying to get through, "we paid $1,200 apiece fur; we cleaned up $2,000 the fust month; las' June, that war. But arter that we los' vein, and it hain't no more'n paid expenses sence. But th' pay-streak's thar, somewhar, and I'll give yer the same fur th' ole man's shear, as he paid fur it, 'lowin' yer wants ter sell." And having thus delivered himself, he rose to leave, evidently much relieved.

"I thank you, Mr. Canyon, for your trouble," said May, rising, too; but he was gone before she could finish. Mrs. Haywood was still busy, and May did not speak of her visitor until they all drew around the pleasant tea table. Then she said: "Mr. Canyon came this afternoon, Mr. Haywood, and left papa's books. He said you would advise as to what I am to do."

"Whom did you say?" asked Charley, with a twinkle in his eye."

"Mr. Canyon," replied May.

"Did you call him Mr. Canyon?" he querried, while a smile went round.

"Why yes; I was alone when he called, and that is what you call him."

"We call him Rocky Canyon, because he was found well nigh dead, from a full into a gulch of that name, but I believe his real cognomen is Augustus Montgomery."

When Nathan Weston's books were examined, his accounts were, as Rocky Canyon had said, like clockwork. But there was one matter of which May Weston had not the slightest previous knowledge.

Before he sought California the first time, in '53, he had failed in a business venture in New Orleans, to the amount of $30,000. Little by little, for he had never been a lucky miner, during his whole life in the Golden State, he had aimed to pay his creditors. No year had passed without some reduction of the debt, until but little more than $6,000 remained unpaid. Ah, how this sum confronted May in all her plans. She had a small amount of money left, and Rocky Canyon had offered her $1,200 for the claim. Her purpose had been to earn her livelihood by teaching. If she sent the $1,200 to New Orleans there would still be $5,000 unpaid.

After all her father's years of patient toiling, could she leave this debt uncancelled? Surely not.

"I cannot hope to make more than $600 a year," she reasoned to herself, "and it will cost me $300 to live. It will take me over sixteen years at that rate." Then came a thought of the claim. Every one has faith in its worth, I will hold to that; she decided, and she did. But for herself, she depended on her teaching.

For some time matters moved slowly at the claim. The "pay-streak" kept persistently hid, and water being low in the upper reservoir, mining ceased. After a time word came that a full stream would be turned on, so Mrs. Haywood and May resolved to pay a long-talked-of visit to the claim.

There was a shaft of 30 ft., at the bottom of which quite a room had been drifted out, and in this they stood while Rocky Canyon explained.

"When we'd sunk thet thar shaft this fur, we reckoned we'd struck it rich agen. And so we did till thet thar bowlder stopped us. 'Pears like we're ter be shut off by 'em etarnally. We drift in away, on'y to be brought up by one o' them thar blasted stuns."

"Let me try this sport," cried May. She picked at the place awkwardly enough, but the dirt was gravelly and yielded at once. Rocky Canyon watched her at first with an amused look, then seriously.

"I'll be dog-hided ef she haint struck it," he shouted excitedly. "Thet thar gravel's got the right rattle." Taking the pick he struck vigorously, blow after blow, but no bowlder appeared.

"Let us go up again," suggested Mrs. Haywood, "and try it." One by one they entered the bucket and were drawn up. Then came a bucket of the dirt, and Rocky brought his mining pan. Carefully, and with a dextrous movement of his hands, he washed a panful.

As he finished, Mrs. Haywood leaned forward, interestedly.

"It's a fact," she said, "she has struck it, Rocky."

May looked eagerly. She had seen some wonderful specimens of the shining metal, and her hopes were raised. Now she saw a rusty pan, some muddy water, a quantity of black sand, and a few, yes quite a number of gold grains, but the largest not much more than a pin's head in size. May looked at her companions in surprise. Evidently, they were excited, and she wondered at what.

"As much as a dollar!" said Mrs. Haywood.

"I wouldn't teck seven bits for thet thar pan," observed Rocky Canyon.

"A dollar seven bits," repeated May; "that does not seem to me a large sum."

"I reckon yer dunno how many of them thar pans we ken wash in a day," replied Rocky Canyon. "Ef it don't peter out, we're made." And it didn't, at least not till Nate Weston's name was fully cleared.

There was but little left for May after that, if we can call it little, when a clear conscience, and youth and health are left.

Besides, she had her friendships, particularly the friendship of Charlie Haywood. That was what she called it. There came a day when Charlie taught her to call his friendship by a shorter, sweeter name, and May proved herself an apt scholar. Perhaps because Charlie did not rely on some text book. He believed in oral instruction.

So it was settled that there would be a wedding, and a trip to the Bay. Of the first, Rocky Canyon said, "I reckon it's natur for young uns to teck to young uns; but I'll be blowed ef I hain't ben dead stuck arter thet thar gal, ever sence she tuck thet thar pick as peart's a peacock, and struck thet thar gravel streak."

While of the latter, May said, "Charley, dear, let us go in the stage to Stockton. It will be delightful to take that trip once more; that is, if we may ride on the outside."

"There is no trouble about that now, my love" replied Charley. "I heard that when—— & Co. learned that a lady was made to ride inside one of their coaches, with eight of our Celestial friends, they removed the obnoxious rule. However, that may be, since then ladies of all ages and degrees of beauty, have occupied at times the seat beside the driver; yet there has been no accident, thanks to good iron."

Mrs. Garfield on Women's Duties.

The late number of the *Student*, a little paper published by the students of Hiram College, quotes an extract from a letter written by Mrs. Garfield to her husband over ten years ago, and intended for no eye but his. It fell into the hands of President Hinsdale, who made use of it in a lecture to the students, and, as it showed the qualities of Mrs. Garfield's mind and her opinions upon the subject of women's work, he gave it to the students. The extract is as follows: "I am glad to tell that out of all the toil and disappointment of the summer just ended, I have risen up to a victory: that silence of thought since you have been away has won for my spirit a triumph. I read something like this the other day—'There is no healthy thought without labor, and thought makes the labor happy.' Perhaps this is the way I have been able to climb up higher. It came to me one morning when I was making bread. I said to myself, 'Here I am, compelled by an inevitable necessity to make our bread this summer.' Why not consider it a pleasant occupation, and make it so by trying to see what perfect bread I can make? It seemed like an inspiration, and the whole of life grew brighter. The very sunshine seemed flowing down through my spirit into the white loaves, and now I believe my table is furnished with better bread than ever before; and this truth, old as creation, seems just now to have become fully mine—that I need not be the shrinking slave of toil, but its regal master, making whatever I do yield me its best fruits. You have been king of your work so long that maybe you will laugh at me for having lived so long without my crown, but I am too glad to have found it at all to be entirely disconcerted even by your merriment. Now, I wonder if right here does not lie the 'terrible wrong,' or at least some of it, of which the woman suffragists complain. The wrongly educated woman thinks her duties a disgrace, and frets under them or shirks them if she can. She sees man triumphantly pursuing his vocations, and thinks it is that kind of work he does which makes him grand and regnant; whereas it is not the kind of work at all, but the way in which and the spirit with which he does it."

THE POPULATION OF THE GLOBE.— According to MM. Behm and Wagner's *Bevolkerung der Erde*, Europe has now a population of 315,929,000 inhabitants, Asia 834,707,000, Africa 205,679,000, America 95,405,000, Australia and Polynesia 431,000, the Polar regions 82,000, giving a total of 1,455,923,000 being an increase of 16,778,000, according to the latest known censuses. At the end of 1877, Germany had a population of 43,943,000, Austria and Hungary (1879) of 38,000,000, France (1876) of 36,900,000. Turkey in Europe of 8,860,000, Russia of 87,900,000. In Asia, China possesses 434,900,000 inhabitants, Hong Kong 130,144, Japan 34,300,000, according to the census of 1878. The British possessions in India number 240,200,000 people (an estimate made before census of this year), the French possessions 280,000, Cochin China 1,600,000, the East Indian Islands 34,800,000, the islands of the South Sea 878,000. The area of Africa is estimated at 29,383,000 square kilometers, divided as follows:—Forests and cultivated land 6,300,000; savannahs, 6,235,000; steppes, 4,200,000; deserts, 10,600,000. The inhabitants of British North America number 3,800,000, of the United States 50,000,000, of Mexico 9,485,000, and of Brazil 11,100,000. The Polar regions extend round the Arctic Circle with an area of 3,859,000 square kilometers, and the Antarctic regions about 600,000. The population of the former is small, with the exception of Iceland, which has 72,000, and Greenland 10,000.—*Times.*

Young Folks' Column.

The Animals and the Telegraph.

A writer in *Youth and Pleasure* says: If you will kick or pound on a telegraph pole, or place your ear against one on a windy day, what will the noise remind you of? A hive of bees? Precisely. So it does the bears in Norway. Bears are passionately fond of honey, and when in one of the wild districts bruin hears the humming of the wires, he follows the sound to the posts where it is loudest, and begins to tear away the stones heaped round the poles in rocky places to steady them, in order to get at the hive, which he imagines to be there. In his disappointment and disgust he usually leaves savage marks of his claws in the wood. Nor is he the only victim of the wires. In the electric exhibition at Paris they show the top of a thick pine telegraph post, through which a woodpecker has drilled a hole several inches in diameter. The bird had apparently perched on the pole

New Year's Scene on Oakland Wharf.

and taken the humming of the wires for the buzzing of a nest of insects in the wood, and set himself manfully—or birdfully—to dig them out. Wolves will not stay in Norway where a telegraph line has been built. It was formerly the custom to protect farms by planting poles round them strung with cords, something like rabbit snares, and gradually the wolves came to respect these precautions, so that a line stretched across the neck of a peninsula would protect the whole district. The wolves take the telegraph for a new and improved snare, and promptly leave the country when a line is built. On our own treeless plains the buffalo hails the telegraph pole as ingenious contrivance for his own benefit. Like all cattle, he delights in scratching himself, and he goes through the performance so energetically that he knocks down the post. An early builder of telegraph undertook to protect the posts by inserting bradawls into the wood, but the thick-skinned buffalo found the brad-awl an improvement, as affording him a new sensation, and scratched down more poles than ever. In Sumatra the elephants are systematically opposed to telegraph lines, and at least 20 times a year make raids on them. In May, 1870, the elephants tore down the poles for a distance of several furlongs, and hid the wires and insulators in the cane jungle, and for three nights in succession they repeated the performance as regularly as the repairers built the line during the day. The monkeys and apes are about as formidable enemies, as they use the wires for swings and trapezes, and carry off the glass insulators as valuable prizes; then, when the repairer goes to correct the mischief, he may be pounced upon by a tiger or driven to the post by a mad buffalo. In Japan the special enemies of the telegraph are the spiders, which grow to an immense size, and avail themselves of the wires as excellent frameworks for their webs. So thick are the cords the Japanese spiders spin that often, especially when they are covered with dew, they serve to connect the wires with each other or the ground, and so to stop them from working. In the sea the wires are not any safer, as a small worm has developed itself since cables came into fashion which bores its way through iron wire and gutta-percha, lets in the water, and so destroys a line worth millions of dollars. When a great storm comes on in the center of the ocean, and the cable breaks while it is being laid or threatens to break, no one is alarmed. They fasten the cable to a buoy and come back afterwards and pick it up, or if it is at the bottom of the sea, they drop a dredge, with a mile or so of rope, and fish out the precious thread, as large as one of your fingers, almost as easily as you would fish up a penny from the bottom of a tub of water with the tongs. But the little worm no bigger than a needle is more formidable than the elephant on shore or the hurricane at sea.

Good Health.

HOW VOLTAIRE CURED THE DECAY OF HIS STOMACH.—In the "Memoirs of Count Segur" there is the following anecdote: "My mother, the Countess de Segur, being asked by Voltaire respecting her health, told him that the most painful feeling she had arose from the decay in her stomach, and the difficulty of finding any kind of aliment that it could bear. Voltaire, by way of consolation, assured her that he was once for nearly a year in the same state, and believed to be incurable, but that, nevertheless, a very simple remedy had restored him. It consisted in taking no other nourishment than yolks of eggs beaten up with the flour of potatoes and water." Though this circumstance concerned so extraordinary a person as Voltaire, it is astonishing how little it is known and how rarely the remedy has been practiced. Its efficacy, however, in cases of debility, cannot be questioned, and the following is the mode of preparing this valuable article of food as recommended by Sir John Sinclair: Beat up an egg in a bowl and then add six tablespoonfuls of cold water, mixing the whole well together; then add two tablespoonfuls of farina of potatoes; let it be mixed thoroughly with the liquid in the bowl; then pour in as much boiling water as will convert the whole into a jelly, and mix it well. It may be taken alone or with the addition of a little milk in case of stomachic debility or consumptive disorders.

PEOPLE sleep with their mouth open, and thus make this organ perform a duty which should be performed by the nose. There are many objections to this. The air in passing through the channels of the nose, for instance, is raised to the temperature of the body before it reaches the larnyx. Thus breathing, no matter how low the temperature may be, the sense of cold is never felt below the border of the soft palate. But when one breathes through the mouth on a cold day the sensation proceeds as far as the larnyx, and an irritating cough may be caused. Then, again, in nose breathing the air is moistened by the natural secretions which cover the turbinated bones in a condition of health, and the short, bristly hairs at the opening of the nostrils act as a filter to arrest impurities and reduce the likelihood of laryngial, bronchial or pulmonary disease. Infants, athletes, savages and animals breathe through the nose; the ordinary civilized man employs the mouth to an unnecessary, and often to a very injurious, extent.—*Journal of Health.*

NEAR-SIGHTEDNESS.—Persons living in cities begin to wear glasses earlier than country people, from the want of opportunities of looking at things at a distance. Those who wish to put far off the evil days of "spectacles" should accustom themselves to long views. The eye is always relieved and sees better if, after reading a while, we direct the sight to some far-distant object, even for a minute. Great travelers and hunters are seldom near-sighted. Sailors discern objects at a great distance with considerable distinctness, when a common eye sees nothing at all. One is reported to have such an acute sight, that he could tell when he was going to see an object. On one occasion, when the ship was in a sinking condition, and all were exceedingly anxious for a sight of land, he reported from the look-out that he could not exactly see the shore, but he could pretty near do it.—*Journal of Health.*

VACCINATION APPROVED.—It is singular that any well-informed person should entertain a doubt as to the efficacy of vaccination in the prevention of smallpox, yet there is considerable incredulity on the subject. The St. Louis Board of Health reflected for some time on this head, but finally decided in favor of vaccination. One firm basis for its belief, it is stated, was drawn from the fact that "not a death from smallpox has occurred in that city for five years, during which period vaccination has been more generally practiced than, perhaps, in any other large city in the country." Those communities which neglect vaccination, generally have a sad experience to convince them of their error.

TOBACCO AND COLOR BLINDNESS.—A Belgian physician has ascertained, during a tour of observation and inquiry made at the request of the government authorities, that the very general use of tobacco is the main cause of color blindness; and this affection is now occasioning no slight anxiety both in Belgium and Germany from its influence on railway accidents, and also from the military point of view. It is not surprising, therefore, that these facts have led to the issuing of orders in certain towns of Germany, forbidding all lads under 16 years of age from smoking in the streets.

PARAFFIN AS AN INSULATOR.—It is well known that paraffin is a good electrical insulator, but its being so soft has prevented its extensive use. Mr. W. J. Henley has so combined it with India rubber that the insulating power is increased without impairing the properties of the rubber.

Domestic Economy.

How to Prepare Sardines.

Sardines are found in great abundance, at certain seasons on this coast, and we believe a few have been put up in California oil, and have proven very superior. We see no reason why the preparation of sardines for the market might not be made a large and lucrative business here. At any rate perhaps some of our readers along the coast might like to experiment with sardines for their own use.

In view of these facts, it may be of interest to some to peruse the following, somewhat detailed, but, we believe, accurate description of the method of preparing sardines in France. The sardine being a very delicate fish, the utmost attention is directed towards having the fish as fresh as possible, and as near as can be to the factory where it is to be canned. Factories are, therefore, rarely situated more than two or three hours distance from the place where the fish are caught. The fish are placed on stone tables; women pluck off the heads, which operation removes the entrails. The fish are then placed on wooden slats and allowed to drip; are slightly salted, and remain over night. Next day they are again slightly salted, and allowed to dry. The old, and most approved, method of cooking sardines is to place them in vessels filled with hot oil, where they are cooked. When done, they are put into a wire basket to drip. At exactly the right point of cooking, the scales remain on the fish, which is desirable. If the cooking has been carried too far, or if the fish are too fat, the scales drop off, which impairs the value of the canned fish. A period of from five to six minutes is about the right time for the cooking in hot oil. The fish are then allowed to drip carefully, with the head part downward; when they have cooled, they are placed on tables and arranged by women in the well-known tin boxes in which they come to the market, the oil being dipped from barrels into the boxes. The oil being more valuable than the fish, efforts are made, without too much crowding, to put as many sardines in a box as possible. The lids of the boxes are then soldered, and the boxes are then heated in suitable receptacles by means of steam. The sooner this heating of the boxes takes place, the better. The temperature of the water in which the filled boxes are placed is at first cold, and the steam is gradually introduced. This second heating is sometimes carried on for an hour and a quarter. When the boxes are sufficiently heated, they are sometimes allowed to cool in the water, particular pains being taken always not to move the boxes too much. Another and cheaper method of preparing sardines is to cook them without oil in circular ovens. The after processes are the same. Sardines are most highly prized when not too large in size. Those of most approved size are worth six francs per thousand to the fishermen, while the larger ones only command about four francs. As sardines are migratory, a shoal of fish remaining at a fishing station for a week and then going off, the largest canners of sardines have sometimes two factories, situated at different localities on the coast. The fishing and canning season occupies about three months, from the middle of May to the middle of August. During the other months the sardine factories engage in the preparation of other food products.

COTTON SEED OIL IN COOKERY.—We have tested the refined cotton seed oil, as a substitute for hog's lard, and we pronounce it a complete success. On the morning of the election we ate as nice biscuits, in which the cotton seed oil was used, as we ever saw, and we here and now declare we take no more lard in ours. The oil is cleaner and cheaper than lard and has a better flavor. Housewives and cooks will understand what we mean by cheaper when we tell them that a gallon of oil can be bought for $1.00 and that one tablespoonful is enough to put in a pint of flour for making biscuit. For frying fish or steak the cotton seed oil is superior to anything we have ever seen used in this country. The discovery of the utility of the oil is destined to prove a bonanza to the South. The seed will in time become as valuable as the lint, and if we can only establish manufactories in our own section, which will work up the fleecy staple, the seed and even the fiber on the stalk, it will not be many years before the cotton growing section of this Union will become the richest and most prosperous portion of the continent.—*Chickasaw (Okolona) Messenger.*

SWEDISH RYE BREAD.—Set a sponge at night with warm water and rye flour, adding yeast, salt and a little sugar. In the morning work the risen sponge into a stiff dough, using wheat flour or Indian meal, or both, but no more rye. Mold into smooth loaves and lay them on a clean bread-cloth to rise, with a single fold of the cloth over them. When ready for the oven, wet each loaf with cold water, then take it from the cloth and place it in the oven—not in a pan, but on the bottom of the oven. According to Olga's theory, that is how rye bread is to be baked. Furthermore the baking must be slow and long, and when about two-thirds completed the loaves are treated to another cold water bath, which makes the thick crust just as it ought to be, both tough and tender, and results in very good and wholesome bread.

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TABLE OF CONTENTS.

GENERAL EDITORIALS. Inventors and Agriculture; Bishop's Head on the Maine Coast, 1. The Week; Timber Reservations; A Farewell to the Old Year, 8. Rainfall for 1880-1; San Luis Obispo Notes; Distributing Risks in Fire Insurance; What I Do With My "Rural Press;" The Grangers' Bank, 9½.

ILLUSTRATIONS.—View of Bishop's Head on the Coast of Maine, 1.

CORRESPONDENCE.—Mildew, Molds, etc., on Living Plants; Stockton Notes, 2.

THE APIARY.—Beekeeping, 2-3.

THE FIELD.—The Utilization of Small Springs; Bluestoning Seed Wheat, 3.

THE VINEYARD.—Varieties of Vines Cultivated in Portugal, 3.

PATRONS OF HUSBANDRY.—Meeting of National Grange—No. 6; Lodi Grange; At Haywards, 4.

AGRICULTURAL NOTES, from the various Counties of California, 4-5.

NEWS IN BRIEF on page 5 and other pages.

HOME CIRCLE.—The American Producer; Nate Weston's Debt, 6. Mrs. Garfield on Women's Duties; The Population of the Globe, 7.

YOUNG FOLKS' COLUMN.—The Animals and the Telegraph, 7.

GOOD HEALTH.—How Voltaire Cured the Decay of his Stomach; Near-Sightedness; Vaccination Approved; Tobacco and Color Blindness, 7.

DOMESTIC ECONOMY.—How to Prepare Sardines; Cotton Seed Oil in Cookery; Swedish Rye Bread, 7

ENTOMOLOGICAL.—Wooly Aphis in Tulare and Elsewhere, 8.

QUERIES AND REPLIES.—Choice Wheat; Fox Hounds Wanted, 8.

MISCELLANEOUS.—The Convention of Fruit Growers, Fruit Dealers and Nurserymen, 8¼, 8½, 8¾.

Business Announcements.

W. R. Strong & Co., Seed Merchants, Sacramento, Cal.
Fruit and Produce, M. T. Brewer & Co., Sacramento.
Pioneer Box Factory, Cooke & Son, Sacramento.
Howe & Hall, Commission Merchants, S. F.
Squirrel Exterminator, A. R. Booth, San Luis Obispo.
Insurance Agency, Hutchinson & Mann, S. F.
Merigot Pump and Spraying Nozzle.
Wheeler's Carbon Bisulphide, John H. Wheeler, S. F.
Ocean Steamers, Pacific Mail Steamship Co.
Insect Destroyer, N. Vizelich, Stockton, Cal.
Small Fruit Plants, C. M. Silva & Son, Newcastle, Cal.
Improved Horse Collar, J. T. Stoll, Sacramento, Cal.
Semi-Annual Statement, Grangers' Bank of California.
Knabe Pianos, A. L. Bancroft & Co., S. F.
Duroc, or Red Hogs, Hinckley & Getchell, Monterey, Cal.
Vick's Floral Guide, James Vick, Rochester, N. Y.
Grape Cuttings For Sale, E. Clarke, Niles, Cal.
Dividend Notice—German Savings and Loan Society.
Dividend Notice—San Francisco Savings Union.
Seeds, Bulbs and Plants, J. Lewis Childs, Queens, N. Y.
Russian White Oats, D. M. Ferry & Co., Detroit, Mich.
P. Werner, Instructor and Piano Teacher, S. F.
Plants, The Storrs & Harrison Co., Painesville, Ohio.
Mulberry Cuttings, Mrs. S. A. Sellers, Antioch, Cal.

The Week.

The days are an alternate drizzle and drip—a wonderful show of disposition, on the part of the elements, but not a very weighty accomplishment. And yet, it is ample for the needs of the region now covered by the clouds. Warm and wet—not a drop for drainage but milions for the young plants, the earth is gradually soaking full and the heart of the husbandman is more rejoiced than by the downpour of torrents. The rain is rather peculiar this year—and when was it otherwise in California? But when Sacramento gets about twice as much rain in a day as the bay region, which is usually the wash bowl of the State, there is certainly a great deal of eccentricity in the clouds. The south still wants her share, for the report up to noon of Wednesday shows only a column of cyphers for the stations from Visalia southward. There is anxiety and apprehension in the sunland, but there are consolations even if the rains should not come, which yet they may. There is an abundance of good things in the southern counties. There is much better use of water and much more area under well or ditch than ever before. And if the worst should come, Southern California will keep her courage without much whistling, and will gain strength while she rests for future advances.

There is now a world of work being done in tree digging and shipping and planting. Bundles of cuttings are fat and frequent. The host of horticulturists are beginning the New Year with heart and haste.

Timber Reservations.

Bills have been introduced in Congress setting aside as reservations for public parks certain groves of big trees (*Sequoia gigantea*) in this State, which in the main is a good thing. An old subscriber of the PRESS calls our attention, however, to the fact that there are two sides to the question of this reservation business. He has a somewhat different view from the general one, and it is well to consider both sides, and be sure of being right before going ahead.

One bill introduced is to create a reservation on a very large tract of *Sequoia*, in Tulare, where, our informant says, that although the trees are large, there are only two noted ones. These are the General Grant and Hugh Miller, and they stand in the body of a large tract of timber, though they are some seven or eight miles apart.

Very few stop to consider that by reserving this large tract considerable money is kept out of circulation. It contains upwards of 15,000 acres of timber, with perhaps 300,000,000 ft. of timber, of which probably 50,000,000 ft. are redwood, and a great part of the balance is pine. It is hard to tell where one kind of tree leaves off and the other begins.

The tract lies on the south side of King's river, and has been so far untouched, because it was impossible to haul out or get at in any ordinary way. It will require some $200,000 to utilize the tract, so that cutting and marketing would be of benefit to some persons, of course. Some capitalists had just made arrangements to utilize this tract, and were prepared to spend the above amount of money. The land, as it stands, is represented to be utterly worthless for any small operation, and can never be touched unless done cheaply on a large scale. Of course, as soon as the bill was introduced, the capitalists stopped work.

The gentleman to whom we refer, told us, in answer to a question, that the damage around Lake Tahoe had been exaggerated. Some of the logs have been cut off, but a very large proportion was still left around the shores. This was cut for timber, not wood. It is only since they have commenced to cut down trees for wood. He thinks about one acre out of every 5,000 has been cut off the shores of Lake Tahoe, no more. It would be more sensible to create a reservation around the lake than in Tulare county.

The Visalia *Delta* of last week has a vigorous article claiming that the movement for setting aside the reservation in that region is simply a movement of the railroad company to shut off the local timber supply and force importation of lumber from the north, for the carriage of which the company derives large revenue, and the consumers pay proportionately high rates. This is a point worthy of careful consideration, for it is beyond dispute that any movement which tends to lock up adjacent timber will have a direct and retarding effect upon the development of a country. The *Delta* shows that the big trees do not grow alone, but that they grow where sugar pine and yellow pine abound. Of the probable destruction of the few big trees it says:

> There is absolutely no remuneration in working the big trees into lumber, even at the prevailing enormous prices of lumber shipped from Oregon. They are too large to be cut by the largest saw-mill in existence. They could not be transported to the mill. However, there is one reason why they might be protected; they might, though it is highly improbable, be cut down and taken away as curiosities. In view of the signal financial failure that attended such an enterprise some years ago, no person can be found with sufficient hardihood to undertake such a fool's errand again. Admitting, however, that they might be cut for lumber or for curiosities, there remains the simple remedy of legislation looking to the protection of the big trees themselves, without involving with sweeping stupidity some 4,000,000,000 ft. of the finest pine and redwood lumber in the State.

It seems that aside from perpetuating the present high rates for lumber, the setting aside a reservation as proposed would make waste and idle, says the *Delta*, much of the finest grazing in the country. The bill would shut out some 22,500 head of sheep that annually are driven across this belt and that find sustenance in the timber, to say nothing of vast herds of hogs and cattle. How could this stock sustain life in the summer? By traveling some 30, 40 or 50 miles around one end or other of the reservation? And even then a strip of 30 miles wide would doubtless carry the western limit to the barren summit of the Sierra, where no stock could live. The injury that the material interests of the section would suffer from that source alone is incalculable.

It is to the timber, which it is now proposed to reserve, that Tulare county looked as its future lumber region, and so soon as facilities for transportation could be arranged, it hoped to enjoy cheap building material, such as many parts of the State now have. It is evident that those living near the proposed reservation, and who understand best the needs of the region, propose to be heard in their own interests before the matter can progress far in Congress.

QUERIES AND REPLIES.

Choice Wheat.

EDITORS PRESS:—I send you a sample of white Australian wheat grown out on the Linden road about 8 miles, on the Ortman estate, on land that has been sown to wheat or barley annually for the past 30 years. There never has been any manure applied, and the stubble has been burnt off always before plowing. It is very seldom you will see as fine a sample as this. What effect do you suppose a shipload of such grain would have on the Liverpool market if it was possible to get it over there without being mixed with all the trash in the country? I think the California Wheat Growers' Association, while doing other things, should take steps towards stopping this mixing our wheat before shipping, and by so doing lowering the standard of California wheat abroad. As the market now is, there is only about 5 cents between this sample and the nasty trashy stuff that is thrown on the market by some of our careless farmers. The way the wheat market is managed here now there is not much encouragement for the farmer to raise choice wheat, in fact, there is a premium on careless farming.—B., Stockton.

The sample sent by our correspondent is most beautiful, large, plump, uniform, and in every way handsome. It was cleaned in one of J. C. Bowden's for seed, and is a very creditable work for the cleaner as well as the grower.

Our correspondent is probably aware that the Wheat Growers' Association has already expressed itself strongly opposed to the grading and mixing of wheat, but it is hard to see what the growers' association can do unless they themselves become shippers, because the buyers find there is money in mixing, and after they have purchased grain, it is theirs to handle as they choose.

It is, however, a great wrong to the wheat grower, and to the general fame of the State as a wheat-growing country, that the best samples should be valued at a proportionate advance over the poor stuff, and that the best product of the State should not be known abroad.

We are assured by some of those manufacturing cleaning machinery that the disposition to clean wheat for the market, which was quite strong a year or two ago, is giving way, and many growers are declaring that they will not longer assume the trouble and cost of cleaning. One cleaner tells us of a lot of 900 sacks of wheat which he proposed to clean for the firm which had purchased it. It was very foul with seed of tar weed and other small seeds and sand. He offered to clean a few sacks first on trial, and got so much foul seed and dirt from the grain that there was a loss of 43 pounds on three sacks. The owners of the wheat told the cleaner to stop; they could sell it as it was for within 5 cents per cental of the price which the clean wheat would bring, and the extra weight of the trash would make it much more profitable to sell it foul than to have it cleaned.

This experience of a wheat buyer is just like that of many wheat growers. They find that the wheat buyer will offer them only a trifle more per cental for clean than for foul wheat, and they lose money by cleaning. Therefore, many of them declare they will clean no more hereafter. So long as they can get about as much per lb. for weed seed and ranch soil, they will not spend money and time raising a fine crop of wheat to tone up the bad stuff of other growers.

This is certainly a most important matter. It seems that it is useless to expect many reforms on the part of growers as long as buyers are in the habit of paying nearly the same rate for good and poor wheat. If there is a discriminating market and proper advance for a choice product, there will be strife to produce the best; but as it is, the grower meets not only discouragement, but in cleaning wheat for the market he actually loses money. The subject should be agitated, for the present condition of affairs is wrong.

Fox Hounds Wanted.

EDITORS PRESS:—Where can I obtain a pair of genuine fox hound pups, and at what price? M. KIRBY, Darrah, Mariposa Co., Cal.

ENTOMOLOGICAL.

Wooly Aphis in Tulare and Elsewhere.

EDITORS PRESS:—In your issue of Dec. 3d, under the head of "Apple Growing in California," it is stated that many infested nursery trees had been burned in Visalia. The objection I have to the article is, that the way it reads, it does a great injustice to the few nurseries in Tulare and Fresno counties; as the inference from the way the article reads would be, that our nurseries are a living mass of aphis. To the contrary, we are cleaner in our nurseries of aphis than any place I have seen in the State. In my own nursery there is but one row that has aphis, and the scions I used in grafting that row came from Los Angeles. This burning story must come from what happened here some years ago, when a nurseryman sent in several car loads of apple trees here to be put on the market. A large proportion of these trees were badly affected with aphis, and the party they were consigned to employed me to assist in unloading and hauling the trees in, preparatory to being sold. I saw the condition of them, and reported to the party employing me. He wrote below about them, and got instructions to overhaul them and burn those that were too bad. Part of them were destroyed and the remainder sold, and were distributed throughout the county, and from that lot we can trace the first aphis here. I have been over a greater portion of the State this fall, and here assert, without fear of contradiction, that our nurseries and orchards in Tulare and Fresno counties are freer of the insect pests than any other portion of the State, and we would stand some show to keep our orchards clean if the nurserymen throughout the State would burn their diseased stock, and not send it out to the interior of the State, directly or indirectly. What I mean by indirectly is this: Every season we have one or more Eastern tree peddlers through our country taking orders for some Eastern nursery, displaying nice lithographic plates of fruits to humbug the people, and taking orders at 50 higher rates than the same trees could be purchased from the home nurseries. When the time of delivery comes, you will see a few Eastern trees (specialties) and the remainder a lot of stunted, 2-year-old stock, lousy with aphis, scale bug, and no telling what else, raised in our own State (and, if necessary, I could tell where), and bought at a very low figure, as the nurseries that raised them would not dare put them on an order directly. These vampires never come around twice. Next season a new agent takes the route (headquarters, Oakland.)

Now, I will here give some advice to nurserymen, whether they take it or not: If you have diseased stock, do as we are accused of doing—burn it up—and don't send it out to spread disease through the entire orchards of the State, either directly or indirectly. More anon.

ISAAC H. THOMAS,
Of Thomas & Bros.' Nursery, Visalia, Cal.

A Farewell to the Old Year.

[Written for the RURAL PRESS by B.]

Good-bye, old year! Gently thou art breathing thy last sigh! The murmuring winds, the rustle of leaves, the balmy whispers of flowers, the dewy teardrops from Nature's eyes, all lovingly, sadly bid thee farewell. In thy deep sepulchre we bury the sorrows, the fears, the bitter memories, heart-burning resentments and cruel pride which rendered life a cankering care in the past year. Forgiving and forgetting, firmly we press the cover of oblivion on all that darkened the light of our souls in the past, looking hopefully to the new year just dawning, with new resolutions to press onward and upward in the path of duty. Again we say, good-bye, old year, and to all a happy, happy new year!

A Suggestion for New Year.

EDITORS PRESS:—There can be no more appropriate season for inaugurating reforms for the benefit of man than the beginning of a New Year. While there is almost a universal complaint from ranch owners, of the unfaithfulness and general inefficiency of help, recent observations have convinced me that there exists ample cause for general dissatisfaction among the hired men on most ranches. A more kindly feeling may be developed between the representatives of capital and labor, if the capitalist will only show a practical interest in the moral and intellectual welfare of the people employed on his place. In addition to neat, comfortable sleeping rooms for the men, every ranch should be provided with a reading-room for the exclusive benefit of the men, who could spend their Sabbath afternoons and leisure hours in reading and writing, instead of playing cards, etc. A little ingenuity on the part of the housekeeper, assisted by a carpenter, would soon convert some empty room about the place, and with but little expense, into an attractive, comfortable room. A few seats, tables covered with some bright goods, with a generous supply of books, papers, a few periodicals, a Bible or two, and some facilities for writing. Then the walls hung with a half dozen good chromos, a map of the United States and of the world. The discarded carpeting and matting stored away in old closets could be placed about the floor.

"One touch of nature makes the whole world kin." Interest the men on the ranch in the project for their own benefit, and how eagerly they will respond by fashioning book shelves, etc. Require all who avail themselves of the privileges of the reading-room, to make themselves tidy when entering there, refraining from the use of tobacco, profane language and card playing. Surrounded by such influences, the most ignorant and vicious will become better, both as citizens and laborers. The latter feeling that the wealthy owner of the ranch takes some interest in their welfare, will become more efficient and faithful. A better, more permanent class of labor will be induced to go on ranches as laborers, where there are pleasant arrangements for comfort and happiness. Thus, the respective relations of capital and labor would become more harmonious every way, while the man of wealth would have the satisfaction of feeling that he has engaged in the noble work of elevating his fellow men by contributing to their happiness, thus promoting their moral welfare, and preparing them for a life of usefulness here and hereafter.

Gabilan, Cal.

DOUBLE ORANGE.—The most perfect specimen of an orange within an orange we have ever seen was brought from the ranch of A. B. Chapman, San Gabriel. The skin had parted evenly at the blossom end of the fruit and disclosed the inclosed orange, about the size of a walnut, the skin being perfectly formed and colored. The specimen was given us by A. T. Hatch of Cordelia.

The Convention of Fruit Growers, Fruit Dealers and Nurserymen.

Official Report of Proceedings and Transactions.

(Continued from Page 430—RURAL PRESS, Dec 24, 1881.)

By unanimous consent Dr. Chapin's address was added to the record of the convention, with the request that the same be disposed of in a manner similar to other reports already produced.

Discussion.

A discussion on subjects reported on, now took place, taking up in regular order the borers, codlin moth, scale, etc.

Borers.

Mr. Wilson, from Newcastle, was called upon to introduce the subject of borers. Mr. Wilson stated that he had found potash to be a good remedy for borers, and said that trees kept in a healthy condition were not likely to be attacked by borers.

Further, he had effected a good purpose by driving nails into the trees; from this he was led to a trial of the following: Put scrap iron into a barrel, add vinegar or potash solution and spray it on the tree; the presence of iron salt seems objectionable or destructive of the borer. Beyond this the trees should be kept healthy and well cultivated, then like a well-cared for person they will better resist disease.

Dr. Chapin said that the healthy condition of the tree made no difference as to the attack of the black scale.

W. H. Jessup, of Alameda, confirmed Mr. Wilson's position, that healthy trees are not attacked by borers, and recommended "shaving off" with a draw-knife the wood infested, and the binding up of the wounded spot with sacks; wrapping the trunk without cutting away infested wood, had also proved successful.

Prof. Dwinelle said that he had not found the Eastern apple borers in this State; that the insect here was a smaller insect, but still very destructive. That the trees in a nursery were shaded, and when set separate were exposed to the heat of the sun, and the sap scalded, consequently exposed to the attack of insects. Trees can easily be sufficiently shaded the first year after setting, by a few cornstalks on the sunny side, tied at the fork; or a leafy piece of brush may be used.

Mr. Jessup said that wrapping with sacks protected the trees from being injured by cultivation—hitting by whiffle-trees. He also thinks the shading of the trees prevents the hatching of borers eggs.

Rev. Mr. Peck said he had used paper with the same results.

Mr. A. J. Wood, of San Joaquin, has been successful by washing trees with coal-oil and whale-oil soap (or even common soap).

G. W. Frazer, of Elmira, said he had discovered two kinds of borers, one a small one attacking only the pear and apple by encircling the tree beneath the bark, the other, a large yellowish worm with flat head, attacks plums and cherry. Mr. Frazer believes an unhealthy condition of the tree fosters the insect. Good cultivation, shade and water make the best wash.

Mr. Jessup thought the small borer the second year went for the heart of the tree.

W. C. Wilson, of Newcastle, said he had a good deal of trouble with borers, and concluded he had not used water enough. He had found cow manure and slickens wrapped around the tree to be a perfect remedy—and use more water.

G. W. Frazer has examined trees without any sign of borer externally, and found them abundant in the center of the tree.

Mr. Cooke said he thought the borers had been pretty well hunted down, and would suggest that those who had experience with the codlin moth should be heard.

Hon. Wm. Johnston said the object of this convention was to make the knowledge of the few the property of the convention, and urged those who had experience to relate it.

Codlin Moth.

Rev. Mr. Peck, of Newcastle, said he had been a Methodist preacher, but had some experience in horticulture; had endeavored to help make a living in this manner; had used different kinds of washes for borers; the common sheep wash was as good as any. The codlin moth had most ruined the orchards of Placer county; had used carbolic soap wash, made from soap bought of the Standard soap company, applying as a spray.

A. Vizelich, of Stockton, said he had a large number of kinds of trees. Had noticed lots of insects crawling up his trees. Saved all his ashes and made lye, and put some sulphur in it, and washed his trees with the mixture. The same thing will kill insects on cabbages, rose bushes, etc.

Mr. Jessup said there were some of the codlin moth in Haywards, Alameda county. A neighbor of his said there were none in his orchard, but he had found 17 under one loose piece of bark on one tree.

Felix Gillet, of Nevada, finds three forms of insect in the codlin moth to fight, moth, larva and grub—of these, the perfect insect is the one against which to levy our warfare. Premiums should be offered for the discovery of its parasites. A plan which I have found successful has been the setting of a pan of sour milk in the branches of the tree, into which the moth will fly at night and be destroyed. Concerning the driving of nails into the tree to keep off borers, my experience is that this remedy succeeds in just so far as you succeed in driving the tack into the head of the borer. Prof. Dwinelle said that, acting on Mr. Gillet's suggestions, he had opened correspondence with a gentleman in France, in hope of securing some insect enemy of the codlin moth which does not yet exist in California.

Mr. Jessup said he had accidentally found a good trap for the larvæ of the codlin moth—cut straw thrown around the roots of the tree. The moth go into the little tubes of the straw; then gather up the straw and burn it and the worms.

John McMullen, of Suisun, had had an orchard from the early days of the State, and had no trouble till the codlin moth came in his orchard. He knew of no better way than to wrap the trees and examine them every day. He wanted some one to tell where the moth lies in the winter, and where it came from in spring. As far as the use of ashes was concerned, he had even found the larva of the codlin moth taking up its winter quarters in an ash heap, and had known the same to come forth in spring unharmed.

Mr. Haley, of Placer, said he had been fighting the moth several years, and had the same trouble. Where did they go in winter? Had finally commenced digging up apple trees, and found the larvæ around the roots. Thought the idea of Mr. Jessup, to throw cut straw around the trees, a good one. If they found a warm place in the straw, they would not go into the ground for the roots. As an experience, he had further flooded the roots occupied by the worms in winter for eight days at a time. This had no effect whatever. We must catch the insect before winter, or else destroy them under ground.

Mr. Hatch suggested the use of bisulphide of carbon to destroy the hybernating insect.

J. H. Wheeler explained that the sulphide of carbon proved successful against the eggs of the phylloxera hybernating on the roots of the grapevine, and prepared for the inclemency of the winter; and it seemed, reasoning from analogy, that it might be used with equal effect against the codlin moth.

Dr. Chapin said care should be had not to make a nest for field mice with straw.

Mr. Jessup replied that not enough straw should be used to make mice nests, and that the straw could be removed and burned before the winter was far enough advanced to drive the mice to it.

Robert Williamson suggested the keeping of hogs for destroying fallen fruit, and along with it the codlin moth.

Mr. Williamson wanted to say a word about the borer. Had tried cow manure, etc., but the best remedy he had found was to thoroughly shade the body of the tree by its own top, if possible. The great necessity is to shade and keep in a good growing condition. The hot sun contracts the bark and makes the tree unhealthy and invites the borers. Trees must be grown low; this resists the borer, facilitates the picking, they will not blow over, etc. During the winter, solutions must be applied to destroy the moth.

Mr. Hatch stated that hogs could not be depended upon, as the larva leaves the fruit before it falls from the tree.

Prof. Dwinelle remarked that the codlin moth should be fought at all seasons, and by all means found efficient. Bands should be placed about the trunks of the trees, and bunches of rags or sacking in the forks, to entrap the larva in summer. Straw may be useful at the foot of the tree. Clods should be pulverized. The bark should be scraped and washed in winter. Perhaps the insect could be prevented from hiding in the soil about the crown by a layer of clay or cement, such as is used against the peach borer in the Eastern States. Experiments should be made to destroy the pest in such places with carbon bisulphide, and cheap solutions, as well as niter, gas lime, etc., spread on the soil. Above all things, use clean boxes for fruit, either free packages or disinfected ones, so that the supply of insects may not be renewed from the outside.

Committees Appointed.

The appointment of committees by the President was as follows:

Fruit Growers—A. S. White, E. R. Thurber, John McMullen, R. B. Blowers, W. Robinson, G. M. Gray, Mr. Barker, P. D. Brown, H. Wilson.

Eastern Shippers—J. F. Farnsworth, E. T. Earle, P. H. Platt.

Shippers to Points West of Omaha—W. R. Strong, Samuel Guerson, Eugene Gregory, E. T. Adams, D. Bernardi, W. J. Wilson.

Commission Merchants—J. M. Hixson, S. F.; Robert Hall, S. F; Mr. Littlefield, S. F.

Nurserymen—Robert Williamson, Sacramento; S. McKinlay, Los Angeles; Felix Gillet, Nevada; Mr. Silva, Placer.

Ways and Means—M. T. Brewer, A. T. Hatch, Rev. W. R. Peck, George McMullen, W. H. Jessup.

All committees were instructed to submit reports on Wednesday forenoon.

The Convention here adjourned to re-assemble at 10 A. M. on the following day.

Evening Meeting

The members of the Convention, by invitation, met at the business house of M. T. Brewer & Co., to witness an exhibition of insects injurious to fruit and fruit trees. Many citizens were also present. The exhibition was gotten up by Mr. Cooke, and consisted of specimens of all the most destructive insects to the horticultural interests that have made their appearance in the State. The specimens were shown under magnifying glasses and in different stages of existence and positions, so as to exemplify in a good degree their habits and natural history. On the whole the exhibition was a very interesting and useful one, and seemed to be highly appreciated by all present. The occasion was also made one of social intercourse among the fruit growers and their friends, the conversation generally turning upon the fruit industries of the State.

Second Day—Dec. 7.

The Horticultural Convention met at 10 A. M. Minutes of the preceding session were read and approved. A. S. White, Chairman of the Fruit Growers' Committee, submitted the following

Report of the Fruit Growers' Committee.

The committee appointed by the Fruit Growers' Convention would recommend the following report:

WHEREAS, The fruit growing interests of this State which are of so vast importance, are threatened with destruction by insect pests, of various kinds, and

WHEREAS, Any individual action is totally inadequate to meet the enemy successfully.

1st—*Resolved*, That the fruit growers and farmers of the State be requested to give their earnest support to the horticultural laws, and give their united efforts to sustain the Chief Health Officer in the execution of the same.

2d.—*Resolved*, That the fruit growers in every county where commissioners have not already been appointed shall demand of the Supervisors that they appoint commissioners according to the requirements of the law.

3d.—*Resolved*, That we recommend that the orchardists of the State shall purchase only such trees, plants or cuttings as are known to be free from infectious diseases, and are accompanied by a clean bill of health from the commissioner or inspectors.

4th.—*Resolved*, That all nurserymen shall be required to disinfect all trees and plants to the satisfaction of the commissioners or inspectors before delivering them to their customers.

5th.—*Resolved*, That we recommend to each and every farmer and fruit grower, as good citizens of the State, to use all practical means to keep his trees free from all insect pests, that his orchards may not become breeding grounds to the damage of his neighbors.

6th.—*Resolved*, That we request the transportation companies not to return fruit boxes or baskets between the 25th of June and the 31st of December.

7th.—*Resolved*, That we recommend that the study of entomology be introduced into our public schools, so that the rising generation may be wiser than their fathers.

Discussion.

Mr. Cooke would alter the section on return packages. It is too broad. If the producers would give up the return box for one year, he felt sure the benefit of such a course would be evident to all. Disinfection was suggested. Mr. Wilson, of Placer, said that disinfection would be too expensive if done by the commission merchants.

A. T. Hatch agreed to disinfection, but at the producer's station.

Senator Wm. Johnston left the chair to move that the section concerning return packages be stricken out, as it would work a hardship on producers. Let a man be employed in San Francisco by producers, to whom boxes shall be sent to be disinfected, and a small fee paid. Dr. Chapin believed that free packages should be used, to be sold with the fruit. Return packages are certain to become infested with germs of disease, and decay, mold, etc., as well as insects, so that fruit will not keep as long as in new boxes. Fruit in new boxes is so much more salable, that the commission merchants would probably share the cost of a free package with the producer.

Mr. Halen, of Folsom, thought Dr. Chapin right in the main, but his proposition cannot be carried out. Canners make so small a profit and handle so much fruit that new boxes cannot be afforded each year. J. H. Elliott, of Newcastle, said commission merchants say they sell our fruit at 8% commission, but they give us what they can buy it for in the market, less the 8%.

P. H. Murphy favored return boxes.

Prof. Dwinelle believed the return packages as at present used, to be a curse upon the horticultural interests of the State. Not at present being a producer, he could not advocate any special measure, but earnestly urged careful search for some better system. He believed that cheaper and better free packages could be made than were yet generally known. Some months ago he suggested in the RURAL PRESS that the waste steam of San Francisco might be utilized for disinfecting packages. Possibly, carbon bisulphide might be used.

Report of San Francisco Commission Merchants.

The committee of San Francisco commission merchants reported as follows:

Mr. President and Members:—The undersigned commission merchants of the city of San Francisco, appointed by this convention to report such advice as we deem proper for the improvement in quality of orchard produce, respectfully submit the following: In order to meet the requirements of the trade, a choice fruit is an imperative requirement, and we are perfectly satisfied that any work done in an intelligent manner will well repay the producer and have a marked effect on the advance of sales and net proceeds, as it costs the same freight and drayage on inferior fruit shipped that it does on first quality. We earnestly recommend to the fruit growers to use every effort to improve the produce of the orchard; and in every respect we will use our endeavors to assist in your work. We wish it to be understood that we cannot in any way be held responsible for any cost that may be attached to the shipment of fruit to us in violation of the quarantine rules and regulations and other laws for the protection of horticulture.—J. M. Hixson, S. Littlefield, Robt. Hall.

The report was adopted.

Report of Committees on Nurseries.

The following was submitted and adopted:

Your Committee on Nurseries begs leave to report that, whereas sundry kinds of insects injurious to fruits and fruit trees, vines, plants, etc., are infesting the orchards and gardens of this State, and whereas, these insects are spreading very rapidly, and if not checked, bid fair to ruin the great horticultural interests of our country; and whereas, the nurserymen and tree dealers who disseminate trees and plants all over the country, are necessarily in position to scatter these pests far and wide; or, on the other hand, to aid materially in checking the spreading of them; therefore, we, your committee, recommend and urge all nurserymen and others disseminating trees and plants, to *thoroughly* disinfect all trees and plants of every description before sending them out or offering them for sale.—Robt. Williamson, Felix Gillett, S. McKinlay, C. M. Silva.

The report was adopted.

Report on Fruit Packages.

To the Board of State Horticultural Commissioners:—Your committee appointed at a convention of fruit growers, held at Sacramento, Dec. 5th–8th, on the subject of "disinfecting of fruit packages" and "a cheap free package" report jointly as follows:

To make a perfect system one of two plans must be adopted. Either that of providing at each station or landing whence fruit is shipped, an apparatus for the purpose of fumigating or disinfecting, or a general location in the principal cities where the packages can be treated in large quantities before reshipping to the grower.

Under the first plan the cost of apparatus in so many places would result in such a tax on the shipper as to be altogether too expensive to be generally adopted, except under compulsion, while at the same time it does not prevent the spreading of the pest during the journey to the proposed point of treatment. Under the second plan the obtaining of sufficient room in cities to handle the immense number of packages accumulating daily, together with the extra cartage and the elaborate system of accounts necessary to be kept between the commission merchant and the manager of the disinfecting establishment would make it, while perhaps more efficient, quite as expensive. It is estimated that under either plan an average charge of 1½ cents per package will be necessary to cover the cost, every time it is disinfected.

So far as the process of disinfection to be observed your committee after investigating the various plans proposed and submitted, submit the following as the most economical while equally sure, that each package be placed in a close tank and exposed to the action of live steam at a minimum temperature of 200° F. for a minimum period of 5 minutes.

Your committee is clearly and unanimously of opinion that a free package system is preferable to any system of disinfecting that can be adopted—numbering among its advantages:

First—The saving on freight to market on account of the lesser weight of the free package of ½ cent each, on an average.

Second—The saving of cartage on return package for which the commission merchant is willing to make an allowance of 1 cent each.

Third—The greater price that can be realized for fruit by the commission merchant from the actual consumer on account of its being in clean, new packages, and the fact that canneries are willing to pay an additional price if they do not have to nail up and reship empties, both of whom have agreed that an increased price can be realized of 2½ cents on a 25-lb., and 5 cents on a 50 lb. package.

Fourth—The saving of the cost of free disinfecting, which we before stated to be 1½ cents each.

Fifth—We have figured closely that with the advantages already claimed, and the low prices at which free packages can be procured, say, on the standard fruits that are marketed in boxes, about 50% of the cost of the present return package, and for chests about 25%, the fruit grower will find, after a full trial of the free package system for a term of years, that he has been at no actual additional expense, and that he has by its adoption reached the only successful method, outside of the orchard, of ridding it of pests.

We find an ordinary free package of 25 to 30 lbs. weight of peaches, plums or apricots can be furnished for about 6c; one holding 40 lbs., for Eastern shipping, 9c; one holding 60 lbs., regular apple size, 11c; berry crates, with trays or baskets, holding 40 lbs. strawberries, or 40 lbs. raspberries, or 50 lbs. blackberries, or 60 lbs. currants, or 60 lbs. cherries, for 25c.

As an illustration of the actual saving, by using the free package in place of a return package, we submit the following estimate of saving on a 25 lb. box:

Allowance by commission merchant for drayage	1 c
Cost of disinfecting	1½c
Freight to market	½c
Increased value from consumer or canner	2½c
Loss in transit and wear and tear	2½c
Total	8 c

R. B. BLOWERS,
WM. H. JESSUP,
A. T. HATCH,
A. D. CUTLER.

M. Cooke said he was placed in a delicate position in relation to return boxes, being a box-maker. He referred to the rules of quarantine, in which the boxes are required to be disinfected in San Francisco at the expense of the grower. He instanced the practice of the late Mr. Saul, of the Oak Shade orchards. He would not allow a box to be returned to his orchard. The result was that he kept his orchard clean, and sold last year 9 500 boxes of pears. Others who allow return boxes have their orchards infested and their crops destroyed. He

instanced the Grand Island orchards, from which a few years ago were shipped 4,000 boxes. Last year the fruit on the whole island sold for $500, and this year they couldn't get anything for it, in consequence of the introduction of worms.

Mr. Wilson, of Newcastle, said if the boxes are not returned the commission merchants make the price of the boxes, and they should pay the producer for them.

Mr. Hixon, a commission merchant, said that the boxes from Oregon are all free or not returned. If the matter was understood that all boxes were to be free, then the commission merchant would make nothing on the boxes, and would charge nothing for them. Fruit in free boxes was preferred by retailers and consumers, because the boxes were not required to be returned or paid for.

Mr. Frazer, of Elmira, said we are all here with one object—to get rid of the insect pest, and we must stick to this subject. The worms lay their eggs in all boxes, free as well as return, and they, too, go to all parts of the State and spread the worm as well as the return boxes. It would be a hardship on those who raise fruit not infested by worms.

A. T. Hatch moved to amend by the adoption of a thorough system of disinfection. Seconded.

R. Williamson was in favor of the amendment. It would work a great hardship on that class of fruit growers who produced fruit, as peaches, cherries, plums, etc., to require them to send free boxes. The point he wished to get at is, to have the convention recommend a thorough system of disinfection.

Prof. Dwinelle said that any radical change in doing business appeared difficult to make at first sight, but with careful investigation, many obstacles would be cleared away. Statements in regard to cost of boxes had been made, which were altogether too high as regards free boxes, which need not be nearly so strong and heavy as return packages. Most purchasers would allow a part, if not all, of the cost of the package to be added to the price of the fruit rather than to be troubled with returning it when empty. Mr. Crane, of San Lorenzo, when sending fruit to Sacramento, specified that the boxes should not be returned, as he feared the codlin moth. He was paid for the boxes. Some one present had shown a difference of six cents in the cost of a return box, as compared with a free box. The late Mr. Kerchival found that on the average there were six apple worms, larvæ of the codlin moth, in the crevices of each of his return boxes and peach baskets. That gave one for a cent. Cheap enough! But as Mr. Kerchival did not want them at any price, he scalded the packages in a weak solution of potash. An apple box holding 48 lbs. is made of redwood, at Wright's station, in the Santa Cruz mountains, for 6¼ cents each in the shook. Grape boxes are made for 4 cents each. These boxes are used by all orchardists and grape growers in that region, no boxes being returned.

After two years' experience, no one wishes to change back to the return package. A conference should be had with the transportation companies to see if lower freights could not be secured if no return boxes were used. Save a cent or a fraction of one wherever possible, and soon the margin in favor of a return package is cut down so low as to be more than balanced by the greater security in using the free package. If anyone doubts that insects are spread by return packages, let him take apart an old apple box from an infested district and split open the nail holes and cracks. Let no one think that because he has no apple or pear trees he is not interested in this question. What prune raiser can say that his next return box will not bring the plum weevil, the dreaded curculio into his orchard?

Lately a vineyard supposed to be healthy, was found to be infested by the phylloxera about the spot where the return boxes are piled up and no where else. It is now a serious question whether the owner of the vineyard can stamp out the pest, or the phylloxera will stamp out the vineyard. A committee should be appointed to report on possible savings in the construction and handling of free packages, and also on the cost of disinfection. The speaker would contribute $10 towards a prize to be awarded for the best cheap apple box, or for the best on free packages, if enough could be raised to attract the attention of inventors and mechanics.

M. T. Brewer said that if apple and pear boxes were made free a great deal would be accomplished. Peach baskets are too expensive to renew every time used. They should be disinfected at the producer's station.

Mr. Murphy thought that the point of disinfection should be at the farm.

The amendment of Mr. Hatch, substituting disinfection for prohibition of return packages was carried, and the report as amended adopted.

Remarks by the Chairman, C. H. Dwinelle.

Before closing, it may be well to glance at what has been accomplished by this convention. It is safe to say that more genuine horticulturists have been here than ever before assembled from the length and breadth of California, for the purpose of discussing matters involving their best interests. There has been a profitable comparison of views between fruit growers and those with whom they have business relations. The extent and magnitude of the existing evils from insect pests have been set forth in a way that should convince every one of the need of immediate measures for checking their spread, and, if possible, securing their destruction.

Not the dismal side alone has been presented to your view. Those who have met our insect enemies, and inflicted more or less complete defeat upon them, have been with us or sent us letters.

Dr. Chapin has maintained a model orchard of deciduous trees in health, in the midst of a region where scale insects abound. Ellwood Cooper has vanquished the black scale on his olive trees. William Jessup and others have found the weak points of borers. John Cox, if he had not been too retiring, could have told you, as he did me, that he had saved all but 1% of his Bartlett pears from the codlin moth, where his neighbors lost most of theirs.

Other valuable points have been brought out in regard to pests and their suppression, the cultivation and pruning of trees, the packing, preservation, shipment and sale of their fruit.

We certainly have a right to go home encouraged to new efforts for the development of horticultural industries and looking forward with pleasure to a profitable meeting next year. Let each one, then, come with his year's experience in readiness to be poured out for the good of others.

Discussion on Mildew.

Dec. 7th. Previous to the regular session, an informal meeting was held for the discussion of points in orchard management, Prof. Dwinelle presiding.

The subject of "White Mildew on Fruit Trees" was introduced.

F. Gillet reported the trial of powdered sulphur as a remedy in Nevada county, but without apparent results.

W. B. West had similar experience at Stockton. He found phenyle the best remedy as a spray. The carbolic sheep wash, or anything else containing carbolic acid, was good. For roses, the English Gizhurst's compound was his favorite, but it is too expensive for trees.

The chairman remarked that what was good for the rose ought to benefit its close relatives, the apple, peach, etc. Mildew is a kind of fungus growth propagated by minute spores. The white mildew of the vine is easily kept in check by sulphur. Perhaps this remedy failed on trees because applied too late, when the mildew was well started. Mr. W. W. Smith, of Vacaville, has reported good results from cutting off the ends of twigs as soon as they show mildew. In that hot climate they dry up at once.

Dr. S. F. Chapin, of San Jose, said that he had similar experience in the treatment of apples. He noticed that the Jonathan apple was more susceptible to mildew than most others. J. Fuller, of Saratoga, on higher land, said that the Jonathan was a thrifty tree there, not showing mildew, although peaches do. W. B. West noted that the Alexander peach is not very susceptible to mildew, while the Red May is so.

F. Gillet, spoke of the red spots on grape leaves, which have been so common in our vineyards of late. The disease has also appeared in Europe, where it is called the "American mildew," but is different from the white mildew.

Matthew Cooke being called upon, said that the codlin moth wash, when used by John Cox in his orchard, had kept the pears free from the brown spots, sometimes called "scab," "mildew," etc. Similar results had been observed at Oak Shade. The disease is also produced by a fungus. The good result from the wash is to be attributed to the sulphur carried in suspension, and fastened on the bark by the soap. The air in an orchard treated with it is, on a hot day, suggestive of sulphur springs.

Discussion on Pruning.

Dr. Chapin was called upon to give his experience with pruning, and stated that he preferred the saw and pruning shears to the knife, as more convenient; and all wounds made in pruning should be covered with wax, or other material, to keep the air from the wood. The cut should be made close to the bud and above it, and the wound will readily heal over during the season's growth, and not leave a projection of dead wood. All trees should be pruned while young, so as to keep them in form and render the cutting away of large limbs unnecessary. The saw used should be of a narrow blade, like a butcher's saw, and not the ordinary pruning saw. The saw blade, too, should be so adjusted as to be turned by the handle in the frame. Men should not be instructed to cut a tree simply to produce beautifully rounded symmetry, but inside branches and improper growth should be trimmed out. Summer pruning should be recommended by pinching back the tender ends when the shoots have obtained about the required length, and pinching the second or even the third time, as may be necessary, as will be the case in some instances. Further, the fruit should be thinned out—too numerous fruit causes loss by the seeds. The seed of the fruit remains about the same for small fruit as for large, and a tree overloaded suffers a heavy drain from this source. The peach and apricot should be pruned out. With regard to cherry trees, they should be pinched back when green.

Robert Williamson said that he was decidedly in favor of the low training of trees, so that they might protect their stems from the sun and be less liable to blow over; also recommended covering all wounds with grafting wax or paint; favored fall pruning to develop fruit buds, and did not favor pinching back terminal buds during summer, but would cut off; gave illustration of benefits of low training by stating that the best cherries he had ever eaten were picked within six inches of the ground, and that a first-class cherry-grower said he could pick six times as many cherries if within six ft. of the ground as he could if twenty ft. from the ground; had picked peaches from low trees and got more than from high-trained ones.

W. H. Jessup said that Mr. Williamson had struck the key-note of the subject in recommending low training, and to use saw or knife in preference to shears. After the saw should follow the knife, and the rough scar pared down smooth and clean. He prunes mainly in summer. Cherry trees are pruned as soon as the fruit is off.

Mr. Frazer stated that it was an undeniable fact that low pruning must be resorted to as adaptable to California fruit growing. Dr. Chapin and Mr. Hatch concurred.

Communication from Canners.

To the Convention of Fruit Growers at Sacramento, Cal.:—The undersigned manufacturers of hermetically sealed goods recommend to the fruit growers who ship their peaches to the San Francisco market the abolition of baskets, and the substitution of closed boxes of uniform size, holding 25 lbs. each, thereby preventing much of the stealing and mashing of fruit which now causes a large percentage of loss to both shipper and purchaser. Signed: Cutting Packing Co., by A. D. Cutter, Sol. Wangenheim & Co., J. M. Spafford & Co., Code, Elfelt & Co., A. Lusk & Co., King, Morse & Co., J. Lusk Canning Co., Schammel, Reynolds & Co., M. Banner & Co.

San Francisco, Dec. 5, 1881.

Report on Fruit Shipping to Eastern States.

To the State Convention of Horticulturists:—Your committee appointed on fruit shipments to the Eastern States would beg to report as follows:

We have given the subject as careful examination as time would permit, and we find that the amount of green fruit shipped to the Eastern States is of great importance to the fruit growers of our State. Over 400 carloads of green fruit has been shipped east of the Missouri river during this year. We find that several important matters stand in the way of Eastern shipments of fruit; one being the high rate of freight charged per car, and another the codlin moth pest. Both of these ought to be overcome. The first demands, and should receive, careful consideration at the hands of the railroad companies, and the other can be remedied by a vigorous and persistent effort on the part of the fruit growers. Fruit that is at all infected by codlin moth becomes almost worthless before it reaches the Eastern States. We would say that we deem it of the utmost importance to growers to do all in their power to make it of profit to the fruit shippers to still further extend their already large field of outlet for California's fruit productions.

Some have said in words that nothing can be done to exterminate the pests; others have spoken still louder by their acts and their failure to fight the destroyer, thus injuring themselves and their neighbors. However, enough has been done to prove beyond a peradventure, that systematic work will save the orchards and vineyards of our State, and cause them to continue to be the fruitful source of income to their owners that they have been in the past. We will not here individualize, but we will say that many fruit growers have, by their persistent efforts, saved their crops in a marketable condition, when, if they had not used precautionary measures, their fruit crops would have been failures. But freight rates and the codlin moth are not the only obstacles that meet the Eastern fruit shipper—the state of the weather while on the way, and the condition of the market when his fruit reaches its destination giving him, if possible, even more concern.

The contents of a car is often spoiled by the heat in transit, and both fruit and freight money become a total loss. Again, it has often occurred that fruit that cost $1.50 per box on the track in Sacramento, is sold at 25 cents or 50 cents per box in Chicago, owing to a glutted market or the heated condition of the fruit on arrival.

These last obstacles are unavoidable, but the others can and should be remedied.

In conclusion, we here express our earnest hope that all growers will co-operate and, by united and systematic effort, completely eradicate our fair land of the pests that are gnawing at and sapping the foundations of all hopes of prosperity to fruit raisers: J. F. Farnsworth, Edwin T. Earl, P. E. Platt, Committee.

The report was adopted.

Report on "Fruit Shipping West of Omaha."

The field belonging to this committee covers a great but sparsely populated territory, embracing eastern California, Nevada, Idaho, Montana, Utah, Wyoming, Colorado and Nebraska. This territory has a great variety of climates and soil, and is generally of high altitude, with frosts during a large portion of the year, and generally deprived of rains and moisture for long periods; and with no facilities for propagating fruit or fruit trees, the supplies in the future, as heretofore, will be required from this State.

As the resources of this growing outlet for California fruits are constantly increasing, it is but fair to presume that the population will increase in proportion and the demand for fruit will be greater in consequence. To meet the requirements of this trade, it will necessitate the production of the best quality of every description of orchard products, the cultivation of the best varieties, and the careful picking, packing and handling of the same. We would, therefore, suggest:

First—The varieties to be cultivated: The choicest and most desirable for flavor, size, color, beauty of form. Our instructions from consumers are to "ship nothing but choice fruit," with the invariable advice that the cost of transportation is fully as much on the poor fruit as on the good.

Second—Fruit required for this trade should be carefully picked just before reaching maturity—that is, when it is hard and firm in every part. Even a day's delay in picking will so hasten the softening of fruit as to render it unfit for shippers' use. Fruit gathered before being fully developed is of no value to the dealer or consumer—never ripening, but becoming shriveled, tough and tasteless; yet, if gathered and packed when ripe, it will soften and decay before it can be marketed. Great care should be exercised, and more attention given to these points than heretofore.

Third—In packing, the greatest care should be used. Fruit of uniform state of ripeness should only be put in the same box, and should be as uniformly sized as possible, placed carefully in layers, packed solid and full. Inferior or bruised or overripe fruit placed with hard and choice, ruins and renders the whole unfit for trade, and very often ruins the reputation of the dealer, while it at once points out the carelessness of the grower.

Fourth—Honest, intelligent and careful fruit growers cannot fail to be well paid for their labors, while on the other hand, the slovenly and dishonest must certainly suffer the reverse. "Be sure your sins will find you out," may be well applied in this, as in all other careless or dishonest dealings.

Fifth—We recommend uniformity in style and dimensions of boxes for use by fruit packers and growers. For apples, 50-lb. boxes, Sacramento style and dimensions; pears, 40-lb. boxes, as used for Eastern trade; plums, 20 lbs.; peaches and apricots, 20 to 30 lbs.; depth from 4½ to 7 inches, according to size of the fruit. For cherries and small fruits, the San Francisco boxes that are used in chests—10 lbs. each.

Sixth—We recommend the adoption of the "free box" system, as they can be made lighter than return boxes, and furnished at little more than half their cost. The fruit is then sold by the box, and will command a higher price, as the free package presents a new, smooth and bright appearance, which goes far towards the sale of the contents. The return box has been the cause of much of the dissemination of the codlin moth and worm, and of other insect life which has brought ruin to our orchardists throughout all parts of the State.

Seventh—Every grower should place his initials on all the boxes leaving his premises, and should be scrupulous to mark the name of the variety of fruit, and its size and quality, the state of ripeness—hard, medium or soft—on the end thereof. The adoption of this system will be at once a great benefit to dealers, a convenience to growers, and a certain help towards repressing much unnecessary profanity among dealers that are obliged to burst open boxes in order to ascertain their contents.

We believe that the fruit production of California is but yet in its infancy. Twenty-five years ago scarcely anything in the way of fruit was raised in this State. At that time one of your committee purchased the first peaches produced in Smith's gardens (near this city) for $1.50 each, selling them readily for $2 apiece. Apples were first imported from South America in 1851, and sold from 50 to 75 cents per pound. After this, Oregon fruit orchards came into being and partially supplied the wants of California. From 1855, attention was turned to the capabilities of the soil and climate of this State, and the river bottoms and desirable lands near the coast, and afterward the foot-hill regions, and even higher altitudes, were set out to a considerable extent with fruit trees. The almost universal success in production has demonstrated that California can yet be made one of the greatest fruit countries in the world—equaling in quality, size and beauty that of any other portion of the earth.

We believe that the terrible pests of the moth, worm, scale and other insect life that has developed itself, can be entirely eradicated from our State if the efforts now being made under the laws passed by our last Legislature are heartily sustained by all, and the combined intelligence and experience acquired on this subject be put into force.

The territory assigned to this committee embraces but a small portion of the population which has to be supplied from the produce of the California orchards; San Francisco, with its 300,000 population, and other portions of the State with equal or greater population, has to be supplied through dealers; the large and constantly increasing outlet for carload shipments to the great cities and dense populations east of the Mississippi river, and the immense and rapidly growing demand for California canned, dessicated and dried fruits in Europe and elsewhere, putting to test the capabilities of the immense canning establishments already in successful operation, and leading to the establishment of others—point unerringly to the great future extended to the cultivators of fruit in this State and affords much encouragement to dealers.

In conclusion, we urge upon all engaged in the growth, packing and sale of fruit, that the most studious care and good judgment should be exercised, and strict and unswerving justice and honesty of purpose in every transaction should be observed. No business has suffered more by a neglect of these self-evident facts. The grower has often shown himself more anxious to palm off his products with reckless disregard of the interests of the dealer and con-

sumer, and without a thought of his future reputation. Such men only ruin business, and certainly do not deserve success. They should be discarded as unworthy of countenance.

All of which is respectfully submitted:

W. R. Strong,
Eugene Gregory,
Samuel Gerson,
C. T. Adams,
D. De Bernardi,
W. J. Wilson, } Com.

Sacramento, Dec. 7, 1881.

The report was adopted.

"The Use of Carbon Bisulphide and Sulpho-Carbonate of Potassium as Insecticides."

The extensive use of carbon bisulphide for destroying phylloxera in France and other countries, and the marked success accomplished by it as a remedy, led Prof. Hilgard, of the State University, to propound to the fruit growers of California, over a year ago, the question: "Why may not this, operating as a vapor, be confined by proper appliances and made to serve the purpose on trees which it does confined in the soil on vines?" Pursuant to his belief in its efficacy for this purpose, a number of experiments were made by fruit growers, who had become quite as sanguine as himself. All of these resulted unfavorably, for reasons which will be seen further on. A few remarks on the chemical and physical properties of this material will render intelligible what is to follow.

Carbon bisulphide (symbol CS_2) is a heavy liquid of oily appearance and volatile at ordinary temperature. A small quantity exposed to free air evaporates almost immediately, forming a toxical vapor which is three times heavier than air; this vapor is so heavy, indeed, that it may be readily poured from one vessel into another, from this into a second, from the second into a third, and from the third into a fourth before it becomes at all dissipated; in the fourth we have it sufficiently strong to burn, which it will do like coal gas. In a good light it may be readily seen. We therefore possess in its vapor something bearing a close analogy to a liquid, and operating, in many respects, entirely different from ordinary vapors.

The carbon bisulphide, in liquid or vapor form, has the power of readily dissolving oils, wax, paraffine, India rubber, etc., and cannot be contained in vessels composed of or sealed with any of these materials. Many materials, which are, however, soluble in water, like glue, glycerine, mucilage, resist its attacks perfectly. Animal tissue is a good material to oppose its dissolving propensities with. On the evaporation of liquid carbon bisulphide intense cold is produced, so intense, indeed, that it is often used for making ice. Now, as any liquid depends on its inherent heat or that of surrounding bodies, so the carbon-bisulphide, when its own temperature and that of surrounding bodies is bound to the freezing point, ceases to give off vapor. A vessel, for instance, placed within an inclosed space in which the atmosphere in immediate contact with the liquid becomes soon saturated, nearly ceases to give off its vapor.

With these qualities in view, we may now proceed to consider the failure which first signalized the use of carbon-bisulphide for disinfecting trees.

One man makes a balloon of oil-cloth, another of rubber, another smears his canvas with wax; the sulphide is applied. All fail. Why? Because these materials, readily soluble in the vapor, are penetrated easily by it, and its power in saturated atmosphere is dissipated and lost.

Another makes a balloon or tent to drop over the tree, expecting the ground to answer as a bottom to the inclosed space; he therefore drops a curtain to the ground from the bottom of his tent, and on the superfluous cloth which drapes on the ground, he heaps ordinary earth, packing by treading or other convenient means. This he believes to render the inclosed space gas or vapor-tight. Remembering that he must have a saturated atmosphere to accomplish the destruction of the insects; and, granting even that his tent be made of impenetrable material, he relies implicitly on the results, after placing within the tent, by some means or other, the necessary bisulphide.

Let us ask this experimenter if he would think of filling the tent, prepared as above, with water? No, on the contrary, the hydrostatic pressure of the water rising would force it down and out around the bottom. So with the heavy vapor of bisulphide, rising to 3, 4 or 5 ft. within the tent, the weight of the column becomes sufficient to prevent the saturated atmosphere from reaching any considerable hight in the foliage. Still another prepares his tent for the work of disinfecting, and, in introducing the liquid bisulphide, places it in a vessel at the foot of the tree, and, in timing the experiment, reckons on the saturated atmosphere within five minutes after introducing the liquid. As has been already seen, the vapor, in forming, lowers the temperature of the liquid to its freezing point in this confined space; the column of vapor formed weighs upon it and retards evaporation. Here, therefore, the error becomes immediately apparent, and we are not now surprised that after eight hours' subjection to such a vapor as is to be found at the top of the tree, the insect continues alive and active.

All of these errors coinciding, it is scarcely to be wondered at that this remedy fell into disrepute.

Through correspondence and conference I became informed of the above named failures and also of the mistakes to which they were attributable, and as soon as time permitted, believing firmly in the efficacy of the material, I determined to contrive an apparatus which should overcome the mistakes of my predecessors. With this conviction I left San Francisco (in answer to a kind invitation from Mr. S. P. Stowe to visit him at Santa Barbara) last August, clothed with the necessary contrivances for destroying the scale with carbon bisulphide.

My tent was of canvass coated with perfectly tight and resistant impenetrable material. The body of the balloon was fashioned with hoops like a cylindrical Chinese lantern, which could be lowered from a derrick and on completion of the treatment, might, by tackle, be drawn up or closed up like a Chinese lantern. From the lower hoop hung a curtain, gathered at the bottom by means of strings, which could be drawn up about the trunk of the tree and wound tight by the strings. The hoops which held the canvas off from the tree was so made that by means of a thumb-screw they could be made large or small, the tent following of course; by this means economy could be effected in treating trees of small horizontal diameter. Again, by the raising or lowering of the lower hoop the tent would fit trees tall or short. By means of the above adjustments and the formation of the top of the tent which was conical, there need be no waste space within and no consequent waste of material. This tent when put up would hold water to the very top.

To supply the sulphide of carbon and to produce a saturated atmosphere as quickly as possible, I devised a series of three cotton disks suspended one above the other. On to the top one (the whole being suspended in the apex of the cone at the top of the balloon or tent) was poured the liquid bisulphide, which, evaporating in part, run through onto the second and then to the third in such a manner that it all turned to vapor immediately, and, flowing down into the tent would fill up the bottom first and then rise to the top in a manner analogous to the filling of a vessel with water. Concerning the time required to put this balloon over a tree and inject the necessary bisulphide it was found to take five minutes.

The insect to be experimented upon in Mr. Stowe's orchard was principally the cottony cushion scale or *Icerya purchasi*, which gave his orange orchard, in parts, the appearance produced by a snow storm passing over it, so thick were they on the foliage.

The experiments made comprised many a dose of one-half lb. of carbon bisulphide, continuing 15 minutes, destroyed nearly all of the insects—as many, and more than any other remedy which had ever been applied; and close observation any time within 24 hours following the experiment, failed to reveal any signs of life. After this time a few were seen to be yet living, or coming into life. The experiment, although encouraging on the whole, was by no means sufficient. I could be satisfied at this point with nothing less than the complete extermination of the parasite. Other periods of time were accordingly tried, and larger quantities of bisulphide were used. One experiment even reached two and three quarter hours duration with one-half lb. of the bisulphide. Unable to determine its effects within the three days spent at Mr. Stowe's, I left instructions for the proper continuance of the work, and came to San Francisco. Here, after one month, I received a letter from Mr. Stowe, in which he stated that the experiments had been perfectly successful for all times tried above one hour.

On my request for particulars concerning the work after my departure, I received the following letter, which I crave Mr. Stowe's indulgence for publishing to this convention. Before giving it, I will state that one experiment was made on the black scale or *Lecanium oleæ*, the results of which Mr. Stowe refers to in his letter.

J. H. Wheeler, Esq.—*Dear Sir:* The experiments which were tried after your left were as follows: One lb, 1 hour; ¾ lb, 1½ hours; ½ lb, 2 hours. These experiments killed the insects completely, as far as we could discover. I think the success was due in great measure to the tent having been freshly coated with the material. I am hardly prepared to say what would be most economical on a large scale, but should think a pretty heavy dose for one hour would be most convenient. I am preparing a large tent and will then order bisulphide from you.

Yours truly, S. P. Stowe.

P. S.—The tree operated upon for black scale is now entirely free from the same (Lassen tells me). I was not able to find it yesterday, but I know it commenced improving immediately. S.

Santa Barbara, November 1, 1881.

In these results we have all that could be hoped for as regards its toxical effect. That it can be used successfully in destroying the cottony cushion scale and the black scale, there is no doubt. For each other scale, its effect must be determined in detail similarly to the foregoing; but, as to these two varieties of parasites the destruction is complete. For insects other than scale—viz., those like lice, red spider, etc.—it is evident that, owing to their more extensive and actively working breathing apparatus, a much less quantity for a shorter time will answer the purpose. To make further experiments in this line, Mr. Shorb of Los Angeles has kindly offered to have work conducted under his personal supervision in an attempt to destroy the red scale as well as the black scale. Mr. Seward Cole of Los Angeles will also be supplied with a tent by me to conduct experiments on the black scale infesting his orchard. With the kind assistance of Mr. Cooke and Dr. Chapin, experiments will soon be made on the San Jose scale, and so on.

The question now arises, What is the cost of this treatment?

For trees 10 to 14 ft. high and 4 to 6 ft. in diameter, the cost, including labor, cost of tent for 1,000 trees, bisulphide to be used and incidentals will not exceed 15 cents per tree. For large trees the cost multiplies rapidly, in proportion to the space occupied by the tree. In comparing the cost with that of treating by means of a wash, it is to be remembered that the complete extermination accomplished by a single treatment with carbon bisulphide is equivalent, if not more, to the three or four treatments necessary when a wash is used. We find therefore, that, even if the treatment with carbon bisulphide were necessary to repeat each year (of which I think there is little probability) it would then surpass in economy the treatment by means of washing.

The advantages possessed by the above described process, over other remedies for the redemption of our orchards become immediately apparent.

The work of applying is as follows:

Picture to yourself a man, woman, or child, backing up a two-wheeled cart (weighing not more than 200 lbs.—tent, cart and all), on which is erected a derrick. The tree coming between the wheels the tent is lowered by string or rope, the bottom drawn up about the trunk. One stroke of the piston of a small force pump on the cart injects the necessary quantity of bisulphide after passing through a pipe which follows over the arm of the derrick. By using a little brush broom, and caustic solution or even water alone the trunk of the tree is freed from the insects and a cordon of tar, lime or similar material put about its foot to prevent others crawling up. This is the work of five minutes. For the hour or hour and a half during which the vapor is actively accomplishing its work of destruction, the laborer may be engaged with other balloons or in pruning, hoeing weeds, etc. Disrobing, the tree is found in virgin condition.

On the other hand, I might refer you to the man who sprays with a solution almost as obnoxious to the person applying it as to the insects intended to destroy. View the elaborate apparatus for transporting, heating, mixing and pumping the liquid to be applied. Then, too, he is performing a labor which must inevitably be repeated a number of times during the season, for it is utterly impossible to destroy every vestige of the insect with one application.

The cracks, crevices, under parts of some, and upper parts of other leaves and branches, are necessarily left with germs of the disease continuing. Again, a wash may be applied which will destroy one species and leave surviving another.

With carbon bisulphide vapor, on the other hand, we have one of the most penetrating of vapors known. The best champagne cork will not prevent it emanating from the mouth of the bottle containing it. No crack or crevice, no leaf, limb or knot hole can escape the completeness of its work, and in destroying one species it destroys all. Its work is complete.

Each remedy added to our list assists in fortifying us against insect enemies, and this, I believe to be one to assist. Very large trees and deciduous trees generally must rely to a large extent upon the application of washes; and I do not think that in this sphere the sulphide of carbon will supplant them. In nurseries, however, young orchards and orchards of citrus trees, in fact of all trees not deciduous, the sulphide of carbon seems destined to play an all important part.

Disinfecting Fruit with Carbon Bisulphide Vapor.

I desire, further, to call attention to the fact that carbon bisulphide vapor may be used as a means of saving infected fruit. No article to which the bisulphide vapor has been applied will preserve any trace of the odor or vapor after 15 minutes exposure in the open air. Fruit will stand the vapor for a considerable time without any injury. Never would it have any injurious effect on the consumer; but how long it would retain its fresh appearance remains to be experimented upon; though there is but little doubt that it would perfectly retain its appearance for any length of time necessary to destroy any insect infecting it. I mention this merely to signalize the experiments which I shall make at an early date in the future.

Sulphocarbonate of Potassium.

I will further ask the indulgence of this Convention to the extent of a few remarks on the sulphocarbonate of potassium.

Symbol K_2CS_3. It is made from carbon bisulphide and sulphide of potassium, both powerful insecticides. It is, practically speaking, the rendering soluble of carbon bisulphide in such a manner that it may be diluted with water, and instead of having its vapor pass off quickly, it is allowed to escape the combination only as decomposition of the material progresses. Sulphocarbonate of potassium is the best known remedy for phylloxera. It is not used so extensively as carbon bisulphide because of the cost of applying it. For instance, to saturate the soil to a depth of three inches in summer requires one inch of the solution over the surface; one inch of water over one acre of ground represents in weight 113 tons. You may readily see why, to saturate to a depth of six feet, a liquid becomes inadequate except for small spots. In spite of those objections France has treated during the last year 2,500 acres of vineyard with it.

Until the present month not a pound of this material has been produced in the United States. In answer to a demand for the sulphocarbonate for use against the phylloxera, I have begun its manufacture on this coast. In experiments on the toxical effect of its solution, I have found the following to be its effect on the phylloxera:

One part to 200 destroys the phylloxera and its eggs in 15 minutes.

One part to 200,000 destroys it in 24 hours.

To prove these experiments, which were made by immersing infested roots in the solution; other infected roots were placed in pure water and even caustic solutions, and on these the insects continued to live—showing that the destruction was due entirely to the decomposition product, and not to the potash which results. Its insecticidal effects are thus seen to be very great, and it occurred to me that, as solutions are applicable economically to trees, this might prove of advantage among other washes.

The liquid, as prepared for use, is of a deep red color, gives an alkaline reaction and colors very perceptibly half a million parts of water. I have destroyed readily many kinds of insects by a weak solution of it, and, at the same time, find it does no injury to the most tender plants when applied in the proportion of 1 to 25 parts water. Its application is not as unpleasant to the workmen as is that of strong caustic solutions. Above all, its decomposition is what commends it most highly, being so purely economical. Weak acids, like carbonic acid gas, will decompose the sulpho-carbonate of potassium with the evolution of sulphuretted hydrogen and sulphuret of carbon gas, according to the following reactions:

$$K_2CS_3 + H_2O + CO_3 = K_2CO_3 + H_2S + CS_2.$$

Now note how beautifully this works out. All animal life, including insects, give off in ordinary respiration, carbonic acid gas. This gas coming in contact with the wash applied, decomposes it, and the gas returned kills the insect. Its own respiration, therefore, accomplishes its destruction.

The decomposition of the liquid may be effected also by boiling the solution, it then reacts thus: $K_2CS_3 + 3H_2O = 3H_2S + K_2CO_3$. The same change takes place if allowed to remain in the open air and exposed for several days.

In both of these cases, the only remnant of the wash after a few days, besides the poisonous gases given off, is ordinary carbonate of potassium, known under the names of potash, pearlash, which are superior to concentrated lye, inasmuch as the latter consists of the carbonate of sodium, an element injurious to plant life and soil. This residue of potash serves to keep off other insects, stimulates the bark as do all washes and soaps containing potash, and, on the advent of the first rains, is washed down into the soil to act as a fertilizer to the plant. There is nothing about it to effect the trees as does coal oil in closing the spores by its involatile residue; but, as I have said, the potash serves to stimulate the tree.

With the belief that the more remedies we have in our possession, the better we are off, I think this may well be added to our list of insecticides possessing certain economic advantages over some others, at least.

As to the cost of sulpho-carbonate of potassium, it can be furnished in quantities at a rate which will place it within the category of cheap insecticides. During the ensuing year, extensive experiments will be made. Dr. Chapin has already offered aid, and I respectfully ask the aid of other fruit growers in determining its application to insects peculiar to the different districts.

Let it be particularly understood, that in the sulphide of carbon and sulpho-carbonates, we are not dealing with new inventions; they are both established insecticides, only needing determination of their adaptability to the different orders of insects troubling California.

In view of this last fact, I hope I may be pardoned for consuming so much of the valuable time of this convention.

(TO BE CONTINUED.)

Engraving by Electricity.—M. Plante has succeeded in engraving on glass by means of electricity. The process is as follows: The glass is laid in a horizontal position, and covered with a concentrated solution of nitrate of potash, the liquid being retained by a shallow vessel in which the glass is placed. A platinum wire is dipped in a horizontal position in the solution along the edges of the glass. The wire is attached to one of the poles of a secondary battery of 50 or 60 elements. The lines are traced by hand with the point of an insulated platinum wire connected with the other pole of the battery. The parts of the glass covered with the alkaline solution become engraved when touched with the end of the platinum wire, however rapidly this is moved, the thickness of the lines varying with the thickness of the wire. The current from either pole may be used in the writing wire.

Solid Petroleum.—According to a St. Petersburg paper, a German, Herr P. N. Dittmar, has practically solved the problem of rendering petroleum solid—a problem considerably studied by chemists of late, in view of the large question of transport. A company has been formed in Russia to work the patent when completed. The mode of treatment is not yet disclosed, and chemists to whom small samples of the solid petroleum have been sent have not been able to make out the nature of the foreign substances that are added in a proportion of 2, or at most 3%., to solidify the petroleum.

Dr. Glenn, at Jacinto, has 35,000 acres in wheat, and expects to sow 25,000 more. He has a force at work on the levee building from Bounds' to Sheppard sloughs, a distance of five miles. This force at present is 48 teams and scrapers and over 50 men.

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NOTICE—There are delinquent upon the following described stock on account of an assessment levied on the Twenty-first (21st) day of November, 1881, the several amounts set opposite the names of the respective shareholders, as follows:

Name.	Number of Certificate.	Number of Shares.	Amount
Adams, D Q	467	4	$10 00
Allen, James	1461	2	5 00
Allen, H M	1220	25	100 00
Ashley, Geo W	1429	3	7 50
Bagge, Emily C	172	1	2 50
Bagge, Christian	167	1	2 50
Baldwin, John M	231	10	25 00
Bennett, Albert	671	4	10 00
Bouton, A	1187	2	5 00
Bollinger, A J	812	4	10 00
Bosworth, C M	1029	2	5 00
Bosworth, Mrs C M	1027	3	7 50
Barnes, Nathan	919	8	20 00
Buford, S H	622	2	5 00
Brake, G W	610	1	2 50
Carpenter, J H	873	5	12 50
Carroll, M	633	4	10 00
Castro, Juan B	435	8	20 00
Castro, Juan B	1593	2	5 00
Cleck, Mrs Sarah D	1621	4	10 00
Clark, Jas A	611	8	20 00
Clark, Jas A	277	2	5 00
Clark, Annetta	595	1	2 50
Clark, Annetta	276	1	2 50
Coburn, A P	771	1	2 50
Colby, G W	1283	40	100 00
Cooper, J T	146	1	2 50
Corcoran, Jas	362	1	2 50
Coulter, Rachael M	1082	4	10 00
Cox, William W	1374	2	5 00
Cox, Mrs M E	1376	1	2 50
Cox, E J	507	5	12 50
Cook, Mary E	4	5	12 50
Coulter, S T	1639	5	12 50
Campbell, S A	1679	10	25 00
Elliott, J M	1131	1	2 50
Emert, M F	475	5	17 50
Flournoy, W S	456	4	10 00
Frazer, Thomas	1680	10	25 00
Frazer, G W	270	2	5 00
Frazer, G W	1681	6	15 00
Frazer, Mrs A E	612	1	2 50
Frost, T G	271	1	2 50
Frances, Joseph	356	2	5 00
Frances, Joseph H	357	2	5 00
Fulton, James	693	5	12 50
Gamble, Mary C	579	20	50 00
Gates, T M	602	1	2 50
Gartleman, Daniel	994	2	5 00
Gartleman, Daniel	1001	2	5 00
Gaston, Hugh	663	4	10 00
Gibbs, W H	103	10	25 00
Gibbs, W H	1209	5	12 50
Gibbs, Mrs W H	103	1	2 50
Gilchrist, J B	364	4	10 00
Glenn, D C	273	1	2 50
Glenn, Mrs Mary E	594	1	2 50
Gladden, W N	1191	4	10 00
Gyte, Joseph	139	1	2 50
Hasset, E Aaron	1501	10	25 00
Heald, J G	998	4	10 00
Heald, J G	1066	2	5 00
Heald, J G	1664	1	2 50
Heald, Rachael	1064	1	2 50
Heald, D G	1128	4	10 00
Heald, Mrs E	1129	4	10 00
Hersby, Ella L	476	10	25 00
Hersby, Ella L	1709	2	5 00
Hersby, D N	1396	10	25 00
Hersby, D N	1708	2	5 00
Hutson, J L	1475	5	12 50
Johnston, T M	661	2	5 00
Johnson, L B	238	5	12 50
Lindner, Lucinda	839	2	5 00
Lindner, John D	847	10	25 00
Long, Peter	22	5	12 50
Lyman, Charles	498	10	25 00
Martin, S M	79	2	5 00
Martin, S M	483	2	5 00
Marshall, A S	645	5	12 50
Marshall, A S	1615	5	12 50
Marsh, James	1348	5	12 50
McMullin, F A	327	2	5 00
Meyer, Waldemar	583	10	25 00
Meyer, Waldemar	1635	10	25 00
Meese, William	1158	2	5 00
Miller, Rudolph	1393	2	5 00
Miller, Rudolph	1625	18	45 00
Moore, Samuel L	1146	2	5 00
Morris, J R	1176	20	50 00
Morris, J R	1609	1	2 50
Morris, J R	1687	5	12 50
Morris, Maggie C	1177	20	50 00
Moch, J L	666	5	12 50
Oliver, Wm H	804	1	2 50
Perdue, Mrs Mary	590	1	2 50
Perez, F	1211	2	5 00
Pittman, Carrie	580	2	5 00
Pittman, Mrs C J	581	3	7 50
Pilkington, Thomas	897	2	5 00
Pilkington, Thomas	358	2	5 00
Proctor, Geo W	1635	12	30 00
Proctor, Geo W	1713	8	20 00
Prince, N J	642	10	25 00
Prince, N J	577	5	12 50
Putnam, T C	667	5	12 50
Rauschamp, Geo	282	2	15 00
Rector, W H	1085	2	20 00
Sawyer, Jackson	91	2	5 00
Sayward, J W	129	2	5 00
Seett, P H	7	1	2 50
Scott, P H	1676	1	2 50
Smith, W A	251	10	25 00
Smittle, J W	626	10	25 00
Sollars, S W	502	1	2 50
Stoddard, O L	719	2	5 00
Taber, G R	189	2	5 00
Tierney, Edward	94	2	5 00
Troxell, J R	1589	6	15 00
Troxell, J R	1679	1	2 50
Turner, W H	1503	25	62 50
Unger, Frederick	1241	4	10 00
Vanderbilt, Wm	867	5	12 50
Vanderbilt, Wm	638	10	25 00
Valpey, Mrs Elizabeth	1728	2	5 00
Weymouth, Almon	1448	5	12 50
Weymouth, Harris	1166	3	7 50
Wynn, Jess	883	1	2 50
Whitcomb, C S	1642	14	35 00
Wilsey, Amasa	201	2	5 00
Wilsey, Amasa	485	8	20 00
Wilhout, Jessie	436	4	10 00
Wilkinson, J	1216	2	5 00
Wilkinson, Mrs E J	1217	2	5 00
Wood, George	1154	1	2 50
Yeiser, Daniel	182	10	25 00
Young, A J	1153	1	2 50

And in accordance with law and an order of the Board of Directors, made on the 21st day of November, 1881, so many shares of each parcel of such stock as may be necessary will be sold at public auction at the office of the company, No. 38 California St., San Francisco, Cal., on Monday, the 17th day of January, A. D., 1882, to pay the delinquent assessment thereon, together with costs of advertising and expenses of sale.

AMOS ADAMS, Secretary
Of Grangers' Business Association of California. Office, No. 38 California St., San Francisco.

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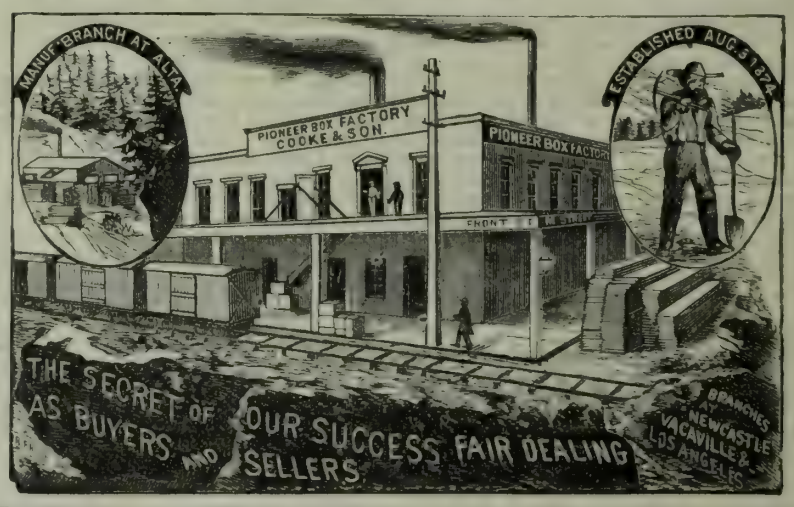

Rainfall for 1880-81.

The following are the amounts of rain for the twelve months ending June 30, 1881, at the various stations of the C. P. R. R., and its branches, which make returns to Chief Engineer, S. S. Montague. The stations from San Francisco to Truckee, inclusive, are on the main line of the Central Pacific in California; those from Boca to Tecoma in Nevada, and those from Terrace to Ogden in Utah, are all on the same line; those from Marysville to Redding are on the Oregon branch of the Central Pacific; those from Modesto to Kingsburg, on the Visalia division of the Central Pacific; those from Martinez to Willows, on the Northern railway; those of Antioch to Byron, on the San Pablo and Tulare; those from South Vallejo to Knight's Landing, on the California Pacific and its branches; those from San Mateo to Santa Cruz, on the northern division of the Southern Pacific; those from Lemoore to Mammoth Tank, on the Southern Pacific in California; those from Yuma to Pantano, on the Southern Pacific in Arizona; that of Ione, on the Amador branch of the Central Pacific; that of Farmington, on the Stockton and Copperopolis; that of Anaheim, on the Los Angeles and San Diego; and that of Petaluma, on the San Francisco and Northern Pacific:

Station.	Rain. Inches.	Station.	Rain. Inches.
San Francisco	29.89	Kingsburg	9.49
Oakland	20.79	Martinez	19 66
Niles	20 00	Dunnigan	19.65
Pleasanton	19.57	Williams	15.00
Livermore	16.45	Willows	13.67
Tracy	10.68	Antioch	17.39
Lathrop	13.34	Brentwood	12.49
Stockton	15.31	Byron	16.05
Galt	15 93	South Vallejo	21.98
Brighton	13 63	Napa	28.19
Sacramento	22 14	Calistoga	40.48
Rocklin	21.32	Suisun	24 52
Auburn	37.42	Davis	18 55
Colfax	48.14	Woodland	18 54
Alta	50.97	Knight's Landing	17.96
Emigrant Gap	62.26	San Mateo	21.09
Cisco	82 71	Menlo Park	18.36
Summit	66.39	San Jose	12.46
Truckee	21.97	Tennant's	24.81
Boca	15 80	Gilroy	23.42
Reno	5.74	Hollister	12.48
Wadsworth	4 23	Pajaro	19.91
Hot Springs	2.95	Salinas	12.48
Brown's	3 38	Soledad	6 78
Humboldt	5.52	Monterey	13 91
Winnemucca	10.18	Santa Cruz	29.64
Golconda	4.92	Lemoore	8 59
Battle Mountain	6.07	Visalia	10.65
Beowawe	6 26	Goshen	9.69
Palisade	10.61	Tulare	9 98
Carlin	10.35	Pelano	6 75
Elko	5.35	Sumner	3 59
Halleck	4.64	Caliente	9.80
Wells	3 97	Keene	11.12
Otego	5.35	Tehachipi	8.16
Toano	2.34	Mohave	1.27
Tecoma	2.62	Ravena	5.40
Terrace	4 21	Newhall	9.15
Kelton	5.03	San Fernando	9.45
Promontory	2 93	Los Angeles	10 00
Blue Creek	12.01	Spadra	10.22
Corinne	14.57	Colton	6.08
Ogden	11 55	Whitewater	4.69
Marysville	17.43	Indio	1.20
Chico	17.62	Mammoth Tank	1.82
Tehama	10.40	Yuma	1.29
Red Bluff	28.95	Texas Hill	1.52
Redding	50.77	Maricopa	.88
Modesto	8.40	Pantano	1 25
Turlock	9.05	Ione	17.26
Merced	11.59	Farmington	13.20
Borden	10.08	Anaheim	7.08
Fresno	8 22	Petaluma	23.29

San Luis Obispo Notes.

Mr. C. Bagge, of Oakland, who recently visited this county "land experting," speaks well of the opportunities offered for investment in farming lands. It is not an uncommon thing for cultivators to clear the expenses of raising and first cost of the land from a single crop of Lima beans. Twenty to thirty sacks are raised to the acre, weighing about 72 lbs. each. They have sold this season for 3 to 3½ cents per lb. A large quantity are now steamed and canned at Lusk's and other canneries, in a manner that the prospector and camper roving over the country can set a superb dinner of "Boston quail" in a twinkling, and rejoice over even a better article than the old diet of baked beans. Mr. Bagge reports in this connection, that Steele Bros. have established an important enterprise in the way of a pork packing establishment, which is doing a good run of business to the advantage of producers. He also speaks favorably of the system of settling up lands adopted by these large land owners, whereby they assist the settler in furnishing him and his family with teams, seed, provisions, etc., while making a crop, to pay interest and principal on the purchase of the land set apart for them. Here is an example for other land owners to imitate, and, if possible, improve on.

THE SACKETT SCHOOL.—This well-known Oakland school for boys began its new year on January 3d, most auspiciously. The attendance of scholars has increased 50% since last term, and everything promises a prosperous year for the institution.

HORTICULTURAL SOCIETY MEETING.—The State Horticultural Society held an interesting meeting in this city last week, but Sacramento horticulture has us by the throat this week, and we are obliged to drop our notes of the other meeting for the present.

Distributing Risks in Fire Insurance.

The great fires of Portland, Chicago, Boston and St. Johns have caused a revolution in the system of fire insurance in more senses than one, not insignificant of which is distribution of risks and division of lines.

This theory had its incipiency with the large underwriting corporations of the time, and was by them taught their agents, and by their agents taught the insuring public with ever varying success, until the oft occurring conflagrations and consequent crippling of companies, with its attendant confusion and loss to the insured burned into the reason of property owners the absolute necessity of small lines and many companies to be reasonably protected against large fires.

In the scramble for business single companies under exclusive management have gone down under the weight of heavy lines closely huddled together in burned districts, and the policy holders have been left with but their premium receipts to console them, where the facilities for distributing the risks among several companies and a disposition to make use of these facilities would not only have saved the company's life, but would have protected the interests of the policy holder, and possibly saved him from financial ruin.

Now, companies and property owners have almost universally wheeled into line on this question, admitting its importance and practicing its lessons, until it is difficult for the former to put out or the latter obtain a policy of insurance covering more than $10,000; whereas, two decades ago, it was not an unusual thing to find individual companies carrying from $50,000 to to $150,000 on a single risk.

To accomodate this demand of the insuring public, the well known firm of Messrs. Hutchinson & Mann, of our city, have gathered around them a large list of staunch Fire Insurance companies, which, during the past ten years have promptly and satisfactorily met and paid their large losses (reaching more than $2,000,000), entitling them to their justly merited position of one of the *First* amoung the underwriting fraternity of our coast—the heartfelt thanks of hosts of victims of fire, and the respect of all our business and commercial circles.

An individual or a corporation's success in any field or enterprise is usually the measure of capacity and energy; and in the peculiar profession of fire underwriting, these two elements are especially requisite to success. That Messrs. Hutchinson & Mann have been successful in establishing and controlling in its minutest detail their enormous business of $600,000 annually is an unquestioned fact, attained through eternal vigilance and personal solicitation and application. They have not, like the hen in the fable, sat still after requesting others to scratch for them; but they also have scratched early and late, and we point to them with pride as probably the largest in point of premium receipts of any insurauce agency in the United States.

What I Do With My "Rural Press."

First, read it attentively, especially the "Correspondence" and "Agricultural Notes," and scientific observations of Prof. Hilgard or others. Then, have one of the children read aloud, as occasion presents itself, portions that will be interesting to the whole family. Then, should I have inquiries from some of my Eastern friends, mail the paper East. If not, I lay it carefully away. At the end of six months I have a good sized volume of the best agriculture on the coast, with a full, well-arranged index at the end of the volume. I arrange the papers in regular order, punch holes with an awl completely through the backs at the top, middle and bottom, and with a darning needle and coarse thread sew all together. Then press a rule or square on the book; with a sharp knife I trim the front, top and bottom, by repeatedly running the knife along the edge of the rule. Then sew on pasteboard covers, and I have a very neat agricultural work of inestimable value to any resident of California. If I wish to know all that has ever been known or written upon any agricultural matter on the coast—soils, treatment of the various kinds of soils, manures, grains, fruits, fruit trees, pests, squirrels, gophers, insects, poisons; in short, anything that is interesting to farmers in California that has ever been published in *the* agricultural paper of the State—I take down my RURAL PRESS, glance over the tables of contents, and in a few moments I usually find that for which I am in search. In point of fact, no one can afford to farm in California who does not take the RURAL PRESS. S. P. SNOW.

Santa Barbara, Cal.

WHEAT GROWERS' MEETING.—The Wheat growers' Society will meet in Grangers' hall, No. 40 California street, up stairs, on Monday, Jan. 9th, at 2 P. M. Matters of much importance will be presented, and a full attendance of growers is desirable.

THE London *Times* says the Chileans, who obtained a victory in a just war, will not be inclined to submit to dictation unless the American army and navy are largely reinforced.

The Grangers' Bank.

The official statement in our advertising colums this week shows the condition of the Grangers' Bank at the close of the year, as required by law. It must be gratifying to the friends of the bank to see so creditable a showing made. We cite items from the reports of the last three years, that an idea of the growth of the business from year to year may be had:

	Capital Stock.	Total Assets.	Undivided Profits
1879	$400,000	$673,814 25	$36,569 06
1880	$400,000	$1,700,848 61	$43,141.30
1881	$500,000	$1,917,577.06	$69,578.96

This shows that the bank has greatly increased its business, and has increased the profits accruing to stockholders. In 1879, the percentage of profit was 9.18%; in 1880, 10.50% and in 1881 12% and a trifle over. By the confidence gained by its management, capital was freely supplied for its use in loans on agricultural securities; and, on the other hand, its transactions and the low rate of interest charged made the bank popular among the producers. The result is that a large business has been done, and a good profit secured, while at the same time the public interest has been served. An Eastern paper remarked the other day: "Why is it that some banks with a small capital stock are enabled to do a more successful business than other banks with much greater resources? It is in the management." The Eastern paper was right. Albert Montpellier, cashier and manager of the Grangers' bank, is entitled to such credit.

GENERAL LE DUC.—Gen. Le Duc, ex Commissioner of Agriculture, is now in San Francisco. On Wednesday afternoon he visited Grange headquarters, and was entertained by Bro. Amos Adams, manager of the Grangers' Business Association, and Bro. J. V. Webster, Secretary of the State Grange. The general was shown the workings of the Grange institutions, and exhibited much interest therein.

THE CALIFORNIAN, a Monthly Magazine, is the exponent of a new, vigorous literature. It has, what is so hard to create, a distinctive flavor. Office 408 California St., San Francisco. Subscription $4 per year.

COPP'S AMERICAN SETTLER'S GUIDE,
A Popular Exposition of our Public Land System.
PRICE—On fine paper and in substantial cloth binding, $1.
Send to the office of this paper and get a copy of this popular book.

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Four years old. Perfectly gentle Pedigree can be had on application. W. AITKEN, Healdsburg, Cal.

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Sign and Ornamental Painters,
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(Opposite their old stand.)

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GRAY & HAVEN,
Attorneys and Counsellers-at-Law,
530 California St., SAN FRANCISCO.

Mulberry Cuttings
For sale from choice selected varieties of Morus Alba or White Mulberry.
Address MRS. S. A. SELLERS Antioch, Cal.

70 YOUR NAME In New Type on 70 Cards 10c
New styles, by best artists: *Bouquets, Birds, Gold Chromos, Landscapes, Water Scenes, etc.*—no 2 alike. Agent's Complete Sample Book, 25c. Great variety *Advertising and Bevel-Edge Cards.* Lowest prices to dealers and printers. 100 *Samples Fancy Advertising Cards*, 50c.
Address STEVENS BROS., Box 22, Northford, Ct.

Instructor and Piano Teacher,
German, single, respectfully solicits offers from the country. Expectations modest. P. WERNER, San Francisco.

Engraving. Superior Wood and Metal Engraving, Electrotyping and Stereotyping done at the office of the MINING AND SCIENTIFIC PRESS, San Francisco, at favorable rates

Agricultural Articles.

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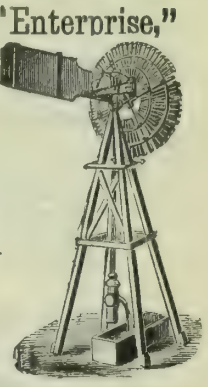
Spring Tooth Harrow
CULTIVATOR & SEEDER.

As IMPROVED and PERFECTED for 1881 will work equally as well on loose or wet land as in hard or dry soil, and are what every farmer needs to destroy vegetation on the summer fallow. Will save replowing and put the land in the best possible condition for early sowing.
LOOK TO YOUR INTERESTS
And make money by saving time and working your fallows before harvest. Our new size six-foot ORCHARD or VINEYARD HARROWS are provided with handles, rendering them as easily controlled as the Cultivators. These implements are acknowledged by all who are familiar with their work, to be the most practical for general use in the orchard or vineyard of any yet offered to the public. Manufactured only by
BATCHELOR, VAN GELDER & CO.,
Nos. 900 & 902 K Street, Sacramento, Cal
Under the original patents now owned by
D. C. & H. C. REED & CO., Kalamazoo, Michigan.
Beware of Infringements.

The Famous "Enterprise,"
PERKINS' PATENT Self Regulating
WINDMILLS,
Pumps & Fixtures.



These Mills and Pumps are reliable and always give satisfaction. Simple, strong and durable in all parts. Solid wrought iron crank shaft with *double bearings* for the crank to work in, all turned run in babbitted boxes.
Positively self regulating with no coil spring or springs of any kind. No little rods, joints, levers or balls to get out of order, as such things do. Mills in use six to nine years in good order now, that have never cost one cent for repairs.
All sizes of Pumping and Power Mills. Thousands in use. *All warranted.* Address for circulars and information
HORTON & KENNEDY,
GENERAL OFFICE AND SUPPLIES, LIVERMORE, ALAMEDA CO., CAL. Also, Best Feed Mills for sale.
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MATTESON & WILLIAMSON'S
AMERICAN CHIEF GANG PLOW.

Took the Premium over all at the great plowing Match in Stockton, in 1870.
This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the best and most desirable Gang Plow in the world.
Iron Founders, Machinists and Manufacturers of Improved Agricultural Implements. General Jobbing and repairing done in the best manner at most reasonable rates. Send for circular to MATTESON & WILLIAMSON, Stockton, Cal.

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ROSES
The only establishment making a SPECIAL BUSINESS OF ROSES. 50 LARGE HOUSES for ROSES alone. We deliver Strong Pot Plants, suitable for immediate bloom, safely by mail, postpaid. 5 splendid varieties, your choice, all labeled, for $1; 12 for $2; 19 for $3; 26 for $4; 35 for $5; 75 for $10; 100 for $13. We GIVE AWAY, in Premiums and Extras, more ROSES than most establishments grow. Our NEW GUIDE, *a complete Treatise on the Rose*, 70 pp. *elegantly illustrated—free to all*
THE DINGEE & CONARD CO.
Rose Growers, West Grove, Chester Co., Pa.

AMERICAN
MACHINE AND MODEL WORKS.
All kinds of Light Iron and Wood Work, including Patterns, Gear Cutting, Planing. Engine, Musical Instruments and other repairing. Dies, Taps, Reamers, etc., a specialty.
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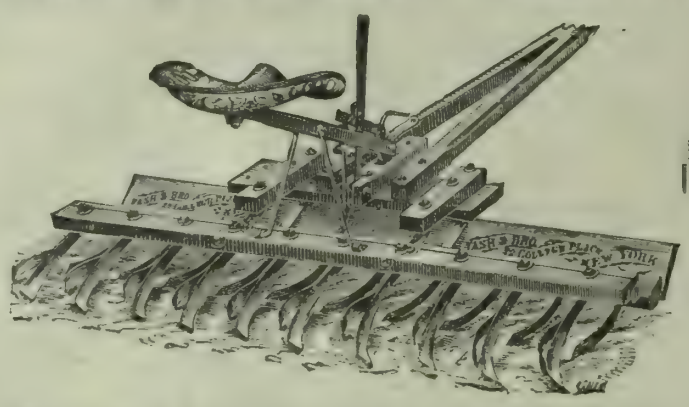

Send for Pamphlet giving Testimonials from the Pacific Coast.

The "ACME" subjects the soil to the action of a Crusher and Leveler, and at the same time to the Cutting Lifting, Turning process of double rows of STEEL COULTERS, the peculiar shape and arrangement of which give Immense Cutting Power. The entire absence of Spikes or Spring Teeth avoids pulling up rubbish. It is especially adapted to inverted sod, hard clay and "slough land" where other Harrows utterly fail, and also works perfectly on light soil.

NASH & BRO., Sole Manufacturers,
22 College Place, New York City.

SOLD IN CALIFORNIA BY: G. B. Adams & Son, San Gabriel; Oliver Holden, San Jose, Jonn Tuohy, Visalia.

IMPERIAL EGG FOOD.

Will make your Hens Lay, keep them in the best possible condition and ward off disease. When fed according to directions, sick and drooping fowls are never seen. It furnishes the needed material for forming bone, muscle and feathers, and is

Invaluable for Young Chicks and Moulting Fowls. It comes packed in various sized packages, and being a powder, is easily mixed with the customary feed. Give it a trial. Send Stamp for Circular and Testimonials.

Price.—Single pound, 50 cents; Two and a half pounds, $1.00; Six pounds, $2.00; 25 pound keg $6.25. Address,

G. G. WICKSON,
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No. 319 Market St.,
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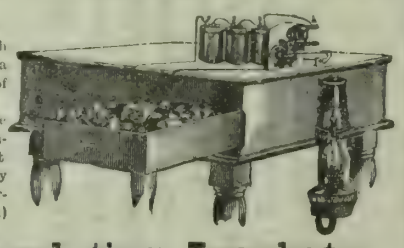
MONEY IN CHICKENS AND EGGS.

—The— Eclipse Self Regulating Incubators are now in actual use in most parts of this State, and giving general satisfaction. They are a success, and being such are invaluable to all who attempt to raise chickens; are easy to manage, and cost merely a trifle to keep in operation, and will do much better work than can be done with hens, with a small portion of the labor and risk.

☞ The "ECLIPSE" is the only entirely self-regulating incubator known; is the only one that will bear investigating, so it is the only safe one to purchase. Send stamp for Circular of California Testimonials (not Eastern.)



The Eclipse Self-Regulating Incubator.

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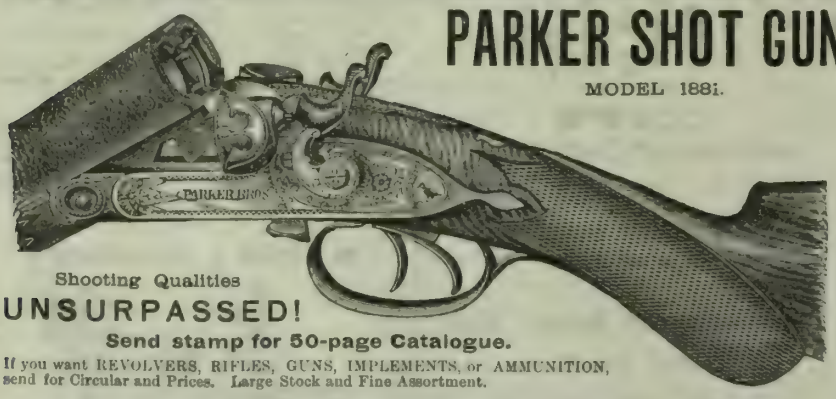
MODEL 1881.



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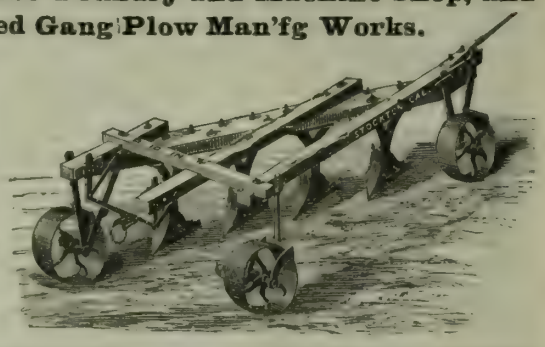

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Oak Timber and Plank, Thin Fancy Woods,
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Langshans, Cochins, Brahmas, Leghorns, Plymouth Rocks, Dorkings, Pekin and Rouen Ducks, Bronze Turkeys, Etc.

I have a large stock of the above varieties for Sale Cheap, considering the quality of stock. For further information, send 3 cent stamp for new circular and price list to **R. G. HEAD, Napa, Cal.**

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For Sale in large or small tracts, on easy terms, in the best parts of the State.

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Goods Crops every Season without Irrigation

Farms, Stock Ranches, Dairy Farms, Fruit Farms, Vineyards, Chicken Ranches and homesteads of every class and description in this and adjoining counties for sale or rent on reasonable terms. State requirements and obtain suitable particulars from the Real Estate

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Containing 24 acres fronting on Davis Avenue, one mile north of the flourishing town of Los Gatos. Good house, barn, chicken house and yard. A good well of soft water; 1,000 fruit trees, assorted, and 550 grape vines, all set out last winter. About 50 oak trees, large and small, adds to the beauty of the place. This beautiful, healthy place, situated in the charming warm belt climate of the foothills, is sold for the want of health and means to carry it on.

Price, $2,700. Address G. W. McGREW, Los Gatos, Cal.
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Located about ¾ of a mile north of Los Gatos, fronting on the county road. Containing 42 acres—20 of which is planted to fruit and 10 acres to grapes. All planted out last winter and having made a splendid growth. The orchard consists of the best varieties of apple, pear, peach, plum, prune, cherry, apricot and about 50 orange trees. Good house, barn, chicken and outhouses; 2 wells of water. All improvements new. Price, $5,200.

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853 Broadway, New York.

NOTICE!

THE MEMBERS OF THE

Wheat Growers' Association of California

And others interested are notified that there will be a meeting held at Grangers' Hall, corner Davis and California streets, San Francisco, Cal., on Monday, January 9th, 1882, at 2 o'clock P. M. for the purpose of adopting a code of by-laws, and the transaction of such other business as may properly come before said meeting. A full attendance is desirable. J. W. McCARTHY, Sec'y.

SEND TO

CADIEN & BAGLEY,

Stockton, Cal., for

ANTI-RHEUMATIC

Shrunk Flannel Underwear.

Measure around chest over vest for undershirt; around waist under vest for drawers. Goods sent C. O. D. per W. F. & Co. Price, $6 a suit.

We can furnish immediately in any quantity,

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Of Rupestris.

These stocks are phylloxera-proof, and will grow readily from cuttings as the vinifera. For particulars apply to

M. FISHEL & CO.,
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Short Horn Bulls For Sale.

The undersigned now have for sale a few choice Thoroughbred and high grade bulls from the best milk strains Our herd consists of "Young Marys," "Daisies," "Imp Britannias," etc. Prices Reasonable.

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COL. C. YOUNGER, Forest Home Herd, San Jose, Cal. Breeder of Short-Horn Durhams, and pure bred Cotswold Sheep. Young Bulls and Bucks always for sale. Herd took Gold Medal, 1881.

WILLIAM NILES, Los Angeles, Cal. Thoroughbred Poultry, Cattle and Hogs. Write for circular.

HENRY PIERCE, 728 Montgomery Street, S. F. Jersey Cattle, bred from Importation direct from Jersey Island, and winners of most of the prizes at Oakland, Stockton and the State Fairs. "Victor of Yerba Buena," of noted butter strains on the Island, and known to be the best Bull ever imported to this coast, now stands at the head of this famous herd. "King of Scituate," son of the famous 705 pound butter Cow, Jersey Belle, of Scituate, which now stands at the head of Mr. Pierce's noted herd, at Scituate, Mass., will soon be brought here.

PETER SAXE & SON, Lick House, S. F. Importers and Breeders for past *eleven* years. Berkshires, "Jerseys," "Short Horns," and all varieties of Sheep, and their grades.

PAGE BROTHERS, 213 Clay street, San Francisco, (or Cotate Ranch, near Petaluma, Sonoma Co.) Breeders of Short Horns and Spanish Merino Sheep.

MRS. M. E. BRADLEY, San Jose, Cal. Breeder of recorded thoroughbred Short Horn cattle and Berkshire hogs. A choice lot of young stock for sale.

R. J. MERKELEY, Sacramento, Cal. Breeder of Short-Horn Durhams and Norman-Percheron horses.

ROBT. BECK, San Francisco. Breeder of Thoroughbred Jersey cattle. Herd took Six Premiums of the eleven offered at State Fair, 1881.

GEO. BEMENT, Redwood City, San Mateo Co., Cal. Breeder of Ayrshire Cattle. Several fine young Bulls, Yearlings and Calves For Sale.

R. NOELL, Grass Valley, Nevada Co., Cal. Breeder and Importer of Thoroughbred Jerseys.

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JAS. A. PERRY, of River View Stock Farm, Wilmington, Ill., has in Petaluma, Sonoma county, several fine Norman Stallions of his last importation direct from France. Catalogues on application to Jas. A. Perry, Fashion Stables, Petaluma, Cal.

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J. R. ROSE, Lakeville, Sonoma Co., Cal. Breeder of Thoroughbred Devons, roadster horses and Percheron draft horses.

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HALSTED'S NEW INCUBATOR. Price $30. 1011 Broadway, Oakland. Send for circular.

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ALFRED PARKER, Bellota, San Joaquin Co., Cal. Importer, Breeder and Shipper of Pure Berkshire Swine. Agent for Dana's Cattle, Hog and Sheep Labels.

T. WAITE, Brighton, Sacramento Co. Breeder of Thoroughbred Berkshire Hogs and choice Imported Poultry. Took Premium State Fair, 1880 and 1881 of Leghorns (brown and white), Speckled Hamburgs, Plymouth Rocks and Pekin Ducks.

JOHN RIDER, Sacramento, Cal. Breeder of Thoroughbred Berkshire Swine. My stock of Hogs are all recorded in the American Berkshire Record.

ELIAS GALLUP, Hanford, Cal., Breeder of Poland China Swine. Stock recorded in American Poland China Record. Are descendants of the celebrated McCrary-Bismarck, bred by D. M. Magie, Oxford, Ohio. Took five First Premiums at State Fair in 1880.

TYLER BEACH, San Jose, Cal. Breeder of thoroughbred Berkshires of stock imported by L. Stanford.

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J. D. ENAS, Sunnyside, Napa, Cal., Breeds Pure Italian Queen Bees. Comb Foundation.

40 Comic Transparent Cards, name on, 10 cents, or 50 fine Chromos, 10 cents. Wise & Co., Clintonville, Ct.

The Fresno Colony,

On the line of the Southern Pacific Railroad and adjoining Fresno City and the Central Colony. Has the most favoroble location of any Colony, as well as other superior advantages. Abundant water secured. Land unsurpassed for Vine Raising and Fruit Culture. Send for Map and Circular, or come and examine. Address

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S. W. Corner Kearny and Montgomery Ave., San Francisco.

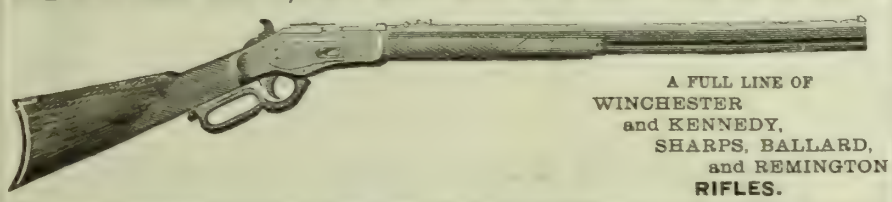
Free Coach to the House. **O. F. BECKER, Proprietor**

C. D. LADD,

821 Kearny Street, - - - - - San Francisco, Cal.

SOLE AGENT FOR THE PACIFIC COAST FOR

THE BALLARD RIFLE, AND MARLIN'S NEW BALLARD REPEATER.



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Complete Assortment of Shot Guns and Pistols of all Makers. Ammunition in lots to Suit. Liberal discount to the trade. Send for Special Price List for Marlin's New Repeater and Ladd's Improvement on the Kennedy Rifles.

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That the public should know that for the past ELEVEN years our SOLE BUSINESS has been, and now is, importing (OVER 100 CARLOADS) and breeding improved Live Stock. Horses, Jacks, Short Horns, Ayrshires and Jerseys (or Alderneys) and their grades, also ALL THE VARIETIES of breeding Sheep and Hogs. We can supply any and all good animals that may be wanted, and at VERY REASONABLE PRICES and on CONVENIENT TERMS. Write or call on us. LICK HOUSE, San Francisco, Cal., October 22, 1881. PETER SAXE & HOMER P. SAXE.

PETER SAXE & SON.

THE MYERS PLOWS.

All extras for Patent

Slip-share Gang Plows,

SIDE-HILL, SUB-SOIL

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SINGLE PLOWS,

Constantly on hand and for sale at

RICE'S ENGINE WORKS,

SOLE AGENCY,

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PERFECTLY RESTORE THE HEARING and perform the work of the **Natural Drum.** Always in position, **but invisible to others.** All Conversation and even whispers heard distinctly. **We refer to those using them.** Send for descriptive circular with testimonials. Address, **H. P. K. PECK & CO., 853 Broadway, New York.**

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I am now ready to sell Carp which were imported from Germany in 1872, in lots to suit. Address

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50 Varieties French Chromo Satin, Pearl Finished Etc cards, name in gold, 10c. Card Mills, Northford Ct.

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A Large and elegant stud of imported Clydesdale Stallions and Mares of all ages. Hambletonian Stallions and Mares of superior breeding. Personal inspection invited. Separate catalogues of each class, and milk records of cows mailed free on application. All inquiries promptly answered. State that you saw this advertisement in the PACIFIC RURAL PRESS.

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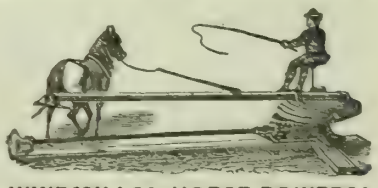

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This machine is an improvement on the celebrated "Humboldt." For Families or Hotels it will pay for itself in less than six months. Lace curtains and other delicate fabrics can be washed without injury. Price $15. Manufactory, 431 Fourth St., S. F. Local or traveling Agents wanted. G. M. PURSELL, Patentee.

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PATENTED AUGUST, 1881.

A Box Churn with dashers, or can be used without dashers. Can be run with reverse motion with one man or two. A trial will convince that this is the best Churn in use. For Churns and Agencies, apply to

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SHEEP WASH.

$2 per Gallon.

After dipping the Sheep, is useful for preserving wet hides, destroying the vine pest, and for wheat dressings and disinfecting purposes, etc. T. W. JACKSON. S. F., Sole Agent for Pacific Coast.

Poultry and Stock Book

A complete manual and reference book on all subjects connected with successful Poultry and Stock raising on the Pacific Coast. A New Edition, over 100 pages, profusely illustrated with handsome life-like illustrations of the different varieties of poultry and live stock. Price by mail, 50 cents. Address WILLIAM NILES, Los Angeles, Cal.

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Hooper's South End Grain Warehouses,

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First-class Fire-proof Brick Building. Capacity, 10,000 tons. Goods taken from the Dock and the Cars of the C. P. R. R. and S. P. R. R. free of charge. Storage at Current Rates. Advances and Insurance effected.

52 Gold, Crystal, Lace, Perfumed & Chromo Cards, name in gold and jet, 10c. Clinton Bros., Clintonville, Co

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & CO.'S SCIENTIFIC PRESS PATENT AGENCY, No. 252 Market St., S. F.

FOR THE WEEK ENDING DECEMBER 20, 1881.

251,018.—HAY UNLOADING AND STACKING APPARATUS—Jos. C. Austin, Imusdale, Cal.
251,021.—GAG RUNNER—Wm. M. Blaine, Salinas, Cal.
251,337.—DESK—J. H. Burrows, Boise City, I. T.
251,028.—TRANSOM ADJUSTER—B. H. Carter, Oakland.
251,201—WASHING MACHINE—M. J. Fenwick, Cottage Grove, Or.
251,034—FOOTSTOOL FOR ROCKING CHAIRS—Ferdinand Franz, S. F.
251,044—ORE CRUSHER AND GRINDER—Wm. Gutenberger, Sacramento, Cal.
251,114—WIRE ROPE AND CABLE—A. S. Hallidie, S. F.
251,045—ATTACHMENT FOR CLEANING SHOES OF THRASHING MACHINES—H. Hamilton, Visalia, Cal.
251,115—BUCKBOARD WAGON—J. Hansel, Stockton, Cal.
251,054—PAINT COMPOUND FOR METALLIC SURFACES—Eugene Jones, Gold Hill, Nev.
251,119—FIELD THRASHER—H. Jory, Marysville, Cal.
9,085 (re-issue) ARTIFICIAL TOOTH—C. H. Mack, Walla Walla, W. T.
251,264—STAMP MILL—Jas. F. Marvin, Ft. McDowell, A. T.
251,127—PICTURE FEEDING DEVICE FOR MAGIC LANTERNS E. J. Muybridge, S. F.
251,287—PLOW—C. H. Remington, Gilroy, Cal.
251,069—PIANO STOOL—S. W. Shaw, S. F.
251,070—SASH FASTENER—S. W. Shaw, S. F.
251,302—HYDRAULIC MOTOR—W. J. Silver, Salt Lake City, Utah.
251,076—FAUCET—M. Tommasi, Smith's Ranch, Cal.
251,145—EXPLOSIVE COMPOUND—G. von Planitz, S. F.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast Inventors transacted with perfect security and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of special mention:

GRAIN CLEANER.—Franklin Dalbey, Sheridan, Placer Co., Cal. No. 250,789. Dated Dec. 19, 1881. This grain cleaner consists in a combination of mechanism for adjusting a double seiving box whereby the grain which is discharged above and subjected in its fall to a blast of air is cleaned up, the chaff and lighter grain being blown onward into the farther receptacle and the good grain dropped closer in, from where it is conducted upon a shaking screen for further cleaning. The object of the invention is to clean up grain after it has been thrashed to render it suitable for market or for seeding purposes. For these two objects a different degree of cleaning is required. For the market it is not necessary to clean the wheat as thoroughly as for seed. In the latter case not only the chaff and foreign stuff must be separated, but all the light and imperfect wheat, commonly known as "chicken feed," must be taken out, because as seed the best grains are required, while in the former case if the wheat is not quite so thoroughly cleaned, it is just as good and a considerable portion is saved.

FRUIT-PITTING MACHINE.—Antonio Donatella, Healdsburg. No. 250,794. Dated Dec. 13, 1881. This fruit-pitting machine consists in the employment of a peculiar combined punch and knife, which is brought down upon the fruit with a sudden force, the effect of which is to drive the pit downward through a perforated bed plate, and cut the fruit in half. The bed plate is provided with a rubber cushion for the purpose of more thoroughly cleaning the pit as it is forced through. The employment of the rubber cushion is beneficial in that it scrapes the pit cleaner, and presents a softer surface to the fruit than the metal could, and thus is not liable to bruise or injure it. For different fruits the apertures in the cushion and plate are made of different sizes, to permit the passage of different sized pits. The device is worked by the foot.

Pacific Coast Weather for the Week.

[Furnished for publication in the RURAL PRESS by NELSON GEROM, Sergt. Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending Wednesday, Dec. 21st, at noon, for the stations named:

Date.	Olympia.	Portland.	Roseburg	Red Bluff	Sacramento	San Francisco	Visalia.	Los Angeles.	San Diego.
Thursday, 29th	.07	.02	.00	.01	.03	.00	.00	.00	.00
Friday, 30th	.00	.00	.00	.00	.00	.00	.00	.00	.00
Saturday, 31st	.37	.15	.00	.00	.00	.00	.00	.00	.00
Sunday, 1st	.33	.89	.75	.00	0.0	.00	.00	.00	.00
Monday, 2d	.44	.48	.38	.23	.08	.06	—	.00	.00
Tuesday, 3d	.08	.24	.43	.09	.05	.07	.00	.00	.00
Wed'sday, 4th	.30	.45	.11	.73	.37	.19	—	.00	.00
Total for Week.	*1.63	2.14	*1.67	1.0	0.53	0.32	0.—	.00	.00

*Sixteen hours missing from Olympia, and 8 hours from Portland, Roseburg and Red Bluff during week. Reports missing from north of Red Bluff this P. M

THE State Fish Commission has received from the East 50,000 Eastern trout and 500,000 whitefish eggs for distribution in the waters of this State. Twenty thousand of the trout eggs are being hatched at San Leandro.

The Pacific Rural Press.

[Established in San Francisco in 1870.]

This is the leading farming journal on the western half of the continent, and second to none in America. It is well printed and illustrated, weekly. Contains an unusual amount of fresh, original farm, household and family circle literature. Careful attention is paid to giving full and reliable weekly market reports. The following are among its ably conducted departments: Editorials on agricultural and other timely and important subjects of live interest to farmers and their families; agricultural, and other useful and ornamental illustrations; correspondence from various quarters of our new and rich developing fields of agriculture on the Pacific coast, embracing new hints and ideas from progressive men and women in all branches of rural industry; Horticulture; Floriculture; The Garden; The Home Circle; The Grange; Young Folks; Domestic Economy; Good Health; Entomological; Sheep and Wool; The Dairy; The Stock Yard; Poultry Yard; The Swine Yard; The Apiary; The Vineyard; Queries and Replies; New Inventions (and illustrations of new and improved machinery); Agricultural Notes; Items of General News, etc. Its columns are studiously filled with chaste, interesting, fresh and useful reading, devoid of questionable literature for old or young and fancifully alluring clap-trap advertisements. Send for sample copies.

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We have some desirable rooms to let adjoining the offices of this paper which will be rented on favorable terms. Stair entrance, No. 252 Market St. Elevator, No. 12 Front St. Parties wishing offices, etc., will do well to call and see them. DEWEY & CO.

Volunteer Testimonials of Those Who Have Used Booth's Exterminator.

SAN LUIS OBISPO, CAL., Aug. 9th, 1880.

The undersigned Committee, appointed by San Luis Obispo Grange, P. of H., No 28, have used the Squirrel and Gopher Poison prepared by A. R. Booth, at the Eagle Drug Store, San Luis Obispo, during the growing season, when there was plenty of green things for squirrels and gophers to live upon, and we find that they take the Poison above described, at this season of the year, and that the effect is as destructive as could be wished; and it is the cheapest and best Squirrel and Gopher Poison with which we are acquainted, or ever experimented with.

Attest: A. T. MASON, Sec'y P. of H., No. 28. E. W. STEELE, F. F. WHITE, L. M. WARDEN. } Com.

Dewey & Co.'s Patent Agency and Newspaper Offices.

Dewey & Co.'s Patent Agency and the business offices of the Mining and Scientific Press, Pacific Rural Press, Pacific States Watchman and the Fraternal Record are now favorably situated at No. 252 Market Street. Elevator entrance, *No. 12 Front St., S. F.*

Our Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

G. W. MCGREW—Santa Clara county.
M. P. OWEN—Santa Cruz county.
J. W. A. WRIGHT—Merced, Tulare and Kern counties.
JARED C. HOAG—California.
B. W. CROWELL—Humboldt and Trinity counties.
D. W. KELLEHER—Merced, Fresno and San Benito.
A. C. KNOX—State of Nevada.
EDWARD A. WEED—San Francisco.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct, or if the paper should ever come beyond the time desired, be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances. The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

MANSION HOUSE.—First-class in every respect, and reasonable prices. When you visit Stockton stop at the Mansion House. Free Coach to the house. J. H. CROSS, Proprietor.

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

ANNUAL STATISTICIAN of 1881.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 816 California st. Price, $4

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.

The New Year.

Acknowledging all favors of the past, the publishers of the RURAL solicit their patrons to renew their subscriptions as promptly as possible at this season. The expense of our recent removal and the desire to advance a notch higher for the true interests of our intelligent readers—"the wide-awake farmers of the Pacific coast"—make it of more than ordinary benefit to our enterprises to receive old and new subscriptions at the present. We are happy to say, that in no past season have the prospects of the RURAL been more promising than its present outlook for the year 1882. Will you help us go ahead?

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Jan. 4, 1882.

The Wheat market has gathered strength and tone again the world over. In this market there has been a gain of about 5¢ per ctl in ruling rates, and there has been a renewal of transactions both for shipping and milling. The latest from abroad is as follows:

The Foreign Review.

LONDON, Jan. 2d.—The Mark Lane Express says the young plant is at present strong and healthy, except in a few districts, which are subject to floods. The scarcity of sound samples of English Wheat is becoming pronounced, and they are in some markets slightly dearer. Flour is firm, and the best makers are 1 shilling higher in the country and 6d. higher in London, as compared with a fortnight ago; the rise is due to the slackening in supply of the foreign trade. The other home grain produce remains similar to that in Wheat. The trade in foreign breadstuffs in London is at least as good as it has been for some weeks. Wheat is slightly dearer; fine qualities are particularly affected by the smallness of the stock. Red Wheat is rather scarcer, and consequently in better demand than White, but the trade is very small. Choice flours are occasionally dearer. The cargo trade is quiet and light. Cargoes were sold of 25 vessels off coast. Red Winter Wheat generally is 53s 6d. The sales of English Wheat during the week were 32,227 quarters at 44s. 3d. per quarter, against 27,140 quarters at 41s. 11d. in the corresponding week of last year.

Eastern Wool Markets.

BOSTON, Jan 3d.—The Wool market is firm with a steady demand, and full prices continue to be realized for all kinds. Sales of Ohio and Pennsylvania fleeces at 43 to 45c for X and XX, and good average double XX is generally held at the latter price. Michigan X fleeces are held at 42c and are firm. Combing and delaine selections remain the same at 46@50c for fine delaine and fine combed. Unwashed combing is in moderate demand at 25@33c for course and medium grades. Unwashed fleeces are in demand and firm at 25@32c for fine; 25@34c for medium grades. Full prices are maintained for Pulled Wool, and it is in good demand. The feeling is very firm for all kinds of Wool, and a good range of prices is looked for.

PHILADELPHIA, Jan 3d.—Wool continues firm and without change in prices.

Freights and Charters.

Since Saturday there have been 10 arrivals, of which the following were chartered: Iron ship Khorassan, 1,039 tons, 75s to Cork, U. K.; iron bark Royal George, 899 tons, 70s 6d to Cork; iron ship Plantagenet, 1,318 tons, 62s 6d to Cork; iron ship Anglesey, 1,260 tons, private; iron ship Tilkhurst, 1,570 tons, 62s 6d to Cork. Quotations were nominal and exporters are bearing freight rates. It was not thought possible that Saturday's rates, which were 70s for wood to Liverpool, Havre or Antwerp direct, could be duplicated. Holders of tonnage make a straight fight against any decline, hoping that exporters will soon be forced into the market by previous Wheat engagements.

BAGS—Bags are about the same as at our last report.

BARLEY—Barley still goes forward, Feed having gained 5c, and Brewing 2½c per ctl, over last week's rates.

BEANS—Beans are unchanged. The inquiry is now very slack.

CORN—All sorts have advanced to $1.62½ ℔ ctl for best samples. Sales are not many, but the tone is strong.

DAIRY PRODUCE—There is a little freer arrival of new Butter, but rates are not changed as yet. Cheese is scarce and firm.

EGGS—Choice California Eggs are still in demand and few. The best have sold at 40c—a shade better than last week.

FEED—Feed is quiet and steady. Hay has ruled rather lower this week. Ground Feeds are unchanged.

FRESH MEAT—There is no change, the recent advances being still retained.

HOPS—Hops are quiet, the best Californias still quotable at 27½c ℔ lb.

FRUIT—Apples and Pears are unchanged. Citrus Fruits have held a very even course and have sold fairly.

OATS—Oats still run up. Choice Northern Territory have sold up to $1.77½@1.80, and Surprise are quoted up to $1 90 per ctl.

ONIONS—Onions are plenty, and rule from 60 to 75c per ctl.

POTATOES—Potatoes are a little weak and some of the commoner sorts have shaded off a trifle.

PROVISIONS—The trade is quiet, with rates a little more favorable to buyers.

POULTRY AND GAME—The reaction has brought fairer prices both for fowls and game birds.

VEGETABLES—The selection is very small and prices stationary.

WHEAT—Trade has been more active at an advance. We note sales chiefly of lower grades: 75 tons No. 2, $1,-62½; 1,800 sks do, $1.61¼; 2,000 sks do, $1.60, and 1,000 sks off grade, $1.57½. No. 1 is worth $1.67½ per ctl.

WOOL—There is no change. The report of the Wool trade for the year may be found in another column.

Domestic Produce.

WHOLESALE.
WEDNESDAY M., January 4, 1882

BEANS & PEAS.		Peanuts	6 @ 6½
Bayo, ctl	1 75 @ 2 25	Filberts	14 @ 15
Butter	3 00 @ 3 25	**ONIONS.**	
Castor	3 50 @ 4 00	Red	— @ —
Pea	3 50 @ 3 80	Silverskin	60 @ 75
Red	1 75 @ 1 85	Oregon	— @ —
Pink	1 75 @ 1 85	**POTATOES.**	
Large White	3 00 @ 3 25	Early Rose	1 65 @ 1 15
Small White	3 50 @ 3 80	Petaluma, ctl	1 20 @ 1 30
Lima	— @ 4 00	Tomales	1 20 @ 1 30
Field Peas, b'lk eye	1 50 @ 1 75	Humboldt	1 30 @ 1 35
do, green	2 00 @ 2 25	" Kidney	1 30 @ 1 35
BROOM CORN.		" Peachblow	1 30 @ 1 35
Southern	3 @ 3½	Jersey Blue	1 30 @ 1 35
Northern	4 @ 6	Cuffey Cove	1 25 @ 1 32½
CHICCORY.		River, red	90 @ 1 00
California	4 @ 4½	Chile	— @ 1 25
German	6½ @ 7	do, Oregon	85 @ 1 00
DAIRY PRODUCE, ETC.		Sweet	1 00 @ 1 25
BUTTER.		**POULTRY & GAME.**	
Cal. Fresh Roll, ℔	35 @ 37½	Hens, doz	4 00 @ 7 00
do Fancy Brands	— @ 40	Roosters	4 00 @ 5 50
Pickle Roll	30 @ 32½	Broilers	4 00 @ 4 50
Firkin, new	27 @ 30	Ducks, tame, doz	5 50 @ 7 00
Eastern	20 @ 25	Mallard	3 00 @ 3 50
New York	— @ —	Sprig	1 50 @ 2 00
CHEESE.		Teal	75 @ 1 00
Cheese, Cal., ℔	15 @ 17	Widgeon	1 00 @ 1 25
EGGS.		Geese, pair	1 00 @ 1 75
Cal. Fresh, doz	36 @ 40	Wild Gray, doz	— @ 2 50
Ducks	— @ 35	White do	— @ 1 50
Oregon	36 @ 38	Turkeys	13 @ 15
Eastern, by expr'ss	27½ @ 30	do, Dressed	13 @ 16
Pickled here	— @ —	Turkey Feathers, tail and wing, ℔	10 @ 20
Utah	— @ 32½	Snipe, Eng	1 00 @ 1 25
FEED.		do, Common	50 @ 60
Bran, ton	— @ 16 00	Quail, doz	— @ 1 00
Corn Meal	— @ 32 00	Rabbits	1 00 @ 1 50
Hay	9 00 @ 14 00	Hare	2 00 @ 2 25
Middlings	— @ 23 00	Venison	5 @ 7
Oil Cake Meal	— @ 25 00	**PROVISIONS.**	
Straw, bale	— 62½ @ — 67½	Cal. Bacon, extra clear, ℔	13 @ 13½
FLOUR.		Medium	12 @ 13½
Extra, City Mills	5 25 @ 5 50	Light	13 @ 14½
do, Co'ntry Mills	4 75 @ 5 00	Lard	13 @ 17
do, Oregon	4 75 @ 5 12½	Cal. Smoked Beef	11½ @ 12½
do, Walla Walla	4 50 @ 5 00	Shoulders	9½ @ 10½
Superfine	3 50 @ 4 25	Hams, Cal	12½ @ 13½
FRESH MEAT.		Dupee's	16 @ 16½
Beef, 1st quality, ℔	6½ @ 8	Whittaker	16 @ 16½
Second	4½ @ 5½	Royal	16 @ 16½
Third	4 @ 4½	Stewart	16 @ 16½
Mutton	4 @ 5	Eastlake	16 @ 16½
Spring Lamb	6½ @ 7	**SEEDS.**	
Pork, undressed	5½ @ 6½	Alfalfa	12 @ 13
Dressed	9 @ 9½	do Chile	— @ —
Veal	6½ @ 7½	Canary	3½ @ 4
Milk Calves	7½ @ 8	Clover, Red	14 @ 15
do, choice	@ 8½	White	45 @ 50
GRAIN, ETC.		Cotton	— @ 20
Barley, feed, ctl	1 52½ @ 1 57½	Flaxseed	2½ @ 3½
do, Brewing	1 60 @ 1 65	Hemp	— @ 5
Chevalier	1 55 @ 1 57½	Italian Rye Grass	25 @ —
do, Coast	1 40 @ 1 50	Perennial	25 @ —
Buckwheat	1 62½ @ 1 65	Millet, German	10 @ 12
Corn, White	1 47½ @ 1 52½	do, Common	7 @ 10
Yellow	1 47½ @ 1 52½	Mustard, White	1½ @ 2½
Small Round	1 47½ @ 1 52½	Brown	2½ @ 3
Oats	1 70 @ 1 77½	Rape	2½ @ 2½
Milling	1 75 @ 1 80	Ky Blue Grass	20 @ 25
Rye	2 00 @ 2 12½	2d quality	16 @ 18
Wheat, No. 1	1 65 @ 1 67½	Sweet V Grass	— @ 75
do, No. 2	1 60 @ 1 62½	Orchard	20 @ 25
do, No. 3	1 45 @ 1 50	Red Top	— @ 15
Choice Milling	— @ 1 67½	Hungarian	8 @ 10
HIDES.		Lawn	30 @ 40
Hides, dry	18 @ 18½	Mesquit	10 @ 12
Wet salted	9½ @ 10½	Timothy	9 @ 10
HONEY, ETC.		**TALLOW.**	
Beeswax, ℔	23 @ 25	Crude, ℔	7 @ 7½
Honey in comb	15 @ 20	Refined	9½ @ 10
Extracted, light	9 @ 10	**WOOL, ETC.**	
do, dark	7½ @ 9	FALL—1881.	
HOPS.		San Joaquin	9 @ 14
Oregon	20 @ 21	do, Lamb	13 @ 15
California, new	25 @ 27½	Southern Fall	9 @ 12
Wash Ter	23 @ 24	do lambs'	13 @ 14
Old Hops	— @ —	Northern, free	16 @ 20
NUTS—Jobbing.		do, defective	14 @ 16
Walnuts, Cal	10 @ 11	Mountain, free	16 @ 18
do, Chile	7½ @ 8	do, slightly seedy	13 @ 15
Almonds, hd shl ℔	8 @ 10	Humboldt & Mendocino	18 @ 21
Soft shell	14 @ 15		
Brazil	10 @ 11		
Pecans	13 @ 15		

Fruits and Vegetables.

[WHOLESALE.]
WEDNESDAY M., January 4, 1882.

FRUIT MARKET.		Peaches	— 11 @ — 11½
Apples, bx	— 75 @ 2 00	do pared	— 14 @ — 18
Bananas, bnch	2 50 @ 4 00	Pears, sliced	— 9 @ — 9½
Cocoanuts, 100	6 00 @ 7 00	do whole	— 7 @ — 8
Cranberries, bbl	14 00 @ 16 00	Plums	— 5 @ — 6
Limes, Mex	4 00 @ 6 00	Pitted	— 13 @ — 14
do, Cal, box	1 50 @ 2 00	Prunes	— 9 @ — 12½
Lemons, Cal, box	1 00 @ 2 50	Raisins, Cal, bx	— @ 2 75
Sicily, box	6 50 @ 7 50	do, Halves	— @ 3 00
Australian	— @ —	do, Quarters	— @ 3 25
Oranges, Cal, bx	1 50 @ 3 50	Eighths	— @ 3 50
do, Tahiti M	— @ —	Zante Currants	— 8 @ — 10
do, Mexican	15 00 @ 20 00	**VEGETABLES.**	
do, Loreto	— @ —	Artichokes, doz	— @ — 50
Pears, bx	1 00 @ 2 50	Beets, ctl	— @ — 65
Pineapples, doz	7 00 @ 8 00	Cabbage, 100 ℔s	— 75 @ 1 00
DRIED FRUIT.		Carrots, sk	— 30 @ — 50
Apples, sliced, ℔	— 6 @ — 6½	Cauliflower, doz	— 85 @ 1 00
do, quartered	— 5 @ — 5½	Garlic, ℔	— 1½ @ — 2
Apricots	— 15 @ — 17	Lettuce, doz	— 10 @ —
Blackberries	— 14 @ — 16	Mushrooms, ℔	— @ — 15
Citron	— 28 @ — 30	Okra, ℔	— 5 @ — 8
Dates	— 9 @ — 10	Parsnips, ℔	— @ — 3
Figs, pressed	— 4 @ — 6	Squash, Marrow	
do, loose	— 3½ @ — 5	Hat, ton	— 10 00 @ 12 00
Nectarines	— 14 @ — 15	Turnips, ctl	— @ — 75

Signal Service Meteorological Report.

SAN FRANCISCO.—Week ending January 3, 1882.

HIGHEST AND LOWEST BAROMETER.						
Dec. 28	Dec. 29	Dec. 30	Dec. 31	Jan. 1	Jan. 2	Jan. 3
30.367	30.358	30.308	[illegible]	[illegible]	[illegible]	30.173
30.236	30.298	30.235	30.172	30.059	30.059	30.059
MAXIMUM AND MINIMUM THERMOMETER.						
56	56	56	51	51	58	56
52	48	49.5	46	45	50	50
MEAN DAILY HUMIDITY.						
90.7	86	82	87	89.3	90.7	89.7
PREVAILING WIND.						
N	NW	NW	NW	SE	SE	SE
WIND—MILES TRAVELED.						
146	130	195	208	145	149	119
STATE OF WEATHER.						
Fair.	Fair.	Fair.	Cloudy	Foggy	Cloudy	Cloudy.
RAINFALL IN TWENTY-FOUR HOURS.						
				.12	.03	

Total rain during the season, from July 1, 1881, 6.78 inches.

Gold, Legal Tenders, Exchange, Etc.

[Corrected Weekly by SUTRO & CO.]
SAN FRANCISCO, January 4, 3 P. M.

SILVER, ¼@¼.
GOLD BARS, 890@910. SILVER BARS, 10@18 ℔ cent. discount.
EXCHANGE on New York, ¼ premium; London, 49½@50; Paris, 5.20 francs ℔ dollar; Mexican dollars, 90½@91.
NEW YORK (4 per cent), 117¾.

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J. P. HULME.

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J. H. CONGDON & CO.,
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DOMESTIC FRUITS
ALL KINDS OF
GREEN AND DRIED FRUITS,
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No. 75 Warren Street, New York.
Commission Merchants in Cal. Produce
REFERENCES.—Tradesmen's National Bank, N. Y.; Ellwanger & Barry, Rochester, N. Y.; C. W. Reed; Sacramento, Cal.; A. Lusk & Co., San Francisco, Cal.

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There has been steady and tolerably rapid advancement made in the growth of a majority of the towns in Colusa, Butte, Tehama and Shasta counties. Especially is this so in the agricultural districts where the land produces at least fair crops in all seasons—wet or dry—as does the land on the Reading Ranch. Those looking for homes in California where diversified farming will pay every year; where wood and water are plenty and easy to be obtained, and other desirable advantages are to be had, should address the proprietor of the Reading Grant.

Some 14,000 out of 26,000 acres of the grant remain for sale at comparatively low rates, in quantities to suit purchasers, on easy terms. Prices range from $5 to $30 per acre. The tract is between two and three miles wide, with the Northern Division of the C. P. R. R. passing centrally through its entire length. Send postage stamp for free circulars containing information about Shasta County and these lands, to the proprietor of Reading Ranch. EDWARD FRISBIE,
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406 & 408 MARKET ST., S. F.

1882.
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The Steamships of this Company will sail from SAN FRANCISCO during the year 1882 as follows:
From wharf, corner of First and Brannan Sts.,
Hour of departure, 2 P. M.,

For Yokohama and Hong Kong.

CITY OF PEKING,	CITY OF TOKIO,
February 11, July 29	January 7, June 22
May 6, October 19	April 1, Sept. 13, Dec. 5

Connecting at Yokohama with Steamers of the Mitsu Bishi Co for Hiogo, Nagasaki and Shanghae. Excursion tickets to Yokohama and return at special rates.

For Sydney and Auckland Via Honolulu

CITY OF NEW YORK	CITY OF SYDNEY.
March 11th July 1st. October 21st.	January 14th, May 6th, August 26th, December 16th.
ZEALANDIA.	AUSTRALIA.
April 8th. July 29th, November 18th.	February 11th, June 3d, September 23d.

Round the World Trip, via New Zealand and Australia, $650.

For New York, via Panama.
ON THE 4TH AND 19TH OF EVERY MONTH,
At 12 o'clock, noon. Taking Passengers and freight for Mexican, Central American and South American ports, for Havana and all West India ports; for Liverpool, London and Southampton; for St Nazaire, and for Hamburg, Bremen and Antwerp
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Sixty Fine Hens

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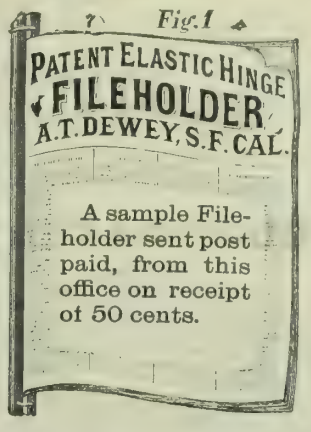
Residence:	Office:
965 West Street, Oakland.	759 Market St., San Francisco
Before 10 A. M., after 5 P. M.	From 11 A. M. to 3 P. M.

Fig. 1



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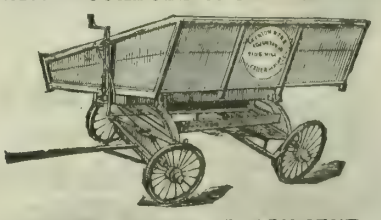

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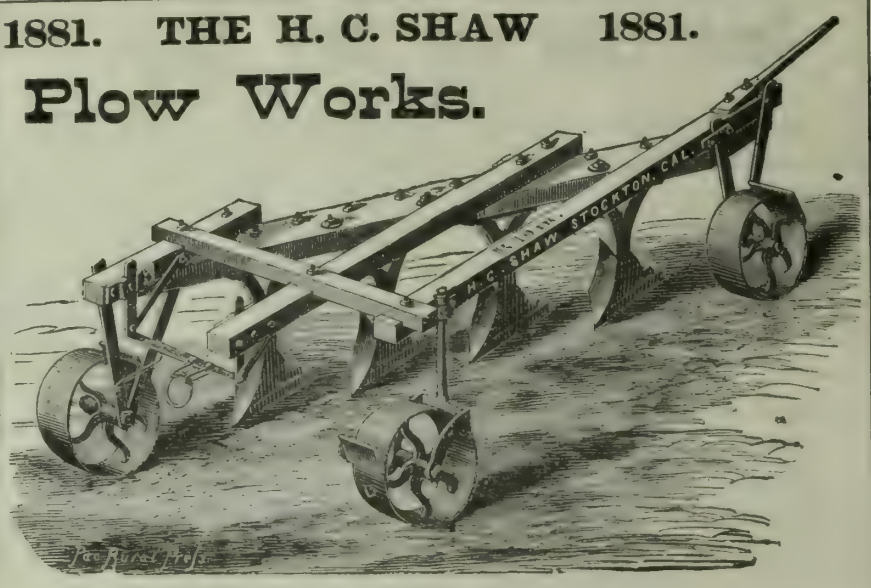

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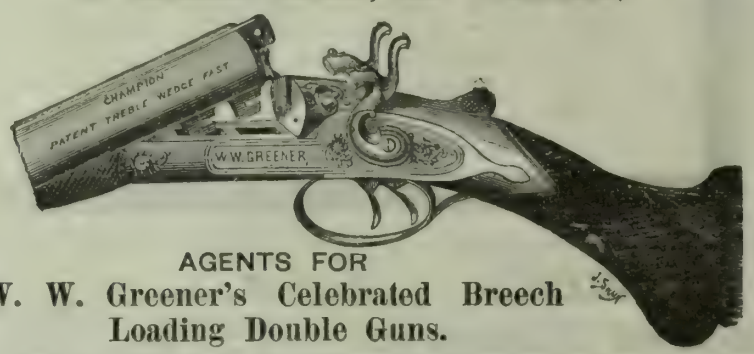

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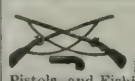

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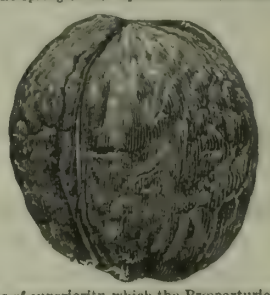

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Fourth—It is a regular and prolific bearer.

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Growers, Importers, Wholesale and Retail Dealers in

FLOWERING PLANTS, BULBS, FRUIT AND ORNAMENTAL TREES, ETC. FANCY WIRE DESIGNS, GARDEN TRELLISES, SYRINGES, GARDEN HARDWARE, ETC.

FREE TO APPLICANTS.—OUR DESCRIPTIVE ILLUSTRATED CATALOGUE OF SEEDS, TREES, PLANTS, ETC.

R. J. TRUMBULL & CO.,
419 and 421 Sansome Street, S. F.

IMPORTED

SEED WHEAT and OATS,

Direct from AUSTRALIA by late steamer. Sold in lots to suit by S. L. JONES & Co., 207 & 209 California St., and

M. WATERMAN & CO.

113 Clay St., S. F.

KELLER'S NURSERIES,

Oakland, Cal.

For Sale Cheap,

Trees, Seeds, Shrubs, Ornamental Fruit and Shade Trees. Nurseries at Mountain View, near Cemetery. Floral, Plant and Seed Depot, Seventh St., bet. Washington and Clay. Send for catalogue and price list. Address KELLER & CO., Oakland, Cal.

TURNER'S NURSERY,

San Bernardino, Cal - - - P. O. Box 275

I have a few thousand left of my half-yearling or June Budded Trees, from 15 to 18 inches, consisting of

Lemon Cling, Smock's Free, Crawfords, etc. Also, Royal and Large Early Apricot.

Price, $15 per 100 this season. I am also prepared to make contracts for the season of 1882-83.

DAVE TURNER.

CYPRESS and GUM TREES.

Blue or Red Gum trees. Monterey Cypress, Acacias, and Pines of all sizes or the seed of each kind, very cheap for cash. Trees in condition to ship long distances. Send $1 in stamps for samples of each kind, with prices. **GEO. R. BAILEY, Berkeley, Cal.**

PEPPER'S NURSERIES.

Established in 1858.

For sale, all kinds of Fruit Trees, Vines and Fruiting Shrubs raised without irrigation. Also, a general assortment of Evergreen Trees and Shrubs, deciduous Flowering Shrubs; Roses in assortment. Conservatory and Bedding Plants in great variety. Send for Catalogue and List of Prices. Address W. H. PEPPER,
Petaluma Sonoma County, Cal.

APPLE ROOT GRAFTS.

For Spring planting. Order now. Address

PHŒNIX BROS. & EMERSON, Nurserymen,

Bloomington, Illinois.

Russell's Hollow Tooth Harrow.

This Harrow is guaranteed to do double the work of any other Harrow and do it better. GEORGE SEANOR, Los Gatos, Agent for Santa Clara Co.

J. P. SWEENEY & CO.,

SEEDSMEN,

Dealers in all Kinds of Field and Garden Seeds at Reduced Prices in Large Quantities.

SPECIALTIES:

ALFALFA, RED AND WHITE CLOVER; AUSTRALIAN, ITALIAN AND ENGLISH RYE GRASS; BLUE GRASS, LAWN, ORCHARD, MISQUIT, RED TOP AND TIMOTHY SEED; CALIFORNIA FOREST AND EVERGREEN TREE SEEDS. ALSO FRUIT AND ORNAMENTAL TREES AT LOWEST PRICES AT OUR

SEED WAREHOUSE.

No. 409 and 411 Davis Street, - - San Francisco, Cal.

W. R. STRONG & CO.,

WHOLESALE

SEED MERCHANTS.

Every description of Field, Garden, Flower and other Seeds, Flowering Bulbs, etc. Can be obtained at our Establishment Fresh, Pure and Genuine, at the Lowest Rates. California Alfalfa, Eastern Clovers and Grass Seeds a Specialty. (Seed and Tree Catalogue sent by Mail free on Application.)

—ALSO—

Wholesale Fruit and General Produce Dealers.

Special attention will be given and prompt returns rendered for Consignments placed with us. Orders for Merchandise of every description promptly and carefully filled at lowest rates.

Our constantly increasing line of customers attest to the fairness of our prices and quality of our goods.

Nos. 106 to 110 J Street, Sacramento, Cal.

GEO. F. SILVESTER,

GARDEN SEEDS. FLOWER SEEDS.

IMPORTER, WHOLESALE AND RETAIL DEALER IN

SEEDS,

Fruit and Evergreen Trees, Plants, Etc.

ALFALFA, GRASS AND CLOVER SEEDS

In Large Quantities and Offered in Lots to Suit Purchasers.

Hedge Shears, Pruning and Budding Knives, Green House Syringes, Etc.

Seed Warehouse, 317 Washington St., San Francisco.

GARDEN SEEDS.

THOS. MEHERIN,

FLOWER SEEDS. FRUIT TREES.

Importer, Wholesale and Retail Dealer in

SEEDS, TREES AND PLANTS.

Alfalfa, Red and White Clover,

Australian Rye Grass, Timothy and Orchard Grass, Kentucky Blue Grass, Hungarian Millet Grass, Red Top, etc.

Also, a large and choice collection of FRUIT and ORNAMENTAL TREES,

BULBS, ROSES, MAGNOLIAS, PALMS, ETC., AT REDUCED PRICES.

Budding and Pruning Knives, Greenhouse Syringes, Hedge and Pole Shears.

☞ Price List ready Jan. 1st. **THOS. MEHERIN, 516 Battery St., San Francisco.**

Agent for B. S. Fox's Nursery.

CHOICE TREES FOR SALE.

We will soon be in receipt of the following varieties of choice yearling trees:

Silver Prunes, Yellow Egg, Coe's Golden Drop, Petite Prune de Agen.

The above trees are all selected and on Peach Roots and free from scale and other injurious insects.

Orders taken now for above trees in lots to suit.

HIXSON, JUSTI & CO.,
316 and 318 Washington St., S. F.

SEEDS!

ALBERT DICKINSON,

Dealer in Timothy, Clover, Flax, Hungarian, Millet, Red-Top, Blue Grass, Lawn Grass, Orchard Grass, Bird Seeds, etc.

POP CORN.

WAREHOUSES:
115, 117 & 119, Kinzie St.,
104, 106, 108 & 110 Michigan St.

Office: 115 Kinzie St. CHICAGO, ILL.

MAKE HENS LAY.

An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable. Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

50 Lithographed Chromo Cards, no 2 alike 10c. Name in fancy type. Conn. Card Co., Northford, Ct.

GUNS

Lowest prices ever known on **Breech-Loaders, Rifles, and Revolvers,**

OUR $15 SHOT-GUN

at greatly reduced price. Send stamp for our New Illustrated Catalogue (B)

P. POWELL & SON 238 Main Street, CINCINNATI, O.

MERRILL'S PATENT REIN HOLDER.

This is a sure and certain preventative to keep horses from running away. **Price $2.50.** Address W. P. MERRILL, Florin, Sacramento Co., Cal.

TREES! TREES! TREES!

—AT THE—

CAPITAL NURSERIES, SACRAMENTO,

—AND—

Orange Hill Nurseries,

Penryn, Placer Co., Cal.

We desire to call attention to our stock of native fruit trees, viz: Petite Prunes, Silver Prunes, Yellow Egg and Coe's Golden Drop Plums, Bartlett Pears, Apricots, Apples, Cherries, Peaches, etc. Also 100,000 Rooted Grape Vines of leading kinds, such as Muscat, Tokays, Hamburgs, Zinfindel, Seedless Sultana, etc. Also ornamental trees and plants, such as Magnolias, Arbor Vitæ, Pines, Cypress, Palms, etc. Orange and Lemon trees, best budded varieties. Also Elms, Maples, Poplars and Mulberries for avenue and street planting—in fact everything usually kept in first-class Nurseries. We have many new and rare Fruits and Plants, for description of which our Catalogue will be mailed free to any address. Office and Tree Depot, I and Seventh streets, near Courthouse, Sacramento. Address all communications CAPITAL NURSERIES, P. O. Box 407, Sacramento, or ORANGE HILL NURSERIES, Penryn, Placer county, Cal. WILLIAMSON & Co., Proprietors.

IMPORTANT TO THE FARMER.

—USE—

Larroche's Fertilizer.

It is manufactured solely of Bones and residues of Meats dried and pulverized in such manner that all the Calcium, Phosphates, Carbonates, Nitrates and Potassium, which are the main assimilators to plants, are entirely preserved in the Fertilizer and render it most valuable to the cultivators of the soil.

Stable manures require frequent irrigation in order to develop its properties; it is expensive, voluminous, and requires great labor to spread and subsoil it; it propagates weeds, worms, snails and destructive animalcules, the pests of the farmer. On the other hand, Bone Powder can be easily handled, transported at low rates of freight, in bags. It checks the propagation of insects and luxuriates the growth of hops, vines, fruit trees, etc.; can easily be spread around the plants and is most efficacious as an impediment to the rapid and terrible encroachment of the PHYLLOXERA.

The Fertilizer should be sown by hand on the ground when it is moist like seed, and then harrowed. About 400 pounds is the quantity for an acre. Price, $40 per ton.

For further information apply or address to,

F. LARROCHE.
Stall 21, San Francisco Market, San Francisco, Cal.

—OR—

SEVIN VINCENT & CO., Seedsmen.
607 Sansome St., S. F. Cal.

CHOICE NEW CROP

ALFALFA SEED.

FOR SALE BY THE

Carload or in lots to suit buyers.

E. J. BOWEN,
Seed Merchant,
815 & 817 Sansome St., S. F.

GRAPE VINES.

CUTTINGS.—Zinfindel, Golden Chassel s, Black Malvoisie, White Riesling, Gray Riesling, Berger, Mission, Muscat Ile, Malaga, etc. **$4 per 1,000,** from well ripened, healthy wood. All selected.

ROOTED CUTTINGS, same varieties, $25 per 1,000; in quantities exceeding 5,000, $22.50 per 1,000.

Rooted Clinton, phylloxera-proof stock, $30 per 1,00

Rooted Wild Riparia, $4 per 100.

CUTTINGS Phylloxera-Proof Taylor, $9 per 1,000 Wild Riparia, $10.50 per 1,000; Elvira, Lenoir, Cynthiana, etc

FRUIT TREES.

Full assortment for family orchard; also Coe's Golden Drop, Yellow Egg, Petite d'Agen, Fellenberg, Green Gage, Columbia, Early Crawford, Foster, Bartlett, etc., at reasonable rates.

JAPANESE CHESTNUTS, very profitable as well a ornamental, $40 per 100.

Trees grown WITHOUT IRRIGATION. No scale bugs or other noxious insects.

LEONARD COATES, Box 2, Napa City, Cal.

LOS GATOS NURSERIES.

I offer the trade this season a LARGE and GENERAL ASSORTMENT of

FRUIT TREES AND SMALL FRUITS.

My trees are healthy, stalky and well grown. Prices low down. Address S. NEWHALL,
San Jose, Cal.

B. K. BLISS & SONS,

Importers, Growers and Dealers in Garden, Field and Flower Seeds, Dutch Bulbous Roots, Summer Flowering Bulbs and Garden Requisites of every description. Catalogues mailed to all applicants. Address

B. K. BLISS & SONS, 34 Barclay Street, N. Y.

JAMES HANNAY'S NURSERY,

East San Jose, Cal.

I offer for sale, at low prices, a well assorted, healthy, and well grown stock of one and two-year-old Nursery Stock. Prompt attention given to all orders.

Address JAMES HANNAY, San Jose, Cal.

SMALL FRUIT PLANTS

OUR SPECIALTY.

NEW AND OLD VARIETIES OF –

STRAWBERRIES,
RASPBERRIES &
BLACKBERRIES.

Large and select stock of

Monarch of the West, Sharpless, Capt. Jack, Miners' Great Prolific, Bidwell, Etc.,

AT LOW RATES.

- NEW VARIETIES OF --

Peaches, Plums, Apricots,

AND OTHER FRUITS.

☞Send for Circular.

C. M. SILVA & SON,
Newcastle, Placer Co., Cal.

Duroc, or Red Hogs.

The undersigned are making a specialty of raising this celebrated breed of hogs for breeding purposes. They are gentle thrifty and of very rapid growth, and better adapted to this climate than any other breed of hogs. We have hogs of this breed now upon our ranch, 11 months old, weighing over 400 lbs each. N W Spaulding, U S sub Treasurer San Francisco, killed one of these hogs Dec 14, 1881, at the age of 16 months, that weighed 683 lbs gross and 584 lbs dressed.

On Dec 22, 1881, Messrs Zimmerman, Strelse & Co, of the Bay City market, S. F., killed one weighing 1018 lbs. net when dressed, 3 years and 3 months old. We are prepared now to ship to any part of this State these pigs 6 to 12 weeks of age. For prices and circulars address,

HINCKLEY & GETCHELL,
Laurelles Ranch, Monterey, Cal.

VICK'S ILLUSTRATED FLORAL GUIDE

For 1882 is an Elegant Book of 150 Pages, a Colored Frontispiece of Flowers, and 1000 Illustrations of the choicest Flowers, Plants and Vegetables, and Directions for growing. It is handsome enough for the Center Table or a Holiday Present. Send on your name and Post Office address with 10 cents, and I will send you a copy, postage paid. This is not a quarter of its cost. It is printed in both English and German. If you afterwards order seeds deduct the 10 cents.

VICK'S SEEDS are the best in the world. The FLORAL GUIDE will tell how to get and grow them.

Vick's Flower and Vegetable Garden, 175 Pages, 6 Colored Plates, 500 Engravings. For 50 cents in paper covers; $1.00 in elegant cloth. In German or English.

Vick's Illustrated Monthly Magazine, 32 Pages, a Colored Plate in every number and many fine Engravings. Price $1.25 a year; Five copies for $5.00. Specimen Numbers sent for 10 cents; 3 trial copies for 25 cents.

Address, JAMES VICK, Rochester, N. Y.

FOR SALE.

50,000 Grape Cuttings

20 INCHES LONG,

Of the following varieties Black Malvoise, Black Hamburgh, Rose of Peru, and White Muscat of Alexandria. These cuttings are strong and vigorous canes and entirely

FREE FROM PHYLLOXERA.

Will be delivered at Railroad Station, at Niles, Alameda county, at the rate of $6 per thousand. For further particulars apply to E. CLARKE,
Niles, Alameda County, California

ONLY $1. FOR ANY ONE OF THE Choice Collections of Roses, Shrubs, Greenhouse Plants, Fruit Trees, Grape Vines, Small Fruits, Seeds, &c. For example: 12 choice Roses, $1; 12 Tuberoses, $1; 12 Carnations $1; 12 Geraniums, $1; 20 Verbenas, $1; 8 Apples, $1; 6 Peach, $1; 8 Grapes $1; 25 Raspberries $1; 10 Sweet Chestnuts, $1; 100 Hardy Catalpa, $1; 25 packets choice Flower Seeds, $1. Hundreds of others CHEAP, and many **NEW AND RARE!** and the CHOICEST collection of **60 DIME** Plants. All mailed postage paid, and safe arrival guaranteed. A Catalogue of about 100 pages FREE. 28th Year. 18 Greenhouses. 400 Acres.

The STORRS & HARRISON CO., Painesville, Lake Co., Ohio

DIVIDEND NOTICE.

The German Savings and Loan Society.

For the half-year ending December 31st, 1881, the Board of Directors of THE GERMAN SAVINGS AND LOAN SOCIETY has declared a dividend on Term Deposits at the rate of Five (5) per cent. per annum, and on Ordinary Deposits at the rate of four and one-sixth (4 1-6) per cent per annum, free from Federal Taxes, and payable on and after the 9th day of January 1882. By order,

GEO. LETTE, Secretary.

C. I. HUTCHINSON. H. R. MANN.

HUTCHINSON & MANN,
INSURANCE AGENCY

322 and 324 California St., and 302 and 304 Sansome St.,

N. E. Corner of California and Sansome Sts, SAN FRANCISCO

W. L. CHALMERS, Z. P. CLARK, J. C. STAPLES, Special Agents and Adjusters.

CAPT. A. M. BURNS, Marine Surveyor. F. T. HOYT, City Surveyor.

HUTCHINSON & MANN, Agents for Pacific Coast.

Cash Assets Represented, $23,610,723.

Girard Insurance Company (Of Philadelphia), Assets, July 1, 1881, $1,155,809

St. Paul Insurance Company (Of St. Paul), Assets, July 1, 1881, $854,305.

Watertown Fire Insurance Company (Of N. Y.) Assets, July 1, 1881, $995,437.

New Orleans Ins. Association (Of New Orleans). Assets, July 1, 1881, $573,216.

Peoples' Insurance Company (Of Newark), Assets, July 1, 1881, $475,978.

Teutonia Insurance Company (Of New Orleans), Assets, July 1, 1881, $375,291.

Dwelling House Underwriters (Of New York), Assets, July 1, 1881, $2,358,068

La Confiance Insurance Company (Of Paris), Assets, January 1, 1881, $6,679,565

Fire Insurance Association (Of London), Assets, January 1, 1881, $1,349,943

MARINE.

London Provincial Marine Ins. Co. (Of London) Capital and Assets, Jan. 1, 1881, $6,278,362

La Fonciere Marine Insurance Co. (Of Paris), Assets, January 1, 1881, $2,090,478

Prepared Especially for Killing

Squirrels, Gophers, Rats, Ants, Moths,

WEEVILS, PHYLLOXERA, SCALE LICE, ETC.

Sold by Druggists and dealers in general merchandise. May also be obtained direct from the manufacturer,

JOHN H. WHEELER.

Manufacturer also, of Sulphocarbonates, Disinfectants for Vine Cuttings, Diseased Vines, Trees and Plants in general. Vineyards treated for Phylloxera; injectors for Bisulphide Sulphur for Vineyards, and all kinds of Fertilizers furnished.

Office, 111 Leidesdorff Street, San Francisco.

The Merigot Pump and Spraying Nozzle.

Largely used for Applying Insecticides in Orchards around San Jose.

FAVORABLY MENTIONED AS SERVICEABLE AND REASONABLE IN PRICE BY THE SPEAKERS AT THE SACRAMENTO CONVENTION.

☞ The Merigot Spray-Tip Nozzle is the best known. –*Dr. Chapin's Address.*

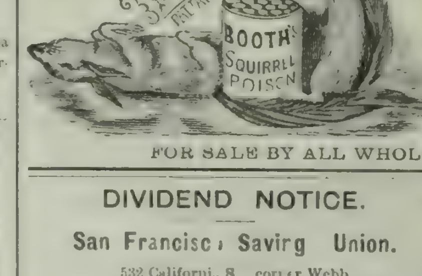
The pump is Well Made with Metal Valves. Price, $12.

WESLEY FANNING, Co-Operative Workshop.

277 to 281 St. John Street San Jose, Cal.

CHEAPEST. BEST.

BOOTH'S SURE DEATH



To Squirrels, Gophers, Birds, Mice, Etc.

☞Endorsed by the Grange and all others who have used it.

INFALLIBLE SQUIRREL and GOPHER EXTERMINATOR.

STRENGTH INCREASED. PRICE REDUCED.

Put up in 1 lb., 5 lb., and 5 gallon tins. Manufactured by

A. R. BOOTH, Eagle Drug Store,
San Luis Obispo, Cal.

FOR SALE BY ALL WHOLESALE AND RETAIL DEALERS

DIVIDEND NOTICE.

San Francisco Saving Union.

532 California St., corner Webb.

For the half year ending with December 31, 1881, a dividend has been declared at the rate of five (5) per cent. per annum on Term Deposits, and four and one-sixth (4 1-6) per cent per annum on Ordinary Deposits, free of Federal Tax, payable on and after Wednesday, January 11, 1882.

LOVELL WHITE, Cashier.

OATS RUSSIAN WHITE Best in ... 100 bu. per acre. Hardy, prolific, rust proof. 1 lb., postpaid, 50c.; 3 lbs., postpaid, $1.00; ½ bu. by freight or express, not prepaid, $1.25; 1 bu., not prepaid, $2.00. New bags 25 cents each, extra. Ask your merchant for circular. Address,

D. M. FERRY & CO., Detroit, Mich.

50 All New Style Chromo Cards no two alike, name on 10 cents. Clinton Bros., Clintonville, Con

KNABE PIANOS

"For beauty of tone, touch and action, I have never seen their equal. –*Clara Louise Kellogg.*

"THE KNABE" is absolutely the Best Piano made.

A. L. BANCROFT & Co.,
721 Market Street, San Francisco,
Sole Agents for the Pacific Coast

Dewey & Co 252 Market Street, **Patent Agts**

SEMI-ANNUAL STATEMENT

OF THE

Grangers' Bank of California,

JANUARY, 1882.

Amount of Capital Actually Paid in U. S. Gold Coin, Surplus Paid Up and Reserve Fund - - $534,101.99

State of California, City and County of San Francisco. John Lewelling and A. Montpellier being duly sworn, severally depose and say that they are respectively the Vice-President and Cashier of the Grangers' Bank of California above mentioned, and that the foregoing statement is true.

(Signed) JOHN LEWELLING, Vice-President.
(Signed) A. MONTPELLIER, Cashier.

Subscribed and sworn to before me this 4th day of January, 1882.

(Signed) GEO. T. KNOX, Notary Public.

ASSETS:

Loans on Wheat, Real Estate and other securities	$1,681,259 69
Due from Banks and Bankers	21,082 68
Real Estate—(Bank's interest in Grangers' building)	77,200.00
Other Real Estate	27,772.94
Office furniture, fixtures and safe	3,000.00
Interest accrued	23,830 99
Cash on hand	83,430.76
Total	$1,917,577.06

And the said assets are situated in the following counties, to-wit: Alameda, Butte, Contra Costa, Colusa, Fresno, Merced, Monterey, Inyo, Kern, Placer, Stanislaus, Sutter, Solano, Sonoma, San Francisco, Tehama, Tulare and Yolo.

LIABILITIES:

Capital Stock paid in gold coin	$ 500,000.00
Surplus paid up, and reserve fund	34,101.99
Due Depositors—Banks and Bankers	1,282,896.31
Bills payable Mortg'e assumed on real estate	40,000 00
Undivided net profit (1881)	60,578.96
Total	$1,917,577.06

State of California, City and County of San Francisco. John Lewelling and A Montpellier being each duly sworn, severally depose and say that they are respectively the Vice-President and Cashier of the Grangers' Bank of California above mentioned, and the foregoing statement is true.

(signed) JOHN LEWELLING, Vice President.
(signed) A MONTPELLIER, Cashier

Subscribed and sworn to before me, this 4th day of January, 1882.

(Signed) GEO. T. KNOX, Notary.

VIZELICH'S
Insect Destroyer

AN IMPORTANT INVENTION

[From a Stockton Paper]

Nicholas Vizelich had his Insect Destroyer on exhibition to-day in Courthouse square before a crowd of admiring farmers. The Destroyer is a box shaped structure, five feet wide, and mounted on wheels. The machine is supplied with two force pumps, one forward and the other aft, with a small smoke-stack in the middle. The liquid with which the scale bugs and the phylloxera are vanquished is a composition specially prepared by Mr Vizelich, and is stored within the box. In a compartment underneath the liquid is a furnace for heating it so as to melt the frost off the trees and thereby get at the bugs and insects. An additional supply of the liquid may be carried in a barrel mounted on wheels. With the pump the water may be sent through a garden hose to a hight of upwards of 50 ft. Mr Vizelich gave partial illustrations of the working of his invention to-day in the square, and threw a stream to the top of the cedars holding the hose in one hand and working the pump with the other. The new invention worked excellently, and the farmers who watched it operate said that it would not be many months before every orchard and farm in the country would have one of Vizelich's Insect Destroyers. They can be manufactured of any size, from those designed to be worked by one man to a machine large enough to be worked to advantage by a dozen men. The warm liquid runs into the crevices in the bark of the trees and dislodges and kills the vermin.

"**VIZELICH'S DESTROYER**" will be made in three sizes, one of 65, one of 125 and one of 500 gallons for field use.

For full information address the inventor,

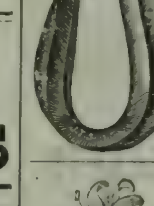
N. VIZELICH,
Stockton, California

J. T. STOLL'S

OPEN TOP

IMPROVED HORSE COLLAR

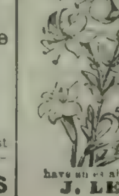
Patented Jan 18th, 1881.



It saves your horse's neck.
It is the best Collar in use.
It can be adjusted to any shape or any animal's neck.

☞Send for sample.☜

JOHN T. STOLL,
Harness and Saddle Manufacturer,
NO. 610 K ST., SACRAMENTO.



SEEDS BULBS, PLANTS.

Beautiful Illustrated Catalogue Free.

The best list of new, rare and beautiful flowers ever offered. New Seeds for Tuberoses, Amaryllis, Roses, Carnations, 100 varieties of Lilies, Choice Flower and Vegetable Seeds, Seeds of House Plants, &c. All seeds except ... are ... in FIVE CENT PAPERS. Everything warranted true to name. See Catalogue; prices are low. The following sent by mail postpaid. 100 Gladiolus 10 sorts named 50c. 12 Pearl Tuberoses, 85c. 10 Lilies, 10 sorts named, $1.50. All fine sorts and large bulbs. Remit currency or postage stamps. My goods have an established reputation and go to all parts of the world.

J. LEWIS CHILDS, QUEENS, N. Y.

PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, JANUARY 14, 1882. Number 2

Eucharis Amazonica.

We give on this page a handsome engraving of the *Eucharis Amazonica*, a plant well known to florists and prized by them, and worthy of more general attention on the part of indoor plant growers. It is described by some as approaching nearer to an "evergreen bulb" of any in cultivation; that is, its period of rest is short, and it may be forced into bloom by right handling at almost any time the grower desires. The flower is especially desirable in San Francisco at Easter, as its beautiful white serves well for decorations, and it is popularly called the "Easter lily." In New York city, the Eucharis flowers are in great demand during the holidays, and sell at wholesale at $50 per 100, which is nearly double the price of white camellias.

The engraving which we use is reproduced by permission from the excellent illustrated catalogue of J. M. Thorburn & Co., the well-known New York seedsmen. They give the following points concerning the successful growth of the Eucharis: With a moderate stock of plants, the Eucharis can be had in flower at almost any time, and when it is considered that the flowers are delightfully fragrant, more than four inches across, and that they are like large, pure white stars, some idea may be formed of its value. Some complain that the Eucharis is not easily flowered; but this is not true. It does well in light soil, consisting of loam, peat and a little sand, all enriched with old manure. It likes an abundance of water, with good drainage, a moist, warm atmosphere, and a position near the glass, but shaded from scorching sun.

Rand, in his book on bulbs, alludes to the Eucharis as a splendid plant of recent introduction. It is a thick-leaved, evergreen, bulbous plant of the Amaryllis tribe; a native of Grenada, requiring stove treatment, but very free flowering. It may be forced into bloom at any season. The flowers are pure white, large and showy, on footstalks just above the leaves. *Eucharis Amazonica* or *grandiflora* is the species shown in the engraving, and is a native of South America. It is one of the finest of the Amaryllis family, and has the merit which so few have, of blooming with, and the flower seeming to conform to, the foliage.

PINKEYE. — Pinkeye lingers around the stables of the metropolis, but we do not hear of its outbreak in the interior, probably owing to the fact that country horses have better air and are healthier than the occupants of the crowded city stables. It is stated that within the past few days as many as twenty-four horses belonging to the City Cab and Carriage Co. have been suffering from the disease, but half of them have recovered, with the exception of one case which proved fatal, and in that instance the animal was previously unsound. Twelve are still afflicted. Fifteen horses of the North Beach and Mission Railroad Co. are suffering from the disease. They had thirty-five in the hospital at one time. The Omnibus Railroad Co. had forty-five horses down with the disease last week. At present they have thirty-five sick. One case proved fatal. It is reported that the stables at Claus Spreckles' sugar refinery, on Brannan street, and also a stable on Sixth street, are badly infected. The symptoms vary, but the most common are swelling of the limbs, drowsiness, loss of appetite, running from the eyes, which become inflamed and turn a pinkish color. There are several other symptoms, but these are sufficient to indicate the disease. The best remedies are good ventilation in the stables, dry, clean beds, plenty of sunshine and wholesome food. Other remedies and methods of treatment were given in the RURAL of December.

SONOMA COUNTY.—C. H. Cooley, a sterling farmer of Sonoma county and a good friend of the RURAL, writes us that they have had a glorious winter so far in his region and prospects were never better than now. At which we rejoice.

OATS AT THE NORTH.—It is not surprising that the oat growers of the North have had a happy holiday season. A dispatch from Seattle, on Monday, gives the following particulars: The oat growers of Puget Sound have done well with last season's crop. The yield here is enormous per acre, and the production is of the best. The surplus of 1881 amounted to about 200,000 bushels. This has been all taken and substantially all shipped. Never before were oats in better demand. The high prices prevailing in San Francisco have had their effect here, not only in cleaning up the market of its surplus, but in raising the price of wheat, which is now $2 per cental. The farmers realized handsomely from their last crop, and are jubilant. Their preparations for the coming season exceed those of all previous years, and it is certain that the acreage to be placed under cultivation will be largely increased.

BLOOM AND FOLIAGE OF EUCHARIS AMAZONICA.

A COMPANY was recently incorporated in this city, for the manufacture of plug tobacco, under the name of the Seal Rock Tobacco Co. For that purpose, 30 experienced colored men are en route to this city from Kentucky. It is the intention of the managers of the factory to employ from 200 to 300 white boys and girls in the manufactory. All the tobacco leaf will be imported.

BLOWER'S RAISINS.—The neatest thing we have seen in the form of a fancy sample package of raisins has been contrived by Mr. R. B. Blowers, of Woodland, and consists of a small box, made of the wood of the "big trees," filled with the choicest raisins, neatly papered and covered with a chromo of the home and vineyard of the manufacturer. The wood of the famous big trees will be in itself a curiosity in all parts of the world, and will be preserved, and call to mind California raisins long after they have disappeared from view. These small boxes come within the size of packages by mail, and thus it will be easy to send distant friends a sample of one of our most enjoyable products.

THE DALLES *Times* says that the Oregon Railroad & Navigation Co. have a track laid from the lower Cascades up to and across Hood river; also from Dalles to a point six miles below, where there will be a bridge 700 ft. long and 85 ft. wide.

SPECIAL dispatches from points in Ireland show a great development of the latest form of lawlessness, namely, Land League hunts. A number organized Friday. In rare cases, where the authorities had not had time to interfere, quantities of game were destroyed and preserves damaged.

The Wheat Outlook.

Everything is now contributing to an advanced feeling in wheat, and unless rain comes speedily it would not be surprising to witness a sharp and considerable improvement in value. Added to the present chance of a decreased production in this State, there comes new evidence of the shortage of the European supply. Heretofore Russia has been shaken at the wheat holders to frighten them with the fear of large supplies being forthcoming. It has been understood for several months that the yield of 1881 was much smaller than that of 1880 in all important regions except Russia—and now it is shown that Russia will not have a great surplus over her own wants.

The latest information on the crop of Russia comes from St. Petersburg by cable, and the following is a summary of the announcement: It is very difficult in Russia to arrive at the truth in regard to any question affecting the internal condition of the country. This year's harvest was undoubtedly very much better than that of the preceding year, but there is reason to believe instead of being a good one, as both the government and private reports made out, it fell short of the average. Even this much can only be said of the grain, for the hay crop was simply a failure, and owing to the inaction of the authorities and indigence of the people, the effect upon the live stock of the country is likely to prove disastrous. Several weeks ago, before the closing of navigation, an agricultural commission sent in a memorial to the Home Ministry, calling attention to the danger, and recommending prompt action on the part of the Government, but as usual this document was tossed about from one department to another, till the time for action had gone by. The water-ways are now locked up with ice, and no efforts can prevent serious loss of live stock and further impoverishment of the country, already suffering from a series of bad harvests. A gentleman from Samara reports that the Baskirs last year lost two-thirds of their stock, and it is to be feared that they will now be reduced to absolute beggary.

LIEUT. C. H. KILBOURNE, of the Signal Service Bureau, who has been making investigations as to suitable locations for Signal Service stations on this coast, suggests the propriety of establishing a station at Cape Flattery, and one at the mouth of the Columbia river, or on Tillamook rock. This conclusion was reached from observations, which showed that the general direction of storms upon the Pacific coast is from west to east, with a southeasterly tendency, thus locating the storm center about Victoria, in British Columbia. In establishing the stations mentioned, telegraphic connections with the Western Union will have to be made, necessitating the laying of a wire along the Columbia river for a distance of 20 miles. A submarine cable four miles in length will also have to be laid.

MUSIC IN THE MEAT TRADE.—There have been all sorts of pranks played by a part of the slaughterers during the last few weeks, for the elevation of meat prices, to the discomfort of the retailers. The sheep butchers belonging to the combination having raised the price of mutton to six cents per lb., while the non-combination butchers are selling for five cents, a combination of retailers has been formed to fight back. Six retail butchers have signed an agreement not to patronize, under a forfeiture of $1,000, any butcher who in a month from now shall charge the increased price for mutton. It is expected that five more of the largest retailers will enter into the agreement, and the mutton market may then be looked to to furnish some lively capers, so to say.

ORDERS have been received at New Orleans from San Francisco to provide freight room in March and April for 180,000 bushels of wheat for Great Britain. This wheat is to be shipped from California to New Orleans by the Southern Pacific railroad, thence by steamer to its destination.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Jottings on Los Angeles.

EDITORS PRESS:—Nothing, perhaps, is more difficult than to obtain a correct idea of a place from a description. One who takes interest enough in a locality to write about it is only too apt to exaggerate, even unintentionally, and while some are strongly condemnatory, most writers rise early to sing the praises of their favorite spot. Nor are the readers altogether blameless. They take an article on some town which usually exaggerates the good or the bad of the place, but whether it be exaggerated or not, they take up the thread with their imagination where the author leaves it, and unconsciously, by adding a little here and there of what they wish for and hope for, to the account, and glossing over some of it which they do not care to think about, they come, in the end, to think that the author has written much better of the place than really is the case.

In condemnatory descriptions and their interpretations it is the same. Who has not heard, for instance, of the smells of Cologne? But I venture to say that few travelers have been there who have not been pleasantly disappointed in this respect. All German towns smell badly, and Cologne's notoriety has only arisen because some clever person noticed a bad odor when buying a bottle of perfume.

I shall never forget my own disappointment on first seeing the celebrated Riviera at Nice. I had read about the Cornice road which ran along the coast—the wonderful road which was built for 100 miles or more in the rock hanging over like a cornice. I had read of the olive and orange trees, and of the palms which were taken from there to Rome for gala days. It is true that no one had ever written that there was a natural vegetation on the Riviera at all remarkable for beauty; nor had I considered that in a country where the road had to be built like a cornice there could not be a great deal of space proper for cultivation.

However, what I expected to see was a lovely mountainous country, all green with luxuriant woods, with the blue sea always whispering softly on the shore; bright sunlight shining on picturesque towns, surrounded with groves of tropical trees and stately palms. So, from the account of a place, with a fair climate, where semi-tropical trees would grow, my imagination had walked me off into a lovely country, where everything was fully tropical, except that it was not too hot. What I did behold on arriving off Nice, was a heavy sea breaking over the vessel, for one of their debilitating siroccos was blowing. On shore there was a long range of desolate mountains, which are never green. At last the wind went down, and we came into the harbor. A miserable place. It reminded me of the "Basin" in Baltimore. With care you could turn a medium-sized boat around in it if the fishing boats moved out. From the middle a biscuit could be thrown on either quay, still there was no wharf, and we all had to go ashore in a little, dirty hogshead of a boat over the foulest water in the world. On shore the population seemed principally beggars or persons about to become brigands. No one had anything to do; and as for the orange groves, they were enclosed in high concrete walls, and you might believe in them, but there was no such thing as seeing them. And to cap the climax, I had been there but a few days, when we had a tremendous norther, called in that country "mistral." It seemed the coldest wind I ever felt, and wherever there was a little water, to borrow an Irish expression, it was ice. I concluded that the stories about the Riviera had too much the tint of the rose. I lived there for some time, however, and after a while found that the climate really was an exceptionally fine one. I obtained permits to see the gardens of semi-tropic fruits. I enjoyed the grand promenade by the sea, with its music in the afternoon; the casino where were papers and magazines from all quarters of the globe, and point after point of good qualities came into view, until at last I liked the place very much. So he who reads about Los Angeles intending to come here, should keep a tight line on his imagination, and besides not forget to drop a grain of salt or two in his descriptions.

Los Angeles has suffered like all celebrated places from its too ardent friends, but it can carry a good deal of praise with equanimity. The county has all the peculiarities of the California coast valleys, except that being further south it is milder, and it is also exceptional in being protected from the north winds by a number of tall ranges of mountains running east and west. The climate in its essentials is to be found nowhere beyond California; and of the California climates it is the most delightful, being free alike from the cold northers prevalent in some places, and from the raw summer winds common in others. Some persons, carried away by the many charms of the county, aver that it is exempt from all the unpleasant manifestations of nature; but this is not exact.

The Weak Points.

In the history of Los Angeles county, by Thompson and West, there are accounts of earthquakes, thunderstorms, floods and droughts. Of these mistakes in our natural arrangements, the earthquake of 1812 is the most notable. It shook down the church of San Juan Capistrano during the feast of the Purissima. Thirty-six people were killed, and a number injured. Slight shocks have occurred since then, but no damage was done. There have also been several severe thunderstorms recorded here during the century, one of which, in 1867, killed four horses at the Half Way house on the road to San Pedro. Droughts and floods have also occurred several times. Then, from year to year, we have curious dry, very dry winds, which blow sometimes an hour or two, and sometimes three days. They are not cold winds, and seldom blow hard enough to do any damage. Once or twice in a decade, however, they become unruly, and twist off branches and fruit, and blow sand and dust about in a very unpleasant manner. Sometimes, too, the Mojave desert sends its temperature over the mountains as a malicious reminder of the future, and it is very hot here for three or four days. When we have these eruptions of heat they are of a dry, stimulating nature, very different from the soggy, debilitating heat usual during eastern summers, and in those of Europe as well. It is also cold here at times, and once in 1878, ice is said to have formed in a bucket one and five-eighths of an inch in thickness. During the summer ocean fogs come in occasionally, lying in the valleys at night and clearing away in the day. Invalids have to look out for them, but the fog is not an unmixed evil, as it refreshes vegetation and makes the nights cool and pleasant. These constitute, to the best of my knowledge, the climatic weaknesses of the locality. No place is without some drawbacks of this kind, and the

Good and Unique Qualities of Los Angeles County

Overbalance the bad features more than do those of any other celebrated climate in the world. The Riviera of France and Italy has not our summer nights, so cool and refreshing, but it has the bitter Mistral wind from the north; the debilitating Sirocco which sweeps away so many invalids in the spring, and a long hot summer and unhealthy fall.

Here in Los Angeles it is always healthy; we are at once little affected by the respiratory troubles of the north and not at all by tropical diseases, and malaria is rare indeed, being confined to the river bottoms. Malaria, however, is one of those diseases found in no locality. Even in parts of Maryland, where it is easy to perceive the blight on the whole population, it is impossible to arrive at the exact spot where the trouble originates; it is always about two miles further on. Here the bright countenances of the people speak for themselves, and that is the best of all testimony. Now, that I come to think of it, I cannot see exactly why people should die in such a place as this. If there was any such thing as contenting mankind they would not. But I think that one ought naturally to live longer here and maintain vigor than anywhere else. Hittell has put so concisely our climatic advantages that I cannot do better than quote him:

"One of the chief advantages of California is its admirable climate. After a careful study of all the accessible books relating to the subject—and their number is large—I claim, and believe it to be more conducive to health and comfort, and intellectual and physical activity, than that of any other country in the world. Other climates may be better, but if so, their meterological statistics are not within my reach and they may belong to countries objectionable on account of their isolated istuation, or the semi-civilized condition of their inhabitants.

The climate of the valleys of California is unlike that of every other country, and particularly dissimilar to that of the American States east of the Rocky mountains, resembling in general character that of Spain. Its chief peculiarities as distinguished from the Eastern States are, that the winters are warmer, the summers—especially at nights—cooler; the changes from heat to cold not so great nor so frequent; the quantity of rain less, and confined principally to the winter and spring months; the atmosphere drier; the cloudy days fewer; violent windstorms, thunder, lightning, hail, snow, ice and the aurora borealis rarer; and the winds more regular."

The result of Mr. Hittell's reading has been confirmed in my experience. Neither in America, Europe, Africa, Ceylon, the Spice Islands, Australia, the West Indies, nor in the delightful kingdom of Kalakaua have I found the good to outweigh the bad so markedly as in southern California.

Becoming a Californian.

One who comes here to reside, soon becomes identified with the country, and before you know it, you are an ardent Californian, and so recognized, and growing up, as they say, with the country. This is not the case in other foreign resorts. Their language, customs, diet and thoughts are different from ours. One can never become quite a Frenchman, nor an Italian, nor a Spaniard; and even if a person did succeed in thinking of themselves as belonging to one of these nations, still the people of that nation would always look on the person as an outsider, and the distinction would always be felt, if not expressed.

The languages, too, are only the languages of a cast. You learn French and go to Nice, and at once find that the mass of the people speak a patois, or dialect, and for the most part only speak French as our Chinamen speak English. Italy is worse yet, for in many parts of the country Italian is not understood at all. Their society is founded on entirely different principles from ours. To be a producer or a laborer there is dishonorable, or rather disqualifies one for the higher circles. A person may write a book, but he cannot be a merchant, nor plow an acre of land and move in the best society. Idleness is honorable and high-toned; and as man must kill time in some way, these Europeans kill theirs in gambling, horse racing and intriguing with women. It is the very pink of gentility to be too intimate with some other man's wife. Here it is quite the other way; and even when a man has no real occupation, he usually trumps up some story about some business he has done, or thinks of doing; and as for spreeing and gambling, they are not looked on leniently at all.

As yet, in Los Angeles Co. we fail a little on society. There are now doubtless sufficient intelligent and sympathetic people to furnish some brain-furbishing gatherings, but we are all unorganized and have not got together yet except in a very small way, but this will soon be changed, is now being changed, and we will have our casinos and exchanges of ideas and books and society generally as well as Newport or Nice. Apart from any commercial or agricultural success, this country is destined to a great future as a residence of well-to-do people who will come here to live permanently, or at least to escape the rigors of less kindly climates during the more trying seasons, whether it be the winter of the North or the summer of the South. The Riviera of Italy and France extends about 175 miles from Hyeres to Genoa, and nearly every foot of available land is taken up with a villa, a hotel or a town. There you see the winter palace of the Russian and German, and of Englishman and American, and crowds of tourists bent on health or pleasure. Yet the Riviera is but a winter climate, and with ever-increasing drawbacks. It is a continuous village crowded between the mountains and a tideless sea into which the drainage is conducted, and stagnating there, makes the shore often enough an unpleasant place to be. If this sheltered nook has become so great a resort, so must our region, which is superior to it in all natural advantages. It surpasses us only in the additions man has made, such as beautifully planted promenades, drives and parks, for the invalid and stranger to wander in, and bands of music, theaters, casinos and reading rooms to amuse them. These we can add, and already the Sierra Madre villa, Santa Monica, Fulton Wells, and the hotels of Los Angeles have made a good commencement, and the work will go on.

Meteorology.

From the United States Signal Service report for the years 1878 and 1879, which is the latest report I have are taken the following figures, showing the temperature of Los Angeles city at that time:

LOS ANGELES MEAN TEMPERATURE—1878.

July, 67; August, 68.2; September, 65.5; October, 62.1; November 57.5; December, 53.

LOS ANGELES MEAN TEMPERATURE—1879.

January, 51.1; February, 54.8; March, 57.7; April, 58.2; May, 61.8 June 65.8; year, 60 2.

The maximum temperature in that year for July was 88° and for August 89°, but in the month of September we heard from the Mojave and had three days respectively 103°, 102° and 101° as a maximum temperature. The minimum of the year occurred in January, and was 36°. Comparing this with the temperatures of some other celebrated resorts as taken, not by a government officer, but by physicians or others financially interested, we find Los Angeles to stand pretty well, as witness the following table:

Average Temperature.

	Mean Annual Temp.	Three Winter Months.	Three Summer Months	July.	Jan'y
Cairo	72.1	58.5	85.1	85 8	58 1
Ceylon Hills	70.1	69.3	69.5	69.8	69 1
Algiers	64	55	77		
Rome	60.7	48.9	72 1	73 3	47 6
Nice	59 4	47.8	72.2	73.5	45 8
Honolulu	76				
Jacksonville, Florida	69.3	56 3	81 8		

Other Marks of Climatic Advantages.

Figures, however, convey a very imperfect idea of a climate. Island climates, for instance, which on paper look the best are invariably debilitating, where the temperature is warm enough to overcome their dampness in making the air comfortable. Here, in the southern counties of California, there is an advantageous climatic condition, as shown by the vegetation and animals not to be found in any other locality with which I am acquainted. The apple and the orange thrive together; bananas grow by pears. Pomegranates, grapes, apricots, pears, guavas and strawberries, and in fact all semi-tropic and northern fruits and vegetables do well, and one about as well as the other. Just now is the season for oranges, yet a few moments ago I was picking ripe strawberries and tomatoes in the open air, on the 3d of January.

Cows do remarkably well here, and milk is therefore always cheap and good, and the butter made from it is excellent, but the cheese is not so good. All animals do well, as seen in Baldwin's runners, L. J. Rose's trotters, Barretto's Jersey cattle and Johnston's Durhams, besides the successes of a great many locally-noted breeders. Poultry does well, also, and game and fish are cheap in the markets. So we produce and have of the best here, meat, milk, butter, eggs, poultry, etc. As a contrast to this state of things, we may look at Florida, the only other climate in America which competes very with us. They raise cattle there, but they are poor. On the hotel bills of fare they always used to have, "New York roast beef," "Philadelphia mutton with caper sauce," etc. This was done because the native meat was so bad that no one would eat it unless it was given a Northern name, when, of course, it tasted better. The butter there always came from the North, and invalids had great trouble to obtain the milk they needed. The rainfall there is over 50 inches per annum compared to our 15, and there are always plenty of green places, still cattle do not thrive, and Florida is only in the same position in this respect as all the other semi-tropic resorts; and these, by the way, are not many. California is the only exception to the rule.

Those coming to Los Angeles should remember that its climate varies from year to year; and if any come here to reside, let me say to them, do not lose sight of the fact that the different parts of the county differ as much in climate as does the south of England from Italy.

ABBOT KINNEY.

Kinneyloa, Jan. 3, 1882.

Placer County Notes.

EDITORS PRESS: I notice that Placer county is not represented very often in the columns of the PRESS. It is not from the fact that it is not worthy of more frequent representation, but the fact is we fruit producers are so busily engaged in setting out and cultivating in winter, and picking and marketing in summer, that we do not get much time to write up the advantages of our county for the PRESS

We think we have one of the best sections of country for all kinds of fruit raised in California. It is a demonstrated fact that we produce some of the finest peaches raised in the State, and in fact all kinds of fruit. Oranges are doing remarkably well here—free from scale, with clean, smooth fruit. And what is of material interest, our oranges ripen from 4 to 6 weeks earlier than Los Angeles. Another very important advantage of our county is the fact of the C. P. R. R. running through the length of same, gives us the facilities of shipping our fruit over the mountains, or to the cities below, as the market suits us.

The altitude, from 500 to 1,200 ft. in these foothills seems to be the freest from frost, and best adapted for most kinds of fruit. The soil here is a decomposed granite, consequently a warm soil. Our roads are free from dust in summer and mud in winter. To illustrate the mildness of these foothills, we have roses in bloom in garden, also ripe raspberries, this second day of January. The hills now are quite green, indicating that spring will soon be with us. Orchardists here are now busy pruning, staking up vines, and setting out trees, etc., trusting for a prosperous season for their labor.

Penryn, Placer Co. J. F. W.

Removing Linnets.

EDITORS PRESS:—I notice, in the Ventura notes, in last week's PRESS, an account of the mode adopted by C. G. Finney, for the destruction of the linnet by the use of poison in meal, which I think is a great mistake of Mr. Finney's, as the use of poison should be avoided whenever possible. In the destruction of insects, rodents, nocturnal animals, etc., it cannot well be avoided, but in all cases where as good or better results can be obtained, it should be dispensed with, as it is at best an unpleasant and unsafe thing to have about. I confess that I never poisoned a thing in my life without experiencing a feeling of repulsion and horror; even to that of rats, mice and gophers, the most annoying and aggravating of all the house, barn and farm pests, there is something horrible in the very name of poison.

There is no disputing the fact, that the beautiful and sprightly little songster named, is the most greedy and destructive bird in the State, on small fruits, and it is true that they destroy thousands of dollars' worth of fruit annually. They are not satisfied with what they can eat, but peck and destroy 50 lbs. where they eat 1. They are also a poor insect-eating bird, and not given to fooling much time in hunting bugs and worms when they can have plenty of delicious, ripe fruit, carefully raised and ripened for them.

By the poisoning process, all birds of the orchard share the same fate; the useful as well as the destructive; the beautiful, cheerful and useful blackbird, the robin, lark, canary, chippy and many others, all the best insect-eating birds we have and the best friends of the farmer or orchardist, as they all like grain in any form, and especially in meal. I might be asked, how, then, are we to rid ourselves of the annoying little pests? I answer, by shooting them, as the quickest, least painful and most merciful way to destroy them. You may think, will it not cost more in ammunition and time than the fruit is worth? But it has not proved so with me. In the first place, they are not migratory in their habits during the breeding season, which is the fruit season. Five years ago, my orchard of over 50 acres, about 30 of which was cherries, perfectly swarmed with the little gourmands, and the destruction was simply fearful. I resorted to the only means available—the ordinary shotgun—but soon found it too expensive in amunition. I then looked the cities over to find a smaller and less expensive one, which I found at the store of Nathaniel Curry & Bro., whose advertisement will be found in the PRESS. It was a double-barrel shotgun, of No. 30 caliber, long in barrel and perfectly safe for boys accustomed to the use of firearms, costing but $10, with a couple of dollars expended on the locks to make them conform to the more modern made locks, which will make it as safe as a gun can be in a boy's hand. I use good powder and No. 10 shot. A small child's thimble full is sufficient for a load, making but a slight report. With this and $5

worth of ammunition, I have kept my orchard clear of linnets for three years, or less than $6 a year. When I first started, I almost dispaired of success, but, knowing that something must be done, I hauled off my coat and waded in. At the end of the second day, I was gratified to find my orchard free from the little gluttons, scarcely a linnet to be seen, nor a song to be heard, and but few came to the orchard, or to their fate, from neighboring orchards during the remainder of the fruit season. In no one season has it taken over a day and a half, or two days, to clear my orchard of them.

I have found the gun described one of the best shooting guns I ever put to my shoulder, never missing over six shots during the season, and any good shot can do as well, as one of my boys has taken my place, and rarely misses a shot. I have killed as many as 500 birds in two days, and I don't think Mr. Finney could do better by his poisoned meal. I am safe in saying that my gun has saved me from $200 to $500 per year; for when I first started in, five years ago, the waste cherries, at the close of the day, from 20 hands' labor, would fill a common cart. The past year the waste, in the same time and same help, would not fill a cherry box, and this past season I took from about 14 or 15 acres of land about, or near, 54,000 lbs. of perfect fruit. I cast my vote for the gun and shot.

Haywards, Cal. W. H. JESSUP.

FLORICULTURE.

Flowering Bulbs.

[The following paper was presented at the last meeting of the Horticultural Society by W. G. KLEE, of the State University.]

The subject for discussion to-day, "Flowering Bulbs," is, if taken in its widest sense, a very large one, including plants from countries widely different in temperature and other atmospheric conditions, from that of icy Siberia to the hot parts of Africa. Naturally, plants growing in such different climates, must be of a correspondingly different nature and adaptation, but in spite of this they have the general characteristics of a bulb in common.

What is really a bulb? It is a very fleshy bud, usually subterranean, the axis of which never elongates. It is a provision for future growth, the stored nourishment of which is deposited in the leaves or the homologues of leaves (scales) instead of in the stem. That such is the case, is shown very strikingly in some species of onions, where bulblets develop instead of flowers in the umbel, and in many lilies, where, in the axils of the lower leaves, small bulbs are formed, while the upper ones produce flowers. All the various modifications of bulbs, as the corm (*i. e.* crocus), tunicated bulbs, hyacinths, or scaly bulbs (lilies, for instance), have all this in common, as said before, that they are storehouses for future growth. As men in cold or barren countries must gather in their provisions for future use, so the silent plant prepares itself for the coming season of rest, be it the hot, dry winter of the tropics, or the cold winters of the northern temperate zone.

In the vegetable kingdom, the great staple for future use is starch, the most convenient form in which plant food may be stored, and this is the material which chiefly is found in all bulbs. It may, therefore, be laid down as an almost universal rule, that bulbs or bulbous plants require a definite season of rest to enable the various parts to come to full development and withdraw from the dying ancestor the sugary sap which, transformed to starch, will feed the young plant on its journey next season.

Another rule to be laid down, and of equal importance, is to give the developing bulb (the bulb growing into a plant) an unchecked season of growth; first, to allow formation of roots, but unbroken, for if neglect of this may have comparatively little influence on the development of the already formed flower, it has so much more on the formation of the bulb for next year, which starts long before the flowering is completed.

To give more than these two simple though all-important rules for all the numerous forms of bulbs, hailing from as many different climates, would be more than folly, and we shall therefore confine ourself to one group of bulbs, the scaly bulbs, and of these the lilies, not because our limited experience justifies the treating of this subject, but because we believe that they are some of Flora's fairest children sadly neglected in a climate admirably adapted to their wants.

The lily has from ancient times been the subject of admiration, and some of its grandest forms are at home, not very distant from the supposed cradle of humanity. Nearly all the finest lilies are natives of temperate Asia, Japan being the home of perhaps the most beautiful of all.

As a general rule, the lilies thrive only in a porous, deep soil, rich in humus, and they usually love plenty of moisture during their period of development, though the degree varies considerably with the different species. They also almost universally prefer moderate shade rather than the exposure to the hot noonday sun.

The propagation of the lily varies somewhat according to the species. The small bulbs formed by the base of the old bulb are the most natural reproduction, but most species form bulblets on the lower axes of the leaves, which, after three or four years' cultivation, become flowering bulbs. Where increase is especially wanted, most of the species, with loose scales, are capable of producing bulbs. To have success with this manner of propagation, considerable attention is necessary. The bulbs must have completed their growth thoroughly. The scales are then cut off, and allowed to dry in the air. Afterward they are planted, in a shaded frame, in loose, sandy soil. Here the bulbs will soon be formed. Flowering bulbs may in this manner be raised in about four years, or perhaps less.

The raising of bulbs from seed is perhaps the least adopted method. As a general rule, the seeds lie very long in the ground, and do not germinate in less than two or three months, and very often remain dormant until the next season. Bulbs raised from seeds require about a year longer than from scales before they become flower-producing, and it is, therefore, a slow process, only practiced with rare species, or where new varieties are desired.

Varieties of Lilies.

Perhaps the best known, and also one of the easiest cultivated and prettiest, is *the* white lily, par excellence (*L. candidum*), a native of the Levant. It seems to flourish with very little care here in California. Like all other lilies, it will, however, repay good treatment, as occasional transplanting and enriching of the soil.

L. longiflorum, or the long-flowered lily, is perhaps less well known. It is also snow white, and very fragrant. This lily is also of comparatively easy culture, but is averse to standing water. It blooms generally in June and July. It is a native of Japan.

The lily most admired for the present, and one of the finest of the genus, is, however, the golden band lily (*Lilium auratum*); also a native of Japan. What has been said of lilies in general, refers to this lily. It loves a deep, rich soil, and will repay your care with increased size and number of flowers, the fragrance of which will fill the air. One of these lilies in bloom is truly a beautiful sight, and it is nothing unusual to count nine flowers, about a foot in diameter each. The original golden-banded lily is snow white, with a yellow band on each petal and sepal, spotted with purple, but numerous varieties have sprung up, with dark red bands, with yellow spots without purple, and also a pure white.

It is difficult to say to which of the two, either *auratum* or the old *lancifolium*, or, as it is also called, *speciosum*, the palm for beauty should be given. The first certainly is the grandest and most dazzling, but the delicious fragrance and elegant form of flower, as well as of leaf, has made *L. lancifolium* a general favorite in cultivation, and it is a matter of regret that here in California, where this lily should find a place in the garden, it is hardly seen outside of conservatories. Many varieties, from the white to rose and deep crimson purple, have been developed to a beautiful complete double. This lily especially delights in a light, rich, porous soil, but is not very particular and of easy culture, and is especially adapted for pot culture.

Still another lily, from Northeastern Asia, is *L. Browni*. The stem of this species grows about two to four ft. high and bears but few flowers, but they are beautiful white, with violet or purple streaks on the outside. This lily is perhaps of more difficult culture than a great many, and must have a perfectly well-drained soil.

L. eximium is a white lily of a transparent character, also from Eastern Asia.

L. fulgens, or the blood-colored lily, is a very distinct species, with flowers of a vivid crimson.

L. monodelphum, or *Scovizianum*, is a native of Caucasus. It prefers a sandy, light, porous soil, and develops its beautiful, brilliant yellow flower, slightly reddish to the center, as early as May in Europe, and would doubtless be one of the earliest lilies here, everything being earlier in proportion. It reaches a hight of three to five ft.

From cold Siberia we have several very pretty lilies, among others *L pomponicum*, resembling the old well-known Turk's cap, but of a more brilliant scarlet, spotted with black, though there exist yellow varieties from this. It grows to about two ft. and is of easy culture; prefers a sandy soil.

L. tenuifolium is a native of the same country. It is rather dwarf in habit, but bears beautiful dark scarlet flowers, with recurved petals. This species is delicate and requires a perfectly well-drained, light soil.

The Serenna, or Serana, is the native name of the black lily, *L. nigrum* or *Kampschatkaensis*, perhaps more remarkable than attractive, on account of its deep red, almost black, color. It will not thrive in a hot locality, but must be cultivated in a shady spot. As regards soil, it is less particular. The bulbs form an article of food with Kamschatkans.

From the Himalaya mountains we have the rose-colored lily, *L. Thompsoni*, one of the most profuse blooming lilies. The flower is of a pale flesh color, changing to violet. It is not unusual to have from 30 to 40 flowers from one bulb. It generally has more than one stem, and its habit is different from most lilies, reminding one more of a fritillaria. This species requires rather sunny, sheltered location, and a warm, sandy mold.

The mountains of Nepal are the home of a very different lily from this, the largest and most stately of all, the *L. giganteum*, or Giant lily. This remarkable species reaches a hight of nine ft., grows very straight, with large cordate leaves at the base, continuing up the stem, ending with about 10 to 15 six to 7 inch funnel-shaped flowers, greenish white on the outside, and violet-tinted on the inside. This lily has been known in Europe for many years, but probably owing to its large size making it undesirable for pot culture, and its shallow-seated bulbs making it tender for a northern climate. It has, however, been reported as having flowered in middle Germany, in open ground, but doubtless well protected. In California, it would certainly find it mild enough, and we hope to see this lily some day growing in our gardens.

Having mentioned a number of the foreign lilies, which are all highly desirable, I cannot refrain to speak a few words about California's choicest lily—*L. Washingtonianum*. This beautiful flower is a native of both the mountains of California, where it seems to flourish in the red, sandy loam from the wash of the mountains, growing chiefly in shade, where it reaches its perfection, growing to the hight of 5 ft., with as many as 20 flowers on one stalk. The flowers are white, with purplish tint and small spots, and exhaling a delightful fragrance. This lily has found much favor in Europe, and it is a shame that it is not more known in California. It likes plenty of water, but does not seem to be particular about soil. Of the other eight different lilies found in California, *L. Parryi* and *Humboldtianum* both deserve a place in the smaller gardens, while they all are pretty in their own ways.

POULTRY YARD.

Notes on the Care of Fowls.

From William Niles' "Pacific Coast Poultry and Stock Book" we take the following paragraphs, concerning the care and feeding of fowls:

Keep Your Fowls Tame.

There is one point in poultry management to which we wish to call especial attention, as but few persons who rear poultry for profit ever attach much importance to it, notwithstanding it has a great influence on the profits. It is to keep your birds tame, whether they are kept up in suitable inclosures during the entire year, or permitted to have an unlimited range, for it pays to do so in many ways. If you keep your birds tame, so they will come to you quickly at the call, and eat out of your hand without any sign of fear or distrust, they will always be quiet and content, and will fatten and thrive much better. This matter is well understood by breeders of the larger kind of stock, such as cattle, horses, sheep and swine, while there are a sensible few who apply the same principle with poultry. Many a fine nest of eggs has been destroyed by a wild and frightened hen—a hen which had early learned to fear her master or owner. If uniform kindness and gentleness had been resorted to, the hen would suffer herself to be handled while on the nest, and never once think of leaving it in such a hurry as to endanger the eggs. If the poultry on the farm is kept tame, it is not a difficult matter to catch one or more when wanted for table or other use.

Money in Eggs.

I am frequently asked if poultry pays. My answer is: "Certainly it does." My own experience proves it to my entire satisfaction. Poultry can be made to pay better than any other live stock on the Pacific coast, in proportion to the capital invested. Prices for eggs and fowls are always high, compared with the Eastern market. The demand for eggs is unlimited, and will always exceed the supply. In order to pay well, however, the best laying breeds must be secured to start with. Chickens must be hatched early, so that the pullets will be old enough to commence laying in the early winter when eggs are high. The fowls must have constant attention, dry quarters during cold rains, and not allowed to suffer from neglect in feeding. Fresh blood should be mingled yearly, by introducing a new cock, to insure health, size and stamina. There is more profit in producing eggs for the market than in raising chickens, unless very early "broilers" be raised, which always command a high price during the winter and early spring months.

Hens Eating Eggs.

I have seldom been troubled with "egg-eaters," and if hens are fed and managed as they should be, and supplied with every want, they will have no desire or appetite for devouring eggs. Hens seldom eat their eggs if allowed their liberty in the summer. It is only when confined by severe weather, or otherwise, that the habit is formed, and it is obvious then that they crave something that they *need*, which the egg supplies. Feed and manage so as to *prevent* the habit. An ounce of prevention is certainly worth "a pound of cure" in this matter. But if the habit cannot be prevented, the *dark* nest is a certain cure. Arrange the nest at the end of a covered approach, so it will be quite dark, and, as soon as the hen lays, she will leave it instantly, and none will venture near, except for legitimate purposes.

Advantage of a Good Range.

For both laying and breeding fowls, a good range is a necessity to their comfort, health and profitableness. Without this convenience, to a greater or less extent—and the more liberal the range the better—it is futile to attempt to grow fowls to profit, and idle to expect them to produce eggs regularly. Good range, pure water, dry shelter, animal food, and entire freedom from filth, are all needful to promote high health and continuous prosperity in the poultry yard; but more or less range for laying fowls is the first essential to their well doing. To afford this desirable accommodation, space is required; and where a considerable number of birds are kept, the room assigned to each lot should be as liberally accorded as possible, in order to prevent sickness among the stock, for the crowding of a large number of fowls into single inclosures is certain to generate disease.

Curing Sitters.

Our plan of curing sitting hens of their broody propensities is somewhat different from that of the old lady who cured her hens of disease by wringing their necks. That no doubt effectually removes the disease, but will soon reduce the size of the flock. The idea of ducking a poor broody hen to make her stop her clucking and motherly propensities is about as useless as putting their heads under their wings, or whirling them around until they are almost senseless, and then flinging them over the fence to meditate on their past iniquities. There are others who yoke up their broody hens, the same as many do the geese they wish to keep from going through the fences. The plan may be highly ornamental and diverting, yet it is rarely productive of the desired result. These are mostly the plans resorted to in "ye olden times," when dung-hill fowls, whose powers of endurance were of the highest order, were the rule and pure bred fowls the exception. A far more sensible as well as effectual plan is to put all the broody hens you do not wish to set into a commodious coop, with a young active cockerel and they will soon forget their broody ways.

Meat for Fowls.

Adult fowls when moulting and young ones when feathering out, need meat with their daily food. Brahmas and other large breeds will do better and make far stronger and healthier fowls if, as soon as they can eat it, a little cooked meat, chopped fine, be fed to them every day. Those who try it will be surprised to see at how early an age and with what eagerness the little chicks will eat the meat. It should be cooked and cut up fine, so that they will have no difficulty in swallowing it. Fowls that have a good grass run, where they can gather up insects, do not need meat as much as those that are cooped up. It also pays well to feed meat to hens that are laying, to keep them at it, and to those that are not laying to induce them to lay.

The cheapest meat is Chandlers scraps (or cracklings), broken up, soaked in water, and fed either with soft food or separately.

Feather Eating.

This annoying and unnatural practice is another habit formed under confinement of the fowls, and seems to arise from a want of grass and exercise. It is generally prevented by good care and giving grain, meat, shells, bone and vegetables in variety. The habit may be checked by giving finely cut, well-cured rowen hay, and also by keeping constantly before them a small bundle of corn fodder, renewing as often as the tender leaves are stripped from the stalks. Another and more severe remedy, as a last resort, is to pare down the sharp edges of the beak of the offender so it cannot hold a feather to pluck it. We learn that a sort of bit has been invented to keep slightly open the beak, but have not tried its merits.

Comets.

Mr. W. Mattieu Williams, the manager of the Royal Polytechnic Institute of London, recently delivered a very interesting lecture on "Comets." These erratic visitors, he observed, are very numerous, Arago estimating their number at 17,500,000. The lecturer explained how these figures are arrived at, and described the method of sweeping the heavens with a telescope in search of comets. He showed on the screen the appearance presented on the first observation of a comet and the gradual growth of its tail. He also exhibited the portraits of various historical comets, and described the circumstances connected with their appearance. He especially referred to the investigations of Donati on the comet bearing his name, and the manner in which the luminous matter of the nucleus is first thrust out toward the sun and afterwards repelled from it to form the tail. He indulged in some speculations as to the composition of comets' tails, and the very difficult problem which their sweeping round so rapidly presents. He then went on to touch on the probable effects of a collision between a comet and the earth, exemplified by instances of some approximate collisions that have occurred, and concluded with an account of the observations of Dr. Huggins and other astronomers on the recent comet, as to its chemical composition, as revealed by spectrum analysis. Mr. Williams is organizing an exhibition of scientific inventions of a popular character.

IT IS thought that the survivors of the *Jeannette* boats, who were all living at the end of October, according to the news of them received a fortnight ago at Irkutsk, have been transported ere this to a more hospitable climate by the people with whom they had to take refuge.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

Meeting of National Grange—No. 7.

Report of the Committee on Good of the Order.

Your Committee on Good of the Order are deeply anxious, as doubtless are all the members of this body, that the way-marks set up this session shall indicate real progress. Has our advance during the past year been what it should have been? Have we realized, and at this, the end of another Grange year, do we realize, the ideal of one year ago? Your committee believe that very few of us are satisfied; that none of us realize our ideal. Why not? What is the matter? Our principles are correct, our work is commendable. The toiling millions have great need of our services, and yet they do not manifest an interest and scarce a curiosity in our efforts. Where is the trouble? It seems to your committee that if we scrutinize carefully the successes and failures which have attended the efforts of Patrons in their organized capacity, we may be able to form a pretty correct estimate of the causes which contributed to these results.

All Patrons of long experience in the Order will agree that when it was first launched upon the sea of life, co-operation was the great distinguishing feature, which more than anything else commended it to the favorable consideration of farmers. All other interests were already organized and united, and it was just as important that we should stand together in defense of our own, as others for theirs. Others were organized for a purpose, and that purpose self-protection, which farmers were the last to learn, is the first law of nature. The founders of the Order, and its early apostles, who went out through all our land, taught us that by thus uniting together we might enhance our material interests. This idea obtained in State, county and subordinate Granges, and was generally acted upon, and to-day, after more than a decade has passed, we find that where co-operation has been a success, the Grange has been a success, while where failure has resulted, Patrons have become discouraged and disheartened.

If our premises and conclusions are correct, it seems to us that the National Grange can best make itself felt for good in the rank and file of the Order by furnishing the subordinate Granges with instruction and advice which will enable them to co-operate successfully in business affairs. In other words, realize to them, to some extent at least, the promises of those who first preached to them the gospel of temporal salvation. Or, to adopt the beautiful sentiment of our Worthy Lecturer, "teach farmers how to save the fruit of their toil and make farm life more profitable." Do this, and you have interested them in something real, tangible, practical. No danger of their forgetting it. No danger of their back-sliding. Nothing ever did, nothing ever will, succeed like success. But, Worthy Master, right here comes the trouble, and that is, to induce them to make the attempt.

Co-operation.

Successful co-operation pre-supposes mutual confidence and personal honesty. It starts out with the idea that each is to work for the good of the whole, not that a few are to do the work, assume the responsibility, suffer the losses, and divide the profits. It supposes that the settled policy of the company is to be lived up to; that losses are to be borne as cheerfully as gains enjoyed; that the fact that if sometimes others are able to offer us better terms, it is no excuse to turn our backs upon our friends. In short, successful co-operation supposes that each one who is a party to the enterprise is to live up squarely to the letter and the spirit of the agreement; that through heat and cold, sunshine and storm, prosperity or adversity, high prices or low, good times or bad, all are to work together as one individual, earnestly, unselfishly, and perseveringly, not grumbling or finding fault, but cheering, sustaining and encouraging each other, exercising that *faith* in their work which will beget a never-failing *hope* in their final triumph; while at the same time exercising that charity towards each other which shall best prove our *fidelity* to our principles, and in all our efforts exemplifying that *perseverance* which knows no such word as fail. Nowhere in all the history of our Order has there been an instance of failure where the Grange has thus worked together. But it is a slow process to divest men of their prejudices; to get them out of the old ruts; to induce those so long accustomed to allow others to do their thinking to think for themselves; to beget confidence in those who, through the influence of generations of oppression, extortion, and neglect, have come to think no man honest and unselfish. These, we say, are slow processes; and right here comes in most clearly the necessity and value of the educational feature of our Order. Just here we perceive its importance. No interest, no society, no fraternity or other organization outside the farmers themselves, no co-operation not wholly of and by farmers, will ever remove the disabilities of which we complain, or will ever educate or elevate them.

Build up the Farming Interest.

It is the mission of other interests to make us worth as much as possible to them. It is ours to make ourselves worth as much as possible to ourselves. It is our mission to till the ground, to subdue it, to develop and increase its productive resources, to enhance it's value and add to its beauty. Of this we do not complain. We accept the mission, and are willing, if need be, to eat our bread in the sweat of our face; but we claim, and we must insist upon, a more equal distribution of the rewards of our labor in the future than in the past. How shall this be accomplished? Great social changes are not brought about at once. We must not only be organized, but educated. We must learn to labor and wait. We have enlisted for life, and are to "toil on," "toil on," till the Great Master says, well done; when, like the prophet of old, we will drop our mantles upon the Elishas who shall succeed us, and they shall complete the work we have so well begun. Revolutions never go backward. A good beginning is the beginning of the end. But we must educate *ourselves* for the work we are to do. Argument, logic, threatening, coaxing, or scolding will never give us our rights. But when our circumstances are talked over by the fireside, rehearsed around the sitting-room table, by the wayside, in the subordinate Grange, read of in our newspapers, urged upon our attention by the quarterly issues of our Worthy Lecturer, which come to us like the colporteur's tract, offering us just what our souls hungered for, or heard from the lips of the living speaker, who comes to us with earnest zeal in behalf of the great Order of which we are a part—all these influences will awaken thought, thought will result in action, and action will be effectual just as soon as it is united. So we see that our work, as well as our principles, points to co-operation.

The Grange Order.

We have in the Order of Patrons of Husbandry such an organization and such a union of purpose as the agricultural world never saw before. This National Grange is its acknowledged head. Patrons expect us to lead off, to sound the keynote and order the charge.

What we desire is to do something which shall call the attention of the farmer to our work and our principles. Something which will cause him to think. We want to reach him at his own fireside, away from adverse circumstances, where we can force home to his consideration the practical principles of our fraternity. Your committee do not presume to dictate to other committees, or even advise. Each committee of this Grange is for the "Good of the Order." All are laboring to secure the same results. We would suggest that the Committee on Co-operation, and also on Education, report some plan by which their suggestions may be put in practical operation. While we approve the work of the Worthy Lecturer, and hope his circulars may be continued, we suggest that the Grange instruct him to give greater prominence to the matter of co-operation, not only in pecuniary affairs, but also in education and in building up and strengthening the Order.

Per order of Committee on Good of the Order:—D. H. Thing, W. H. Cheek, R. W. Baylor, Mrs. E. M. Nicholson, Mrs. M. E. Flint, Committee.

Concurred in.

Contra Costa and Alameda Granges.

Alhambra officers were installed Jan. 7th by Bro. J. V. Webster, including Bro. Dr. J. Strentzel, who has always received the office of W. M. by the popular will of Alhambra, from the organization of the Grange to the present time. A harvest feast was given by the sisters, and a good time enjoyed, as usual.

On the 14th, Point of Timber and Walnut Creek are invited to join Danville Grange for joint installation of officers. With Alhambra added, they will select a county lecturer for appointment by the W. M. of the State Grange.

Temescal Grange will meet with Eden Grange at Haywards, "at 10 o'clock sharp," for joint installation of officers, Jan. 14th. Bro. Joel Russell, who visited the late session of the National Grange, at Washington, will be expected to say something of interest about that and his visit to other Eastern places. Eden is noted for having pleasant and profitable meetings. So let all Patrons attend who can.

Agricultural Notes.

CALIFORNIA.

ALAMEDA.

Prizes for Beet Growing.—Washington Corners *Reporter:* The Standard sugar refinery has issued a circular to the beet growers for the works at Alvarado, offering prizes for the best beets raised in the season of 1882, as follows: For the best 100 acres, $200; for the best 75 acres, $150; for the best 50 acres, $100; for the best 25 acres, $50; for the best 10 acres, $20; for the best 5 acres, $10, and a years subscription to the *Sugar Beet*, a paper published at Philadelphia, devoted to the beet-root sugar industry, to each winner of a prize. For the second best lots of beets in fields of the above named sizes, the *Sugar Beet* will be given for one year. The award of prizes will be made by three judges, two of whom will be chosen by the competing farmers and the third by the company. The fields will be examined and the awards made before the beets are gathered. The purpose of offering these prizes is to induce farmers to greater care in selection of land and in methods of cultivation of beets.

COLUSA.

Editors Press:—Since New Years, until today, we have had in this vicinity regular old-fashioned Oregon weather. Rain at night and fog in the morning so thick that a person could almost cut it with a knife. The rainfall, however, has not been heavy, though we are not suffering for water by any means. If any disaster befalls this section it must happen hereafter, for up to the present time everything is just as it should be. There has been a great deal of winter sowing done, which is pretty good evidence that the people do not fear a drouth. We have had very little frost yet, never enough to stop plowing. The thickest ice I have seen this season was about the thickness of common window-glass. Although most of the trees have shed their leaves, yet some still remain as green as summer-time. Among the trees that are still green are the bar-berry bush, the water-willow, and in some instances the oak is partially clad. The buds on the cottonwoods and balm of Gileads indicate an early spring. With favorable weather henceforward we hope soon to be able to report everything green and flourishing in this section of country. —L. D. J., Olimpo, Cal.

KERN.

No Rain.—Bakersfield *Record* Jan 5: The stock owners are flattering one another that it is to be a drouth. It has been trying to rain for several days past; the frost has gone into the hills and the days have been warm with an east and south breeze. One dangerous peculiarity of the season is the absence of winds. Rains follow storms of wind in this section so generally that their failure amounts to a prediction of drouth. But there is plenty of time yet for a blast from every quarter. Some of our best seasons have been commenced after the first of January, and when the cold weather has come in November and December, with clear sky throughout these months, January has been mild, with frequent showers, and February has proved wet. The longer days favored the growth everywhere and the season was all that was desired.

LOS ANGELES.

Gopher Catching.—*Express:* A novel mode of catching gophers has been discovered by a certain lady of this city. The pugnacious qualities of this species of rodent are well-known. Whenever two gophers are placed together in a trap, one will always kill the other. The lady referred to catches a live gopher, and then fastens a strong cord to its hind quarters. It is then placed in a fresh hole, and the cord is let out far as the animal wants to go. He is sure to encounter the inhabitant of the tunnel and immediately a fight commences. The agitation of the cord indicates the proper time to haul in, and the captivated gopher generally is brought to the surface with his adversary tightly clinched in his teeth.

Winter Irrigation.—Anaheim *Gazette:* A very thorough system of winter irrigation has been inaugurated in Orangethorpe district this season. Nearly all the farms there have been already flooded and the ground is as moist as if six inches of rain had fallen. In Placentia district, also, much irrigation has been done. Had this plan been pursued in years gone by, great would have been the profit.

Horticultural Commission.—The new Board of Horticultural Commissioners met at the Supervisors' room in the city of Los Angeles yesterday, and organized temporarily by electing Mr. A. Craw, President, and Mr. J. M. Foord, Secretary. The drawing for terms resulted as follows: Mr. A. Craw, one year; Mr. J. M. Foord, two years; Mr. H. K. Snow, three years. Mr. A. Craw was elected permanent President and Mr. J. M. Foord, permanent Secretary. The rules compiled by the Chief Horticultural Officer were, on motion, adopted as the rules of the board for the present. The commissioners then proceeded to district the county, as follows: Mr. H. K. Snow to have charge of that portion of the county lying east of New River and south of the line of the Southern Pacific railroad. Mr. James Foord, San Gabriel township and all that portion of the county lying north of the line of the Southern Pacific railroad. Mr. Craw's district embraces a portion of the Los Nietos township and all the remainder of the county lying west of the western boundaries of the other districts.

The Linnet Nuisance.—Mr. G. V. D. Brand, of Pomona, who has been troubled by linnets stripping the fruit buds from his orchard trees, writes the Los Angeles *Times*, under date of Dec. 31, 1881, as to his manner of disposing of the little pests, as follows: "This morning I cut three or four apples into halves, put on a little strychnine and stuck the pieces in the tops of fruit trees. This evening I counted 29 little birds—all linnets—lying under the trees."

He also says of the remedy recommended by Mr. Dougherty, of Pasadena: "Other parties went out with a lantern two or three nights and held the lantern near orange trees, when the birds came flying at the light and were easily killed. They killed about 375 birds in a few evenings."

MERCED.

Cotton.—*Express:* Mr. T. O. Dean, a gentleman well-known in this county, and a Merced river farmer, is engaged in the growing of cotton, and has made it a success—even more profitable than wheat. Mr. Dean planted 150 acres in cotton this year, which produced 109 bales. The cotton was disposed of to the Merced woolen mills at 12 cts. per pound, amounting to the snug sum of $4,185.60. The day is not far distant when the cotton crop of Merced county will be an important factor in the sum of her productions.

NAPA.

St. Helena Vinicultural Club.—The old Board of Directors of the Winegrowers' Association, of St. Helena, Chas. Krug, John Lewelling, John C. Weinberger, John Thomann and Wm. Scheffler, have been re-elected. They then re-elected the old officers, as follows: Chas. Krug, President; John Lewelling, Vice-President; John C. Weinberger, Treasurer; Chas. A. Gardener was re-appointed Secretary.

SACRAMENTO.

Folsom Notes.—*Telegraph*, Jan. 7: The late warm rain has had a most beneficial effect upon the young grain that now in many places is making the finest showing, while sheep and cattle are beginning to find an ample supply of food in the grass that is growing most rapidly.

SAN BERNARDINO.

Oranges.—The *Press and Horticulturist*, of Riverside, says the demand for oranges in that city is greater then ever known before at this season of the year. It also says that prices hold up well. Mr. A. J. Twogood, of that vicinity, receiving $4 50 and $5 per box for recent shipments.

SANTA CLARA.

Flour Shipment.—*Journal*, Jan. 7: It should be gratifying to all Santa Clarans, as well as to those directly interested, to know that in the first shipment of California-made new process flour to Europe, that sent by the Santa Clara City Flouring Mill Co. best stood the test of the voyage and realized in Liverpool the highest price received for any lot in the cargo. As is generally known, the vessels that are being sent to Liverpool with California new process flour are loaded by the Millers' Association of the State, who receive flour at San Francisco from various mills and load it promiscuously as it comes. This first vessel spoken of was five months making the trip, and on reaching Liverpool the strange fact was discovered that a portion of every brand of flour except that of the Santa Clara mill had heated and become damaged. The flour made here went through in a perfectly good condition, and sold for a price that is very satisfactory to the company. This exemption from heating is ascribed to the peculiar treatment the wheat receives before being ground. Whatever may be the cause, the success attending the shipment of Santa Clara flour to Europe in good condition is established. The mill is now receiving additional improvements in the way of two new machines for use in the new process manufacture, and a new packer, which will still further increase its capacity and the quality of the flour. When these are added, the mill will be run night and day.

Gilroy Cheese.—*Advocate:* The shipment of cheese by rail from Gilroy during the year 1881 was 703,650 lbs. The sales of the year have been very encouraging. The brands of the leading dairies have obtained the highest prices. They have taken the lead of all other California brands and frequently ranked at par with the best imported brands.

SANTA CRUZ.

Outlook.—Watsonville *Transcript:* At present, the indications are very favorable for splendid crops of all kinds in the Pajaro valley, and upon the surrounding foothills. The ground is in excellent condition, and the farmers are availing themselves of the pleasant weather to plow their land and get the seed in the ground. The warm weather of last week was favorable for grass, which now has a start sufficient to insure good feed for stock, which will soon bring the price of meat and butter down to a more reasonable figure.

SAN JOAQUIN.

Lodi Looks.—*Review:* There has been plenty of rain in this vicinity for present purposes. The farmers are all busy plowing and seeding. The young grass is growing fresh and green by the road-side, and lilac bushes in the flower gardens have already put forth signs of early blossoms.

SAN LUIS OBISPO.

The Outlook.—*Tribune*, Jan. 7: There is considerable apprehension, not to say alarm, among business men, farmers and dairymen on account of the slight rainfall thus far this season. No particular injury has been sustained in this county as yet on account of the "dry spell" except by those farmers who neglected to take advantage of the November rains, and, perhaps, a few dairymen. There is, however, no reason to apprehend a dry year. The season thus far resembles, in a marked degree, that of 1877 78, when up to December 22d only 2.98 inches of rain had fallen. From that date to January 13th no rain fell, and everybody predicted a repetition of the disastrous seasons of '63-4 and '76-7. But on the 13th of January, 1878, a heavy storm set in and by the 24 of February the rainfall amounted to 14 22 inches. A very prosperous season followed, except in some localities along the coast, where the heavy crops were blighted by rust. Another similarity between the present season and that of 1877-78 is noticed. During the dry spell there was then, as has been the case this year, a great deal of cold weather, thick ice forming on several oc-

casions. Then, too, the rains were heaviest in the northern part of the State, the same as this year. Thus far we have had about one-third more rain this season than fell during a corresponding period in 1877-78. Taking all these things into consideration, and judging from the weather indications, there is as yet really no cause for alarm. The season might be better, and it might also be a great deal worse. On some of the dairy ranches where cows are calving, considerable inconvenience and perhaps loss will be experienced, but the *Tribune* predicts that within the next ten days sufficient rain will have fallen to more than recompense with good effects all the damages that have been sustained. So far as the farming interests are concerned everything is progressing favorably. Some have not completed their plowing, but a great deal of land has been seeded and the grain has sprouted, and in every instance is looking fine. There is a great deal of moisture in the ground, and the damp fogs which have prevailed have kept the growing grain in good condition. But comparatively little rain will be required to insure an average crop on all lands that have been seeded.

SOLANO.

SOLANO COUNTY ORANGES.—Suisun *Republican:* At Mr. Chas. Martell's grove in Pleasant valley oranges grow luxuriantly, and are exceedingly delicious to the taste, rivalling those of Los Angeles in perfect form and beauty, which is saying a great deal, we know, but, nevertheless, such is the fact. The most sought for here are the "Mediterranean sweet" and the "navel;" also a variety of others. The trees are three years old, and several that were planted last spring are now bearing fruit splendidly. Messrs. M. R. Miller, E. R. Thurber, John Dolan, John Huckins, all near neighbors, cannot grow this fruit, as their locations are unfavorable. Mr. Martell's grove is on the southwest slope. Two hundred and fifty trees, of various ages, are in bearing. The soil is heavy, correspondingly strong, and the loam rich and deep.

EDITORS PRESS:—While in many other localities they are suffering for rain, here, in the northern part of Solano, we have had an abundance for all present purposes. Mr. E. R. Thurber's rain gauge shows six inches to present date. On new land it is wet to the depth of 18 inches, while on old, it is over two ft. Early-sown grain is up and well rooted. Pruning is well advanced. The warm days during last week have swollen the fruit buds and started the sap to run freely in fresh-pruned grapevines. For many years we have been troubled with mildew on our grapes; having been advised by a friend to try bluestone, we did so. During the latter part of this month, and before the young shoots have started, we make a strong solution of bluestone, take a common watering-pot, saturate the vine thoroughly, if there is any old bark we remove it, that the vine may be well saturated with the wash; then we sulphur well during the early part of the season. Vines treated in this way have withstood the mildew, while those only sulphured, have been entirely destroyed.—F. B., Vacaville, Jan. 10th, 1882.

SONOMA.

NOTES.—Petaluma *Argus:* Alfred Symonds sent us some delicious raspberries for New Year's. They were grown in the open air, and were absolutely perfect in size, taste, etc. Mr. Hoffsetter, an intelligent and energetic vineyardist of Sebastopol, is now putting out 10 acres of Malvoise grape cuttings, from Santa Cruz. A few years ago he procured Malaga cuttings from Spain, and they are doing well.

PLENTY OF RAIN.—We have had an abundance of rain for this time in the season, and the outlook is very satisfactory. Farming operations are well advanced, and about the usual quantity of grain sown. It is a little too soon to predict results, though we are now satisfied that nothing will prevent good average crops in Sonoma unless it is too much rain. Our farmers are never dried out, but are occasionally drowned out. Grass is growing rapidly, and the whole country around here is looking finely. In many places on the highlands the feed is quite good. The lowlands that are not properly drained, are suffering just now from standing water.

RUSSIAN RIVER NOTES.—*Flag*, Jan. 5: Favorable reports reach us from the mountains. Around the head waters of the Guallala feed is very fine and stock is doing well. Sheep have never done better; they are in good condition, and the loss is smaller this season than ever before. Cattle are in fine order and thriving. Game of all kinds is plentiful, and hunters have rare sport with bears, wildcats, foxes, coons, and other "varmints." On the ranches of Wickersham, Wilcox, Seawell and Hassett, six large bears have been killed, and war has been declared upon a dozen more. Notwithstanding that our usual amount of rain has not fallen this season, our farmers were never better satisfied with their prospects. We have had no driving storms, but rain fell gently, sinking into the earth instead of running off and merely raising creeks and rivers. Plowing is going on merrily, grass is growing finely, and stock is in excellent condition. Never has the outlook been more cheering than at present. Mr. Flack, of Magnolia farm, is sending apples to San Francisco, for which he receives $1.25 per box; for pears he realized $2.25 per box. Two years ago apples and pears did not pay for shipping. The demand for apples exceeds the supply, San Francisco supplying Arizona and New Mexico with this fruit. Our farmers and ranchmen are in high glee over their success the past season. Crops and stock turned out well, fair prices prevailed, and everybody is coming to town and making their yearly settlements. Money is plenty, prospects are good.

STANISLAUS.

FEARS.—*Herald*, Jan. 5: The continued dry weather seems to create anxiety in farming circles, and when that branch of industry is disturbed all others sympathize. What is generally considered the bulk of the season for rain has passed, and but little has fallen. We have not had more than one-fifth of the rainfall necessary for good crops, and the young wheat is beginning to feel the need of water.

SUTTER.

POPULAR WHEATS.—Yuba City *Farmer:* While in conversation with Geo. W. Carpenter and B. F. Walton in the Farmers' Union office on Saturday, we heard the history of the well-known Proper wheat given. Two brothers named James and Robert Anderson lived on a ranch about nine miles from this place, in Gaither school district in this county, and who, after the dry year of 1864, purchased some barley imported from Chili, for seed. When the grain matured, a number of heads of wheat were found, which they plucked and rubbed out by hand. Finding the berry fine and plump, they sowed it and raised a considerable amount, which was again sown for seed. In 1866 and '67 the Anderson brothers sold their ranch to Edward Proper, who continued to raise this wheat, and sold considerable quantities for seed. It was received with great favor, and took the name Proper from him. Mr. Walton informed us that among the varieties of wheat in this county are Pride of Butte, which is a variety received by Gen. John Bidwell from the Patent Office, Proper, Chico Club, Genessee, White Australian and Sonora; the latter being considered the best for late sowing and for hay.

CROP NOTES.—It has been estimated that three-fourths of all the cultivated land in this county will be seeded this year, or about 152,000 acres. There are about 375,000 acres assessed. John Schlag, residing on the tule, three miles west of Harkey's Corners, says that most of the land in his vicinity has been summer-fallowed, and the promises are excellent. Wm. O'Banion, who resides 10 miles southwest of this place, informs us that he has 320 acres of grain in, of which 220 are summer-fallow. The prospects are excellent thus far, and if the floods do not drown out the grain, the harvest this year will be unusually abundant.

TUOLUMNE.

EDITORS PRESS:—Tuolumne county is enjoying a rich, refreshing season of warmth and growth. Our days are cloudy, rainy, genial and pleasant, alternately. Never before have we experienced such beautiful weather at this season of the year. The crops can't help growing. The feed is sufficient for all roaming stock; being warm, no suffering has existed among them. James Goodwin, of Mountain Pass, informs me that he has an apple tree of the Red June variety, with a half crop of half ripe apples, bidding fair to bring them to full maturity—something never before experienced. From reports from the southern counties, the rain has failed to respond to the prayers of anxious farmers. That is unfortunate, as the most productive and extensive grain land of the State lies in that section. It is to be hoped that it is not too late to produce an average crop. We are too apt to lose faith at the first appearance of misfortune. The foothills should possess some advantages over the rich plains. We are cramped for crop-room, and slow because of the necessity of cultivating with old-fashioned machinery. Gang-plows and headers can only be used in some few favored localities. It would not answer for earth's "Garden of Eden" to be enjoyed by the few to the exclusion of the many without having in some way a serpent to bring us back to a fellowship with our kindred. The plains can give us bread and some of their gold for our luscious fruits, and the "wine-bibber" can have his taste gratified from the same source. But in mine, I would rather be excused. I do believe that the vines should not be trimmed this spring as early as usual owing to the warmth of the weather. Early trimming will ensure early starting of the buds, which might prove fatal by the late frosts. Experience should teach us when to use the knife or shears. That pitting machine advertised, should find its way into the market before another season comes round. For plums, it must be a great help to fingers made slippery by the adhesiveness of center and circumference, often trying to temper and patience. By all means spread around the pitting machine. The readers of the RURAL will be sure to be patrons if it performs as recommended.—JOHN TAYLOR, Chinese Camp, Jan. 5, 1882.

YOLO.

BLACKBERRIES.—*Mail*, Jan. 5: Mr. John Hollingsworth of this city, handed us on Monday a vine fairly loaded with large luscious blackberries of the Winter variety. They were grown at his home in the eastern portion of town and he has large quantities, some of which are in bloom, others half ripe and a great part of them are just ready for the table.

THE OUTLOOK.—*Democrat*, Jan. 8: There was never perhaps a better outlook for the crops in this vicinity than at the present time. There has been no heavy rainfall, but what has fallen has come in a shape to do the greatest good and there has been enough for all immediate purposes. The work of seeding is farther advanced than usual, and the area sown to grain will be exceptionally large.

The Immigration Association.

A special meeting of the Executive Committee of the Immigration Association of California was held Tuesday afternoon, at their rooms, No. 10 California street. Present, Messrs. Blanding, Barker and Kelley, and President Briggs in the chair. Captain Blanding submitted his report on the public lands of the State. The report, of which the following is an extract, was accepted:

To the Executive Committee of the Immigration Association—GENTLEMEN: You submit to me the question whether the public lands in this State which are inclosed and occupied by parties not claiming them under the laws of the United States, are subject to pre-emption or homestead only. If it be true, as said, that of much of the public land in this State has been inclosed in large tracts, and is now held without authority of law, and if such inclosure and occupation exclude the public lands from pre-emption and homestead, then the field of usefulness of this association will be much contracted. Most of the immigrants on reaching this State have but limited means, not more than will enable them to make the improvements required by law for the perfecting of their claims by pre-emption or homestead. Lands owned by private parties, except the railroad company, are generally beyond their reach. If this association would be of any real service, therefore, to the immigrant, it must help him to make his home on the public lands. There is much more public land in this State legally vacant than is generally supposed. The land office of the association has already learned from the records of the San Francisco land office alone, that in 34 out of 124 examined townships, there are 225,000 acres of public land now vacant and subject to entry, and doubtless the other land office in the State, when examined, will show the same state of things. If, however, the pre-emptor who attempts to make the settlement required by law, is to be deemed a trespasser on the possession of one who holds such land as a cattle range or for any other purpose, then but little increase of our agricultural population can be hoped for. The immigrant will not not make his home on land which he can secure, if at all, only by expensive law suits. Such might unfortunately be his fate under the late decisions of the courts. The Supreme Court of the United States, in the case of Atherton vs. Fowler (6 Otto, 513), and the subsequent cases of Hosmer vs. Wallace (7 Otto, 575) and Trenouth vs. San Francisco (10 Otto, 251), held that no right of pre-emption can be established by a settlement and improvements on a tract of public land which was in the possession of one who has inclosed, settled upon and improved it. The Supreme Court of California has felt itself bound to follow those decisions, being the construction of a Federal statute by a Federal court. Therefore, in late cases, it has announced the same doctrine. It may therefore be regarded as established law. There should be no difficulty in passing an act through Congress to remedy the evil, for it seems to exist in other States also. Commissioner Williamson, in the Nickal's case, said: "It is a matter of general complaint among the poorer class of settlers, that rich ranchmen or cattle owners are in the practice of inclosing large tracts of the public domain with fences, to the exclusion of homestead and pre-emption entry." I learn that Mr. State Surveyor-General Shanklin has forwarded to our delegation in Congress an act intended to remedy the evil, and this association should urgently request their efforts in securing its passage at the present session.

On motion, Capt. Blanding was then appointed a committee to draft resolutions urging upon Congress the passage of a bill securing the pre-emptors and homesteaders the right to enter and make settlement upon the vacant land of the United States. The committee was authorized to prepare a proper bill, to be presented to Congress, to accomplish that object.

Pres't Briggs reported that a letter had been sent to Gen. Rosecrans in reference to the money collected at this port from ships on which immigrants had died, and which at present is at the U. S. Treasury, with a view of obtaining the same for the benefit of the Association.

Mr. Street, the land agent, reported that he had examined some 6,000 square miles of lines, comprising some 150 townships, situated in part of 11 different counties, and found thus far, 287,000 acres of vacant land, according to the records of the U. S. Land Office.

The President then read a congratulatory letter which had been received from Gov. Perkins, on the objects and organization of the association.

The donation of a map containing all the special grants in the State was acknowledged from Mr. George K. Porter. The Secretary then submitted his report, and after the transaction of further minor business, the meeting adjourned.

THE bonded indebtedness of Yuba county, in the amount of $131,000, has been refunded from 8% to 6% interest, payable in 20 years. The whole amount was awarded to N. D. Rideout, a local banker, at par value.

MILLER, of California, has presented in the Senate a memorial from the San Francisco Chamber of Commerce for an appropriation for harbor defenses at the entrance to the Bay of San Francisco.

News in Brief.

RICHARD H. DANA, JR., died in Rome, Italy, Saturday.

THE best feminine help in Sweden receives $4 a month.

SMALL-POX caused 450 deaths in New York city in 1881, against 31 in 1880.

THE East river bridge needs $600,000 more to complete the structure, which has already cost $13,377,000.

ASHCROFT, Colorado, is to have two smelters. The town trustees have donated a tract of land for that purpose.

A GENERAL arrest of saloon-keepers was made at Willows on Monday for disregarding the Sunday law on the previous day.

ADDITIONAL copper discoveries are reported from the Santa Catalinas, Arizona. The bodies of ore are reported to be very large.

THE annual copper product of the United States is now given in a supplement to the census at 50,655,140 lbs, worth $8,842,961.

THE gallows to hang Garcia on next Wednesday is already erected at San Buenaventura, but an appeal will be taken to stay the execution.

THE profits of the Richnond M. Co. (Eureka) during the past six months, after paying all expenses, have been over a quarter of a million of dollars.

THE contract awarded to Lynde & Co., on the mountain division of the Northern Pacific, W. T., calls for 500,000 ties and 10,000,000 ft. of lumber.

IT is said that 7,000 negroes in South Carolina have agreed to join the present "exodus" to Arkansas, and whole neighborhoods are being depopulated.

THE Postoffice Department issued stamps to the value of $640,000 last Saturday, the largest ever known, being 20,000,000 stamps and 6,000,000 postal cards.

THE total cost of the St. Gothard tunnel, which was opened lost Sunday for the regular passage of trains, is 56,808,620 francs, something over $11,000,000.

THE fact that the present year of grace, 1882, is to have one Sunday more than most years, is regarded by many good people as a cheerful omen for the advance of the gospel.

IT is reported that the new steamer Walla Walla will be sent from Portland to Hongkong with flour, and return with 1,000 Chinese to work on the North Pacific railroad.

COLORED GLASS.—Much has been said about the inability of modern glass manufacturers to make window glass imbued with the rich and beautiful colors peculiar to the windows of old cathedrals in England and on the continent. It is not generally known, however, that the secret of securing those wondrous tints has been discovered by one of our glass manufacturers. After a long series of experiments conducted in conjunction with Mr. Thos. Garfield, of Boston, a cousin of the martyr President, he has found that the rich effects in those old cathedral windows are owing to the poorness of the quality of the glass. Owing to the imperfect mixing of the ingredients by the old glass makers, the substance did not unite closely, and in consequence it became porous, and the minute particles of soda in the composition are exposed and act in the function of radiators, which give brilliancy to the colors of the window. In making window glass in colors now, the makers prefer to leave the surface rough, in order that by exposure to the elements it may go through the same beautifying process alluded to above.

CHANGE YOUR SEED.—The advantage of changing seed is generally recognized by cereal growers, as is shown by the importations of foreign-grown seed wheat during past years. An opportunity to purchase Australian seed wheat and New Zealand seed oats is offered by S. L. Jones & Co., auctioneers, in another column. The advertisement gives full particulars, and should be looked after.

MULBERRY CUTTINGS.—Attention is directed to the advertisement of mulberry cuttings by Mrs. S. A. Sellers, of Antioch.

The Pacific Rural Press.

[Established in San Francisco in 1870.]

This is the leading farming journal on the western half of the continent, and second to none in America. It is well printed and illustrated, weekly. Contains an unusual amount of fresh, original farm, household and family circle literature. Careful attention is paid to giving full and reliable weekly market reports. The following are among its ably conducted departments: Editorials on agricultural and other timely and important subjects of live interest to farmers and their families; agricultural, and other useful and ornamental illustrations; correspondence from various quarters of our new and rich developing fields of agriculture on the Pacific coast, embracing new hints and ideas from progressive men and women in all branches of rural industry; Horticulture; Floriculture; The Garden; The Home Circle; The Grange; Young Folks; Domestic Economy; Good Health; Entomological; Sheep and Wool; The Dairy; The Stock Yard; Poultry Yard; The Swine Yard; The Apiary; The Vineyard; Queries and Replies; New Inventions (and illustrations of new and improved machinery); Agricultural Notes; Items of General News, etc. Its columns are studiously filled with chaste, interesting, fresh and useful reading, devoid of questionable literature for old or young and fancifully alluring clap-trap advertisements. Send for sample copies.

Subscriptions, *in advance*, $3 a year. Agents wanted, on liberal pay DEWEY & Co., Publishers.
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Cylinder Printing Press for Sale.

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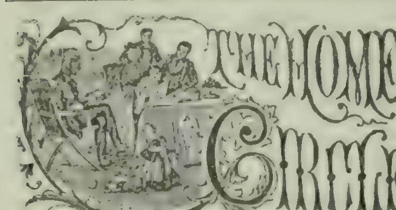

The Husbandman.

Earth of man the bounteous mother,
Feeds him still with corn and wine;
He who best would aid a brother,
Shares with him these gifts divine.

Many a power within her bosom,
Noiseless, hidden, works beneath;
Hence are seed and leaf and blossom,
Golden ear and cluster'd wreath.

These to swell with strength and beauty
Is the royal task of man;
Man's a king, his throne is duty,
Since his work on earth began.

Bud and harvest, bloom and vintage—
These, like man, are fruit of earth;
Stamp'd in clay, a heavenly vintage,
All from dust receive their birth.

Barn and mill, and wine-vat's treasures,
Earthly goods for earthly lives;
These are Nature's ancient pleasures—
These her child from her derives.

What the dream, but vain rebelling,
If from earth we sought to flee?
'Tis our stored and ample dwelling
'Tis from it the skies we see.

Wind and frost, and hour and season,
Land and water, sun and shade,
Work with these, as bids thy reason,
For they work thy toil to aid.

Sow thy seed, and reap in gladness!
Man himself is all a seed;
Hope and hardship, joy and sadness—
Slow the plant to ripeness lead.

—*John Sterling.*

A Woman's Heart.

[Written for the RURAL PRESS by HOPE HAYWOOD.]

He made me a wife and mother;
He answered my young heart's call;
He came, he sought my spirit,
He made and fastened love's thrall!

He holds me fast; shall I struggle
For aught beyond his breast?
Nay; here is my life's sweet haven,
Love hath an indwelling rest.

Back ever my heart must turn;
Humbly it sues to its own;
Love, "be ye reconciled,"
Is the clearest voice of the Throne!

San Diego, Cal.

The Ojai.

[Written for the RURAL PRESS by HORACE J. SMITH.]

EDITORS PRESS:—We pulmonary exiles come out here at an enormous expense of feeling in the separation from our social relations. Some of us have to give up business, and, financially speaking, burn our candle at both ends; that is, not only give up making money, but devote ourselves to the spending of it. Hence, as seen, light is the chief curative; if we are defrauded of sunlight in our rooms, we are a terribly swindled set. Now, our good landlord here in this lovely Ojai valley, which is the perfection of a sanitarium, especially for consumptives and asthmatics—this Mr. W. S. McKee knows how to build a sanitary cottage. He gets the first morning sunlight into each room by large windows (reaching to the floor) on the east side, and then by windows on the west side, the last lingering rays of the setting sun salute the ever cheerful room. Of course, in this kind of building, the house can be only one room wide.

These rooms are surrounded by a piazza, and on the western side this piazza is covered so as to afford a protected walk when it rains. These cottages, of which there are four, surrounding a central house, thus combine the privacy of family home life with freedom from household cares. In fact, this is the true solution of the housekeeping servant-girl question, and the wonder is that this system is not more widely adopted.

This Ojai valley is about 15 miles back from the ocean, its port being San Buenaventura, on the Santa Barbara channel. It is probably the bed of some old lake about six miles long and one and one-half miles wide. It stands 800 ft. above the sea and is rimmed in with mountains rising 3,000 to 4,000 ft. above it.

At the church sociable, held Dec. 29th, in the parlors of this home, called the Oak Glen cottages, a spirited piece was read by Mr. Montgomery, which I send you for publication:

Complaint of Diana.

Great Jupiter, weary of business, reclined.
So weary was he that he made up his mind,
That petitioners henceforth, whatever their claim,
Whether goddess or god at the door should remain
The fat office-seekers had come in a crowd,
And their clamors for places were violent and loud;
For since last election the rush was so great,
No vacant post office was left in the State.
Voters by thousands, both near and afar,
Sought the office of guiding blonde Phœbus' car.
Proposals by millions to furnish in tons
The nectar to nourish Jove's daughters and sons;
All the mail bags celestial with letters were crammed
Begging contracts to ferry the souls of the damned,
'Cross the dark river Styx. So Jove made a vow
He'd grant no more offices, and great was the row.
A caucus was held by the gods to protest.
From voters indignant great Jove knew no rest.
Bewildered, exhausted, ill-humored and sore,
He reclined on his throne with a guard at the door,
When Mercury knocking, begged humbly to state
That a lady was waiting below at the gate.

"A lady!" cried Jove, "I don't care a pin.
If a thousand were waiting, not one shall come in;
They have teased me to death with their quarrels and fights,
To secure local option and obtain woman's rights
Admit no more ladies Tell this one from me
To go home to her babies, my face she'll not see."

Quoth Mercury then (for he thought the case hard,
"No babies has this one, to judge from her card.
Her name is Diana, the maid of the grove,
The goddess of hunters, who comes to see Jove."

The god sat erect and a smile crossed his face,
And he cried out, "Quick Mercury, hasten thy pace;
Throw wide our portals Let thunder proclaim
That the fairest of daughters, Diana by name,
Diana, the chaste, from her sylvan resort
Has come to do honor to Jove and his court."

Then bright flashed the lightning, the thunders resound
To summon the gods and the goddesses round.
The hall was soon filled with their brilliant array,
While slowly and sadly the maid took her way
To the throne of her father. The god blandly smiled
To welcome to Heaven his long-absent child.

"Great father of all," thus the maiden began,
"Whose presence is awful to gods and to man,
Few words will suffice me my griefs to impart,
To make courtly speeches I know not the art.
For the woods are my dwellings. By Jove's high command,
I guard the green forests and woods of the land;
I urge the bold hunter in chasing the roe;
In danger protect him with quiver and bow
At grey dawn of morning when nature is still,
The notes of my horn are heard on the hill.
When mortals are writhing in anguish and pain,
They call on Diana and call not in vain;
The low, fevered couch, with pale death stalking nigh,
Diana is guarding unseen to the eye
But now, Oh! my father and gods, hear my woe,
Diana must leave her abode there below,
For mortals, unmindful of justice and thee,
Of her woods and her forests have scarce left a tree.
From Sol's early smile till he sinks in the west,
The axe of destruction is swung without rest;
And giants which nature for centuries nursed,
In a moment are doomed by these mortals accursed
The wide spreading oak tree, the pride of the glade,
Inviting the concert of birds to its shade,
Successful the tempest's wild fury defies,
But man wields the weapon of death and it dies.
Long ribbons of steel they have stretched on my plains
Where grazed the huge buffalo, no trace now remains,
But a steed, snorting fire, shrieks over the vale,
His dark breath of sulphur polluting the gale
So fierce is the glare of his eyeball at night
The brave t of beasts are bewildered with fright
His turbulent blood courses madly on fire,
His heart a volcano all flaming with ire.
A demon of Pluto, conjured up by men,
To affright nymphs and naiads from valley and glen;
In vain do they scatter to mountains or grot,
The shriek of the fiend is haunting the spot
The sad, pallid patient now murmurs in vain
For the soft breath of peace to assuage him in pain;
Commotion and turmoil have joined to curtail
His short span of life in that turbulent vale
No prey for my hunters on highland or dell,
My groves devastated. Oh! where shall I dwell?
The skies are my refuge, where lonely I'll mourn
The past happy days that shall never return."

She said, and the high azure vault of the skies
Resounded complaining with sobs and with sighs:
And tear-pencilled eyelids in sorrow o'erflowed,
At the maiden's sad fate in her earthly abode
But Jove, all serene, to the goddess replied:
"For thy future, my daughter, the gods shall provide.
In ages long distant thy wrongs we foresaw,
And man's disregard for thy rights and our law;
We decreed that for thee a retreat should be found,
A bright spot of beauty where joy shall abound;
A health giving Eden by soft winds caressed,
In sunshine and shadow alternately blessed.
That mountains to circle the spot should be found,
High, rugged and steep to stand guardians around;
With forest so dense that the moon's silver ray
Scarce kisses the moss thro' the leaves in its play.
That sweet, smiling valley is thine, O, my child!
Go! Guard its green forests and mountains so wild.
Not alone shalt thou dwell in the vale of our choice.
Great Neptune shall cheer thee at eve with his voice;
In tones deep and low to Diana he'll sing,
And western zephyrs his greeting will bring.
The hunter shall wake from his dream in the morn,
And joyfully answer the notes of thy horn
Disease-stricken mortals thy council shall claim,
And health shall be monarch thro' all thy domain."

He said—and the goddess in joy from on high,
Took her flight to the valley we call the Ojai.

McKee's Cottages, Nordhoff, Ventura Co., Cal.

SWEET HOME.—When two young people love each other and marry, writes James Freeman Clarke, they restore the picture of the Apostolic Church. They are of one heart and soul. Neither do they say that anything they possess is their own, but they have all things in common. Their mutual trust in each other draws all that is best in both. Love is the angel who rolls the stone away from the grave in which we bury our better nature, and it comes forth. Love makes all things new; makes all cares light, all pain easy. It is the one enchantment of human life which realizes Fortunio's purse, and Aladdin's palace and turns the "Arabian Nights" into mere prose by comparison. Before real society can come, true homes must come. As in a sheltered nook in the midst of a great sea of ice which rolls down the summit of Mt. Blanc is found a little green spot full of tender flowers; so in the shelter of home, in the warm atmosphere of household love spring up the pure affections of parent and child, father, mother, son, daughter, of brothers and sisters. Whatever makes this insecure and divorce frequent makes of marriage not a union for life, but an experiment which may be tried as often as we choose, and abandoned when we like. And this cuts up by the roots all the dear affections of home, leaves children orphaned, destroys fatherly and motherly love, and is a virtual dissolution of society. I know the great difficulties of this question and how much is required to solve them. But whatever weakens the permanence of marriage tends to dissolve society; for permanent homes are to the social state what the little cells are to the body—they are the commencement of organic life, the centers from which of necessity, all organization must proceed.

THE SEASON.—The most delightful fashion magazine we have seen is a new publication called "The Season," published by the U. S. News Co., 55 Chambers St., New York. It treats of fashions, also decorative art, fancy work, etc., and is profusely illustrated with elegant plates and engravings.

Who Did It?

[Written for the RURAL PRESS by MRS. C. I. H NICHOLS.]

"A woman did it," heads a newspaper statement of high official delinquency. "Yes, the woman gave to me and I did eat," said father Adam; and now, as then, a tempter influenced the woman. But the influence that accomplishes this demoralization of men in official positions is not one, but many. And it must not be forgotten that the men in public life are all taken from the ranks of private life—the gifted, the cultivated and the influential in social and business circles. No single cause can be held responsible for the wide-spread demoralization among public men. If "the woman" has done it, let us ask why, and how, and cast about for a cure, a preventive. If the man has done it "*alone*," let woman remember the reason given for her creation, that "it is not good that the man should be alone," and demand to share the responsibilities which he lacks moral strength to acquit himself of honorably by himself alone.

The burden of events as peoples make history rests on many shoulders. Our parts as individuals in these events may have been only in the omission to act—the having kept silent, perhaps, at a critical moment, under the impression that for us to speak would do no good—would not change the result,

"It will be foolish for me to lift a warning voice," said a young wife of my acquaintance, whose husband refused, at her earnest solicitation, to give warning of danger from the risen stream, which appeared to him trivial. But the traveler seeing them silently observing him in the distance, felt assured of a safe crossing, plunged into the angry stream and with his little boy was drowned! If she had cried out, the traveler might have thought, "It is only a woman's fears, if there were real danger the man would raise a warning voice," and the result have been the same to him as if she had held her peace. But not to her would it have been the same; not to her husband, or the public who heard the facts would it have been the same. Her own soul and the public would have recognized both as responsible, and place on him the burden of neglected duty. The duty of each, as individually responsible, was made apparent; and so too the loss and grief that came by the neglect or suppression of womanly action in matters of equal concern to both.

The above incident was recalled to mind by a recent credit to woman's influence in a position of great official responsibility—headed like the above—"*The woman did it.*" Soon the frequency of responsible trusts satisfactorily discharged by women, will make this heading as insignificant and unused as the dedications to women's weakness and inferiority have already become. God will speed the day, if good men and women co-operate to that end, when neither man nor woman will make each other the scapegoats for their sins of omission and commission.

Potter Valley P. O , Dec. 21st, 1881.

P. S.—Our Pomo Post Office is by some indirection withdrawn. The suspension will probably be temporary.

Dr. Snowden's Letter to the Young.

"Why don't you learn a trade?" We asked a young man under 21 on Santa Clara street, a few days ago the above question. He answered, "I have a trade. I sew sacks. I can make a good living." We replied that sewing sacks is not a trade. It is only temporary, well enough in its place, but it would not afford permanent employment nor guarantee a competence in your declining years. You need something better. We met a young man in Contra Costa county who seemed to be aimless and shiftless. We said, "Why don't you learn a trade?" "A trade," said he, "don't amount to much. I have a trade, but I have not worked at it for four years, and I don't know that I ever will follow it." And we suppose if he can sponge a living, or work enough to eke out a mere support from day to day, that he will be satisfied. The young man had a fine physique, apparantly a mathematical mind, and no doubt possessed mechanical talent of more than ordinary average, yet his life promises to be a failure; and why? He lacks energy. He is hiding his talent and neglecting the golden opportunity of becoming grand and noble, dignified and happy, an honor to his parents and a blessing to the world.

To the same question a young man replied, "I have a trade. I am a violinist. I play for dancing parties. I work hard and am up late at night; I earn my money." Yes, he leads an active life of idleness and folly. His trade is a miserable subterfuge. He works hard at it; drinks whiskey, (no doubt); is up late at night fiddling with all his might when he should be at home in bed.

What is the value of such a life? And what will be the end thereof? If you think you can get along well enough without a trade or profession, depending upon a clerkship, or an office at the hands of the dear people, or being a salesman, or day laborer, or looking for fortune to smile upon you, casting a golden luster upon your pathway in your declining years, you will find yourself miserably mistaken and disappointed; and your last days will be filled with regrets and reproaches; with sorrow and repining. Make up your mind that by the grace of God you will succeed. Form the resolution now, not to-morrow, that you will have a trade, an occupation or profession. That you will be industrious, temperate, benevolent, well informed on the common topics of the day, a faithful Christian, and true man in all the departments of life.

It is said that the boy is father to the man. An idle, lazy boy will make a corresponding man. The shiftless boy will make the vagabond tramp. Idleness and the evils which flow from it are the common causes of pauperism and crime. The best business men, the noblest philanthropists and the most far-seeing statesmen were taught in their boyhood to be dutiful, sober and industrious; and, armed at every point, they grappled successfully with the great problems of life.

Let us kindly say to the young lady who contemplates marriage (and what young lady does not?), beware of the young gentleman who has neither a trade nor an occupation. He may be educated and refined, and possess many social and pleasing qualities, yet in a day his wealth may take wings and leave him a bankrupt and a beggar; and what will become of you? A young woman of fine personal attraction and pleasant address married a young man of culture and fortune. They lived on the interest of their money for a season. Then their riches fled away, and as he had nothing to fall back upon for support their trials and sorrows set in. They removed to a log cabin and lived upon water, corn bread and fat bacon. He at last obtained work. The labor was great, but it prevented them from starving. Year after year he toiled, until he overworked himself and died, leaving his family in want and misery. Be careful, girls, whom you marry.

It is indeed honorable to learn a trade. In early days the young women were taught to spin, weave, and do needle work. The young men were taught to be carpenters, masons, and skillful workmen in gold, silver, brass, iron, and precious stones.

The great Apostle Paul was taught a useful mechanical trade, which he turned to a good account, as he went forth from city to city to preach the gospel of Jesus Christ. And the incarnate God, in whose person was blended a perfect divinity, and perfect humanity, according to the custom of the Rabbis, was taught the trade of a carpenter.

In referring to eminent men of our day we find that Columbus was a weaver. Howard, the philanthropist, was an apprentice to a grocer. Franklin was a printer. Burns, a plowman in Ayrshire. Burritt was a blacksmith. Grant was a tanner. Vanderbilt was a ferryman. Senator Wilson was a cobbler, and the illustrious and lamented President Garfield was a wood-chopper and plow-boy. Likewise young men, learn a useful trade. Go thou and do the same.—*San Jose Herald.*

Formation of Character.

EDITORS PRESS:—Some time since I promised a few thoughts "On Character," and closed by saying it behooves all persons to look well to their manner of living as all character is of growth, and young people imitate older ones. Since then I have, with the greatest pleasure, seen many productions of thoughtful minds on like subjects, viz: 1. "Warning to Young Men." It is most readily seen that as any one bent of the mind becomes the ruling one, the individual is growing in that direction. His power to resist that perversion daily grows weaker, until the individual, so speaking, becomes low and groveling in proportion to the perversion. Hence the necessity of restraint, a willingness to hold all faculties of the mind in due proportion.

Myrtle, in speaking of these things, induces me once more to speak on my favorite theme, "Character"—being a result of growth, there is a necessity that surroundings be in accordance with the desired growth. Sober, thoughtful persons can easily see why, in our country, so large a proportion of the young men are unfitted to be good citizens. Would it not be ridding the community of a great evil could we but unite as citizens, having the good of all in view, and by power of moral persuasion unitedly condemn in communities, through all the power of the press, through the power of all churches, uniting the moral power of the ladies of all the land against the great evil of the sale, (and not the sale only but the manufacture) of all intoxicating liquors as a beverage. Great good would be a result if every lady refused to countenance the attentions of any gentleman who liked and used ardent spirits in any quantity. Be assured, ladies, if you have not power when free over a young gentleman to convince him of his error, you will be very apt to have less as his wife.

It is natural that each boy and girl, until old enough to have learned better by contact with other people, thinks his father and mother the best of people, hence how great the evil of using intoxicating drinks at meals, cultivating, with the parents' sanction, a taste which grows stronger and stronger as the individual grows in years, until the boy is a victim of intemperance. Example is of major importance in all things. JAMES A. SMITH.

North Bloomfield, Cal.

AN advertisement reads: "Wanted—A young man to be partly out door and partly behind the counter;" and the Cleveland *Leader* asks: "What will be the result when the door slams?"

Chaff.

AMBITIOUS man: "Is there any fixed rule for writing poetry?" There is! Don't!

THE why and wherefore: "Love is blind;" and that's why they managed to keep right on with the gas turned down.

THERE is a good deal of human nature in a canary bird. He always begins to chatter as soon as the piano commences to play.

"SHE stoops to conquer." Can this refer to the fond mother who bends over her wayward boy with a number five slipper?

THERE is a whistling buoy anchored off Block Island. Oh, that all the whistling boys could be anchored in deep water far away!

THE only thing a lady dislikes about a postal card is that it is hardly large enough to allow her to show what she can do in the matter of postscripts.

"I WISH I were you for about two hours," she said to her husband with great tenderness. "And why, my dear?" he asks. "Because," she said, toying affectionately with his watch chain—"because then I would buy my wife a new bonnet."

A MILLER in Peru, Ind., fell asleep in his mill and bent forward until his hair got caught in some machinery and was yanked out; and, of course it awoke him, and his first bewildered exclamation was: "Darn it, wife, what's the matter now?"

A HUNGRY lawyer, who was dining at a hotel, shoveled the food into his mouth with his knife till he accidentally cut his mouth, which was observed by a wag seated opposite, who bawled out: "I say, Mister, don't cut that hole in in your countenance any larger, or we shall all starve."

Cheerful Women.

When men choose a wife they should select a cheerful, happy-tempered woman, no matter whether she is handsome or not. They make a great mistake when they marry for beauty and style, or for talents and accomplishments, if there is not a cheerful heart to go with them, a bright, sunny soul.

The sweetest, most lovable wives are those who possess the magic power of being bright and cheerful under almost any circumstances, provide their husbands treat them with the courtesy and due forbearance which is their right. Rich or poor, high or low, it makes little difference provided the bright little fountain of cheerfulness bubbles up like a continual spring in their hearts and scatters its drops everywhere. Was ever the stream of trouble and trial so dark and deep that the sunshine of a cheerful face falling acoss its turbidness would fail to awaken an answering gleam? No, indeed! So cultivate a joyous, cheerful, happy disposition, friends, and see for yourselves how much good you can do in this life by its aid.

No matter how cross and crabbed one may feel, no matter if the brain is filled with meditations upon the great afflictions of life, or that the stomach is drenched with pills and mixtures and tonics; just let one of these cheery women come across you, and, my word for it, she will rouse you from your fit of the "blues." The long wrinkles about your mouth will shorten, the black gloom of your brow will disappear, and almost before you know it you are laughing heartily at some little anecdote she is relating, and your desponding fit vanishes.

Ah! what a blessing are these cheerful women. How often do their little hands assuage the grief of the mourner, and their bright, sunny smiles bring sunlight to the gloomy heart! No one can estimate the good they do until the judgment-day will reveal the secrets of many aching hearts and show us how much we owe to these cheerful, hopeful, helpful, happy souls. Their own lives may have been filled with grief, but the darkened cloud revealed to them its silvery lining. They may have felt the stings of stern penury, but with the little they possessed they have wasted not one jot.

WHAT A FARMER'S WIFE CAN DO.—Mrs. Williams Hatcher writes to the Woodland *Democrat* from Mission Ranch, Yolo county, showing what a woman can do on a farm: "Now, my readers, I will give you the figures of my past year's labor. The 1st of last January I took an invoice of my fowls. I now have a better stock. My fowls consist of Brown Leghorns, Plymouth Rocks, Langhshans, Bronze turkeys and Toulouse geese. I have sold eggs amounting to $93.24; fowls, $181.56; cheese, $143.07; butter, $233.69; total for my year's labor from my fowls and cows, $651.56. So, you see, my dear readers, how a good wife may be a helpmeet to her husband. Let us all try to do something to fill up our mission here on earth, as God has given us to be helpmeets of man. Let me advise all who are doing a little business of this kind to get a book and keep your sales, and at the end of the year report to the paper.

TOOTHACHE.—There should be a remedy for toothache in every house where there are children. The following is reported by medical authority as reliable: Take of carbolic acid (saturated solution), chloral hydrate (saturated solution), paregoric, fluid extract of aconite—of each one ounce; oil of peppermint, half an ounce; saturate a piece of cotton and pack tightly in the cavity.

Young Folks' Column.

Our Puzzle Box.

Numerical Enigma.

I am composed of thirty-two letters.
My 7, 1, 8, 8, 12, 16, is a measure.
My 6, 31, 7, 8, 25, 22, 3, is a nation.
My 32, 23, 19, 4, 24, was a king.
My 26, 30, 14, 22, are small animals.
My 13, 21, 18, 31, 27, is in advance.
My 22, 5, 23, 16, 32, is to remain.
My 2, 11, 30, 10, 25, 31, 7, is the employment of many girls and women.
My 9, 17, 15, 30, 31, is a large body of water.
My 29, 20, 23, is an interjection.
My whole is a very true proverb.

A. B. C.

Curtailments.

1. Curtail a shrub and leave warmth.
2. Curtail to draw tightly and leave a sticky substance.
3. Curtail an animal and leave a mark of distinction.
4. Curtail an author of Queen Elizabeth's time and leave a bundle of goods
5. Curtail a bird and leave a brave man.

JERRY.

Diamond Puzzle.

1. Found in perpetual poverty.
2. Before.
3. To talk idly.
4. Supplications.
5. An important article of food.
6. A mineral.
7. A consonant.

JOSEPHUS.

Concealed Trees and Fruit.

1. Do, ma, please let me go.
2. Oh, Grace, dare you go over that bridge.
3. Do not let them lock the door.
4. You must go for Angeline to night.
5. Give me the map, please, I want it.
6. Auction sale, Monday, January 25th.

E. M. V.

Islands.

1. Modern, ardor, and a conjunction.
2. A quaker and an adverbial ending.
3. Modern, wrath, and a soil.
4. Part of a fish, and a masculine name.
5. A heavy weight, a consonant and a vowel.

JAMES.

Answers to Last Puzzles.

NUMERICAL ENIGMA —Lake Champlain.
HIDDEN PROVERB —A good conscience is as a stone wall.
QUOTATION ACROSTIC.– Campbell;
Osgood;
Wordsworth;
Phillips;
Emerson;
Randolph.
DECAPITATIONS.—1. Strout, trout. 2 Scow, cow. 3. Kale, ale.
REBUS.—Beloit, Wisconsin (Below it Wis.)

The Printing Press Again.

[Written for our Young Folks by Typo.]

Once upon a time there lived in the little town of S——— a boy whose energy even exceeded his means. His father was a well-to-do blacksmith, who wished that George—for his name was George Vink—would go to school until he had obtained a common school education, and then learn the blacksmith trade. George was willing to go to school, but determined to be a printer if an opportunity offered itself.

As there was no printing office in his town, George studied the harder, and when he read an advertisement in an Eastern paper, in which it was stated that for $4 he could get a small printing press, some type and ink, he concluded that here was his chance, and went to work and earned the necessary $4, and in due time obtained the printing material, and he soon learned to set the type and run the press, on that necessarily small scale. He was soon printing cards, etc., to his own satisfaction, and encouraged by his success, he purchased limited quantities of type, and finally concluded he would try to start a printing office, and so a small room adjoining his father's blacksmith shop was set apart for his printing office. It was small, to be sure, yet it contained a new $80 job press, several fonts of type, a keg of ink, and paper, cards, etc.

All the small handbills, posters, cards, etc., which were formerly sent to a town twenty miles distant, were now given to him. He improved in his business rapidly, and to make a long story short, he is now the owner of as fine a country office as is to be found in the State. He is also editor of an eight-page, five-column weekly newspaper, and the husband of a fine and intelligent lady, whose parents, some years before, upon reading a copy of his paper sent them by friends in S———, were induced by the glowing accounts of the mild climate and other advantages to leave the Eastern States for California.

Santa Cruz, Cal.

[Our young friends will see that this is a great improvement upon the other printing-press story, because the incidents are probable—even to the editor marrying a "fine and intelligent lady." We know that part is probable because we did it ourself.—EDS. PRESS.]

"COLONEL," said a man who wanted to make out a genealogical tree, "Colonel, how can I become thoroughly acquainted with my family history?" "Simply by running for Congress," answered the colonel.

A LITTLE boy remarked: "I like grandpa because he is such a gentlemanly man; he always tells me to help myself to sugar."

Good Health.

An Important Question—How do You Sleep?

One of the most important things to know about any man upon whom you are going to place any dependence, is how he sleeps. Sleeplessness may sometimes be involuntary. There may have been some shock to the man's nerves which has made him insomnolent; but sleeplessness is more frequently voluntary. Men choose to push their studies or their work into those hours when they should sleep. It does not matter for what cause any man may do this, the mere fact of not sleeping spoils his case. He may spend his nights in the theater, in the study, or in the "protracted meeting." It will make no difference; the result to the body will be the same. The sleep was not had, and for that the man must pay.

One man may do with a little less sleep than another; but, as a general rule, if you want a clerk, a lieutenant, a lawyer, a physician, a legislator, a judge, a president or a pastor, do not trust your interests to any man that does not take eight good solid hours of sleep out of every 24. Whatever may be his reason for it, if he does not give himself that, he will snap some time just when you want him to be strong.

The intellectual and moral connections of sleeping have, I think, not been sufficiently appreciated. Men and boys have been praised for "burning the midnight oil." Now this "midnight oil" is a delusion and a snare. The student who is fast asleep at 11 o'clock every night, and wide awake every morning at 7 o'clock, is going to surpass another student of the same intellectual ability who goes to bed after 12 and rises before 5. In sleep, the plate on which the picture is to be taken is receiving its chemical preparation; and it is plain that that which is the best prepared will take the best picture.

Men who are the fastest asleep when they are asleep, are the widest awake when they are awake.

Great workers must be great resters.

Every man who has clerks in his employ ought to know what their sleeping habits are. The young man who is up till 2, 3 and 4 o'clock in the morning, and must put in his appearance at the bank or store by 9 or 10 o'clock, and work all day, cannot repeat this process many days without a certain shakiness coming into his system, which he will endeavor to steady by some delusive stimulus. It is in this way that many a young man begins his course to ruin. He need not necessarily have been in bad company. He has lost his sleep; and losing sleep is losing strength and grace.—*Rev. Dr. Deems.*

People Who Whine.

There is a class of persons in this world, by no means small, whose prominent peculiarity is whining. They whine because they are poor, or if rich because they have no health to enjoy their riches; they whine because they have no luck, and other's prosperity exceeds theirs; they whine because some friends have died and they are living; they whine because they have aches and pains, and they have aches and pains because they whine; they whine, no one can tell why. Now, a word to these whining persons: First, stop whining—it is of no use complaining, fretting, fault-finding and whining. Why, you are the most deluded set of creatures that ever lived! Do you know that it is a well-settled principle of physiology and common sense that these habits are more exhausting to nervous vitality than almost any other violation of physiological law? And do you know that life is pretty much as you make it? You can make it bright and sunshiny, or you can make it dark and shadowy. This life is meant only to discipline us—to fit us for a higher and purer state of being. Then stop whining and fretting, and go on your way rejoicing.

SALT IN DIPHTHERIA.—In a paper read at the Medical Society of Victoria, Australia, Dr. Day stated that, having for many years regarded diphtheria, in its early stage, as a purely local affection, characterized by a marked tendency to take on putrefactive decomposition, he has trusted most to the free and constant application of antiseptics, and, when their employment has been adopted from the first, and been combined with judicious alimentation, he has seldom seen blood poisoning ensue. In consequence of the great power which salt possesses in preventing the putrefactive decomposition of meat and other organic matter, Dr. Day has often prescribed for diphtheritic patients living far away from medical aid, the frequent use of a gargle composed of a tablespoonful or more of salt dissolved in a tumbler of water, giving children who cannot gargle a teaspoonful or two to drink occasionally. Adults to use the gargle as a prophylactic or preventive, three or four times a day.

ENGRAVING BY ELECTRICITY.—M. Plante has succeeded in engraving on glass by means of electricity. The process is as follows: The glass is laid in a horizontal position, and covered with a concentrated solution of nitrate of potash, the liquid being retained by a shallow vessel in which the glass is placed. A platinum wire is dipped in a horizontal position in

Domestic Economy.

Nutritive Valuation of Animal Food.

In the December number of the *American Agriculturalist* we find an excellent article on this subject, by Prof. W. O. Atwater of the Wesleyan University, Middletown, Conn., from which we glean the relative nutriment of the different kinds of animal food in the following list. Estimating medium beef at 100, all the others will bear a percentage in relation to that:

Lean beef, 91; medium beef, 100; fat beef, 112; veal, 92; medium mutton, 87; fat pork, 116; smoked beef, 146; smoked ham, 157; hen meat, 94; cow's milk, 24; skimmed milk, 19; cow's cream, 56; butter, 124; skimmed-milk cheese, 159; whole-milk cheese, 151; very fat cheese, 163; hen's eggs, 72. Fresh fish as follows: Halibut, 88; flounder, 62; cod, 68; haddock, 75; alewives, 87; saltwater eels, 96; shad, 98; striped bass, 80; black bass, 87; mackerel, 91; blue fish, 85; salmon, 108; salmon trout, 96; white fish, 105; black fish, 94; red snapper, 91; smelt, 74; Spanish mackerel, 106; white perch, 89; herring, 100; turbot, 84. Prepared fish as follows: Boned cod, 107; salt cod, 102; dried cod, 341; smoked halibut, 102; smoked herring, 163; canned salmon, 107; salt mackerel, 111.

These figures will not only illustrate the relative values of lean and fat meats, but also of dry and green meats; also, the difference between fresh and prepared fishes, and, that the latter far transcend the former in nutritive value. In this respect there is nothing cheaper in the list than butter and cheese, when we take into consideration the fact that they have "no bones." My "Jolly Herring" occupies no mean position in this list of meat foods, and is only excelled by "Master Cod." This fully illustrates why, when a hungry man improvises a meal at the least trouble and expense, he sort of instinctively patronizes "herring, crackers and cheese." Salt mackerel is 11 "better" than medium beef, and only one less than fat beef, and yet to many the very name of the fish is a by-word and a reproach. In the present advanced prices of nearly everything that passes between people's teeth, it may be well to consult this list and only purchase that kind of "fuel" that will make the warmest "fire," and continue it longest.

Corned Beef.

EDITORS PRESS:—In answer to R., I will give my method of corning beef, which we have used for some years, and it always gives satisfaction. Take about eight or ten lbs. of beef (I like the brisket) put in a deep pan—something that can be tightly covered—and rub with two or three handfuls of coarse salt. Twelve hours later dissolve a piece of saltpeter, size of a small walnut, in half a cup of hot water; when cold, pour over the meat. Turn it night and morning, and baste with the pickle which will have formed, for about four days, or longer, if liked salt. After boiling, it is better if left in the liquor till nearly cold.—J. L. P., St. Helena, Cal.

New York Plum-Pudding.

EDS. PRESS:—Please inform me through your paper how to make the New York Plum-Pudding, such as is made in restaurants?—MRS. D. E. R., Benecia, Cal.

PLUM OR BLACK CAKE.—For this Christmas luxury take one pound of butter and one pound of pulverized sugar; beat them together to a cream, stir in one dozen eggs beaten to a froth; beat well together, and add one pound of sifted flour; continue the beating for 10 minutes; then add and stir in three pounds of stoned raisins, three pounds of Zante currants, washed, cleaned and dried, a pound and a half of citron sliced and cut into small pieces, three grated nutmegs, quarter of a ounce of powdered mace, half an ounce of powdered cinnamon, half a teaspoonful of ground cloves; mix all well together; bake in a well buttered pan in a slow oven for four hours and a half.

GINGER PUDDING.—Take the weight of four eggs in sifted sugar, butter and fine flour; beat the butter to a cream, stir to it the sugar, add half a teaspoonful of ground ginger (more if a strong flavor is wanted); beat the eggs, white and yolks together, for at least a quarter of an hour; add these to the other ingredients, together with the flour, very gradually, beating the mixtures well with a fork or wooden spoon all the time. When thoroughly mixed, grease well a fluted tin mould; put in the mixture and bake three-quarters of an hour. This pudding eats well cold, but for a second serving it may be cut into slices, and each slice to be again cut with a fluted tin biscuit cutter; then fried lightly in butter, served up in a pile, with sifted sugar over, and eaten with sauce.

CLAM SOUP.—Have 25 clams opened, saving as much of their liquor as is possible. Put the liquor over the fire, with water sufficient to make it palatable. Let it boil, and skim well. Chop the clams quite fine and add to the boiling liquor, with a blade of mace, if liked, and a large tablespoonful of butter rubbed in two of flour. At the last, add a quart of boiling milk, and stir all well. Beat a fresh egg up very light and put in the bottom of the tureen, over which pour the soup. Send to the table with toasted bread cut in dice.

PACIFIC RURAL PRESS

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A. T. DEWEY. W. B. EWER.

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A. T. DEWEY. W. B. EWER. G. H. STRONG

SAN FRANCISCO:

Saturday, January 14, 1882

Double Sheet—20 Pages.

TABLE OF CONTENTS.

GENERAL EDITORIALS.—Eucharis Amazonica; Pinkeye; Oats at the North; Blower's Raisins; The Wheat Outlook, 17. The Week; Pacific Coast and the Signal Service; San Mateo Horticultural Society; A Year's Work in a Los Angeles Cheese Factory, 24. State Horticultural Society Meeting; Mr. Havemeyer's Dairy Barn, 25.

ILLUSTRATIONS.—Bloom and Foliage of the Eucharis Amazonica, 17. Interior View of Mountain Side Dairy Barn, 25.

QUERIES AND REPLIES.—Parasites on Orange Scales; Vines with Long Canes; Canning Meat; Pleasant Valley; Katydids' Eggs, 24.

CORRESPONDENCE.—Jottings on Los Angeles; Placer County Notes, 18 Removing Linnets, 18-19.

HORTICULTURE.—Olive Growing; The Other Side, 27.

FLORICULTURE.—Flowering Bulbs, 19.

POULTRY YARD.—Notes on the Care of Fowls, 19

PATRONS OF HUSBANDRY.—Meeting of National Grange—No. 7., Contra Costa and Alameda Granges, 20.

AGRICULTURAL NOTES, from the various Counties of California, 20-21.

HOME CIRCLE.—The Husbandman; A Woman's Heart (poetry); The Ojai; Sweet Home; Who Did it? Dr. Snowden's Letter to the Young; Formation of Character, 22. Chaff; Cheerful Women, 23.

YOUNG FOLKS' COLUMN.—Our Puzzle Box; The Printing Press Again, 23.

GOOD HEALTH.—An Important Question—How do You Sleep? People Who Whine, 23.

DOMESTIC ECONOMY.—Nutritive Valuation of Animal Food; Corned Beef; New York Plum Pudding; Plum or Black Cake; Ginger Pudding; Clam Soup, 23.

MISCELLANEOUS.—The Convention of Fruit Growers, Fruit Dealers and Nurserymen, 26.

Business Announcements.

American Barb Wire Fencing, W. W. Montague & Co.
Keystone Portable Steam Driller, Challenge Well Auger Co.
Auction Sale of Seed Wheat and Oats, S. L. Jones & Co.
Testimonials, Warner's Safe Kidney and Liver Cure.
Kendall's Spavin Cure, Dr. B. J. Kendall & Co.
Grape Cuttings For Sale, Eisen Vineyard, Fresno, Cal.
Stencils, Stamps, Etc., Edwin Mohrig, S. F.
Italian Sheep Wash, Chas. Duisenberg & Co., S. F.
Fruit Seeds, Etc., Thomas Meehan, Germantown, Penn.
Peach Trees For Sale, W. W. Brier, Centerville, Cal.
Patchen Stallion For Sale, S. B. Emerson, Mountain View.

The Week.

The weather has been the prevailing topic this week; nor is talking about the weather such a conventional matter here as it is at the East, where such themes are chiefly used as pastimes or to cover embarassment. Here weather-talk includes all the considerations of comfort, solicitude, anxiety or dread, according to the rapidity or tardiness with which the figures of the rainfall go forward. Weather talk is also at the basis of trade, manufacturing, or financial problems. Weather adjectives are not idle words, and seldom a Californian uses them without a sensation of comfort when they are cheery, or a genuine feeling of regret when they are otherwise.

Just now the situation is one of moderate suspense. The northern end of the State is quite jubilant over the character of the winter thus far, as it has allowed the getting in of crops in fine condition, and water is ample to keep them along. The great San Joaquin valley lingers in doubt—the larger area being as yet but surface damped. The great counties south are still unmoistened. There is this hopeful indication to our mind—the continuance of winds and low temperatures, perhaps one the product of the other, but both portending activity on the part of the elements which may bring abundant rain. In the dry winter of 1877, there were chains of glorious days, bright, quiet and warm—quite different from the restless, changeable periods which now rob the sun of his warmth, and make stoves and fireplaces indispensable.

The Pacific Coast and the Signal Service.

It begins to look as though some parts of the Pacific Coast would have something of a score to settle with the weather clerk, unless he orders rain for them quite soon. The hope outheld to us that we might have a weather bureau of our own, begins to show signs of realization. At all events the Chief of the Signal Service is investigating the proposition, and if Congress furnishes the money, the Pacific Coast branch of the service may be duly established.

Lieut. C. H. Kilbourne returned Monday from a trip north, where he went to select sites for the establishment of the contemplated stations. He reports as the result of his observations, that the general path of storms upon the Pacific coast is from the west eastward, with a southeasterly trend. The storm center strikes about Victoria, and the southern outer circle of the storm usually strikes Cape Flattery, the most northwestern point on our territory, first. The full force of the storms is felt in British Columbia, where the winds work great ravage. Therefore, a station upon Cape Flattery would give the first indications of approaching storms. For this reason, Flattery is chosen as one of the proposed posts. Another station will be established at the mouth of the Columbia or on Tillamook Rock.

Another point that the lieutenant is specially instructed to investigate is at Cape Mendocino. The benefit arising from taking observations at those points can hardly be estimated, as the whole system of calculations must be based mainly upon them. There are now but two coast stations—that in this city and the San Diego station. It is thought, that in addition to these stations, another will be established at Cape Disappointment. In the event of an appropriation being passed for these stations this winter, it is believed an independent coast weather service will be established here next winter.

In another column may be found an address to the Chief Signal Officer adopted at the last meeting of the State Horticultural Society.

The need of weather warnings has been urged by our raisin and fruit driers for several years; and now that our fruit interest is increasing beyond what was contemplated when the attention of the Signal Service was first asked, it is proper that the useful measure be even more vigorously insisted upon.

It is quite time that our good friends at the East began to understand that we have a peculiar set of conditions on this coast, and rules and regulations and prophecies which answer well in their longitude will not apply here. This applies to farm work and crop growth as well as to clouds and winds. We contribute a good share to the maintenance of the Government and we must be allowed a little special dish of favor when the great boons for general distribution do not meet our needs.

San Mateo County Horticultural Society.

The fourth annual meeting of the Horticultural Society of San Mateo county was held at San Mateo, on January 3d, President Goertz presiding. The records of the Society show it to be in a good flourishing condition and good results are yet expected from it.

Good papers on different subjects were read before the Society during the past year, but from some cause or other were not published. For the next meeting three papers are promised, one from Mr. G. Burns, on the cultivation of the melon and cucumber, another from Mr. McLaren on general fruit culture, and one from Mr. G. Burr on the cultivation of the rose. It was announced that the Society intended establishing an annual flower and fruit exhibition; but though necessitated to postpone it for the time being for lack of support, still hopes ere long to make a success of it. Mr. Lauchlin McLean was elected President; Dr. D. L. Morse, Vice-President; Mr. James Burns, Treasurer, and Mr. Thomas Wood, Secretary; for the ensuing year.

THE PROPOSED TULARE RESERVATION.—The agitation against the proposed "big-tree reservation" in Tulare county is going forward, and the Visalia *Delta* is bringing forward all the proof possible of the use of the region as a mining and lumber district, and showing that as a means for the preservation of big trees it is a great failure. The Supervisors of Tulare county have telegraphed to Senator Miller asking that the project be delayed until they can forward a full statement.

THE STATE BAG FACTORY.—The jute factory is rapidly approaching completion, and it is hoped the machinery will be running within two months, when work for between 400 and 500 hands will be furnished. The raw material entering one end of the long new building constructed for the purpose will be discharged in a shower of bags at the other end. When the jute works are in operation, the female convicts, of whom there are but a dozen, will be furnished with suitable employment.

THERE are 552 men employed at the Mare Island Navy Yard, the pay-roll for whom aggregates $55,000 a month.

A Years' Work in a Los Angeles Cheese Factory.

One of the cheese factories on the rich, moist land in the southern part of Los Angeles Co. has made a report of its years' work in a local paper, and the result is exceedingly satisfactory so far as a low average of milk to the pound of cheese and the high net price received for the product are concerned. It is far better than Eastern establishments can show in several respects. The report is of the Anchor Factory, at Compton, Los Angeles, owned by J. J. Harshman, and is the record of the year 1881:

	Whole No lbs. milk.	Whole No. lbs. cheese.	Net cash to patrons.
January	53,343	6,914	$ 844 08
February	74,565	9,141	1,122 48
March	158,429	19,248	2,222 22
April	229,355	26,836	2 554 07
May	251.004	28,484	2,476 54
June	246,068	25,844	2,288 40
July	206,846	21,288	2,154 28
August	198,288	21,473	2,282 72
September	168,160	19,364	2,089 04
October	118,571	18.621	1,755 58
November	87,805	11,514	1,405 64
December	78,000	10,237	1,279 40
Totals	1,870,452	214,563	$22,463 45

Average yield, 8.71 lbs.
Net price per lb cheese, 10.47 cents.
Net price per 100 lbs. milk, $1.25.

We should like to have similar reports for the last year from all factories. It is advisable to give also the average number of cows tributary to the factory during the year.

Pacific Coast Weather for the Week.

[Furnished for publication in the PRESS by NELSON GEROM, Sergt. Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending Wednesday, Jan. 11th, at noon, for the stations named:

Date.	Olympia.	Portland.	Roseburg	Red Bluff	Sacram'to	San Francisco	Visalia.	Los Angeles.	San Diego
Thursday, 5th	1.03	.76	.30	.35	.13	.05	.00	.00	00
Friday, 6th	*.80	.49	.48	.29	.00	.06	.00	.00	00
Saturday, 7th	.00	.03	.00	.00	.00	.00	.00	.00	04
Sunday, 8th	.16	.04	.00	.00	.00	.00	.00	.00	00
Monday, 9th	.07	.05	.06	.00	.00	.00	.00	.00	00
Tuesday, 10th	.70	.80	.22	.00	.00	.00	.00	.00	00
Wed'sday, 11th	.10	.00	.24	.00	.00	.00	.06	.—	00
Total for Week	*2.86	2.17	1.30	0.64	0.13	0.11	.06	.—	04

*Report for 8 hours missing from Olympia during the week.
Dash (—) signifies too small to measure.

SMALL TREES BY MAIL.—In his advertisement in another column, Thomas Meehan, of Germantown, Pa., offers to send small apple stocks by mail. It is, perhaps, not generally known that by long experience gained in the packing of plants properly, it is possible to send any quantity in 4 lb. packages by mail, with as much certainty as by old methods of transportation. In the London *Garden* recently there was an item expressing great surprise that plants from the nurseries of the Eastern States had reached Belgium as fresh as if just taken from the ground. But they are doing this thing every day, though the public at large, both in Europe and America, does not know that it can be done.

GRANGERS' BANK MEETING.—At the annual meeting of the Grangers' bank, held on Tuesday, John Lewelling was elected President, and A. D. Logan, Vice-President. The following is the present Board of Directors: John Lewelling, J. H. Gardiner, T. E. Tynan, Seneca Ewer, I. C. Steele, J. C. Merryfield, H. M. Larue, C. J. Cressy, Uriah Wood, A. D. Logan, Thomas McConnell. A dividend of 8% was declared payable immediately. The balance of the net earnings were ordered carried to the reserve fund.

SACRAMENTO HORTICULTURAL MEETING.—In this issue will be found the conclusion of the proceedings of the Fruit Growers' convention held last month. The full report will be issued this week in pamphlet form by Dewey & Co., and those desiring copies for their own use, or for circulation among their neighbors, can secure any number they may desire, at 10c each, by addressing this office.

ON Monday night, for the third time within a week, the Los Alamos stage was attacked by robbers. This time there were three in the gang. They stopped the stage near the scene of their former exploits, and captured Wells, Fargo and Co.'s box, and took a fine gold watch from the driver, which had been presented to him by the stage company.

A SUIT in which the administrator of the estate of J. W. Sigourney, deceased, is plaintiff, and the Eureka Lake and Yuba Canal Co., defendant, involving $80,000, has been in litigation in the courts of Nevada county for 15 years, and is just decided in favor of the plaintiff. An appeal will probably be taken to the Supreme Court.

HENRY A. JONES, aged 50, brother of Senator J. P. Jones, died on Monday morning, at Gold Hill, Nevada, of gastritis. He was sick only three days.

QUERIES AND REPLIES.

Parasites on Orange Scales.

We have alluded before to the interesting observations of Alexander Craw, on the good work done by chalcid flies and other parasites of the scale insect, in checking the increase of the evil. It is reported that the Florida orange growers are contemplating similar benefits from natural enemies of the scale. Mr. H. G. Hubbard, of that State, has lately reported to Prof. C. V. Riley, U. S. Entomologist, the results of his observations on the last of November last. He writes: "The present appears to be a period of greatest increase of the chalcid parasites, and many trees are seen upon which the scales are attacked by the Chalcidæ to such an extent that the branches present the same appearance seen in the majority of infested trees during the last week of October and first of November. That is, the scales, particularly on the leaves and twigs of new growth, are nearly all one-third of full size, and have, in the case of long scale, the bright color of young scales of a late brood. This is due to the arrested growth from attacks of parasites which have not yet issued from the scales. The above refers to long scale more particularly, as in the case of chaff scale the chalcid parasites do not invariably confine their attacks to immature scales, but appear to infest even those which are adult and full of eggs; in these cases they feed either upon the eggs, or the coccid itself, or on both."

Vines with Long Canes.

EDITORS PRESS:—Will you kindly oblige me by giving insertion to the following simple questions for your numerous viticultural readers, in the hope that some of them will furnish replies either to yourself or to me at their earliest convenience?

1. Have you or any of your neighbors one or more vines trained over an arbor or trellis work, which, for shade purposes chiefly, you have allowed to grow free, with only just the necessary pruning, the same being among or near vines afflicted with phylloxera?

2. Do you know of a vine so trained having been either killed, or even injured by phylloxera?

Replies to those questions will be thankfully received, and favorable, as I suppose they will be, they will be used as the basis whereon to indicate a new, simple, economic, and profitable method of general viticulture for this State, which has been in another country successfully operated for more than 10 years already. I found the description of it in a recent Portuguese treatise on practical viticulture.—JOHN I. BLEASDALE, 613 Merchant St, S. F.

Dr. Bleasdale has read to us the matter from the Portuguese report referring to results by a system of long pruning, which gives a larger yield from the ground, and very healthy vines. If any of our readers can give experience on the points named above we may be able to give them something of interest concerning the Portuguese method alluded to.

Canning Meat.

EDITORS PRESS:—Will you please call for further communications on canning meat and game. I saw an article by Mr. Rumford in one of your later numbers, but I am anxious to know more about the matter. It has been my desire for a long time to be independent of salt meats and bacon, and if I can successfully can fresh beef and game, the problem will be solved. I am sure plenty of your readers understand the business, and I hope they will help the rest of us. Is there any good work on this subject, where I can be sure of getting good information?—COUNTRY WIFE, Pala, San Diego Co.

We shall be pleased to have the discussion go on until all experience is drawn out. We know no practical treatise on the subject.

Pleasant Valley.

EDITORS PRESS:—A number of your subscribers being interested in the communication of W. J. Pleasant in "Queries and Replies," of your issue of Dec. 24th, would be pleased to have you give his address in full. There are so many Pleasant Valleys in this State that it is hard to place any particular one.—C. W. MCKELVEY, Plano, Tulare Co., Cal.

In this part of the State there is but one Pleasant Valley, although there are many pleasant valleys. This famous fruit region is in Solano county. It is called Pleasant Valley or Pleasant's Valley. Mr. W. J. Pleasant's postoffice address is Vacaville, Cal.

Katydids' Eggs.

EDITORS PRESS:—I have been in the fruit business for three years; while pruning the trees I found some twigs with some kind of eggs deposited on the twigs. I do not know what they are. I would like to find out through your valuable paper.—G. Q. BUSH, Modesto, Cal.

They are the eggs of the "Katydid," often called a "grasshopper." The insect is described and a picture given in the RURAL of March 5th, 1881.

BELFORD has introduced in Congress bills calling on the Secretary of the Treasury for information as to the number of ounces of silver bullion purchased by the Treasury Department each month beginning with March, 1878, down to the present time. Also, to establish Bureaus of Mines and Mining, and Manufactures and Statistics.

JUDGE DAVIS, President *pro tem.* of the Senate has presented to that body the resolutions of the General Association of the Congregational Church of California, urging recognition of the rights of the Mission Indians of southern California, and they were referred to the Committee on Indian Affairs.

THE Utah legislature met on Monday. Out of 36 members, 27 are polygamists, and all are Mormons. The Governor's message recommended the separation of church and state, the abolishment of polygamy, and the right of dower for wives.

State Horticultural Society Meeting.

The last meeting was held in the hall of the Academy of Sciences, Dec. 30, Pres't Hilgard in the chair. W. L. Overhiser, of Stockton, and Chas. Neper, of San Francisco, were elected regular members. Several names were proposed for election at the next meeting.

The committee appointed to report upon the extension of the work of the Signal Service, presented the following:

General W. B. Hazen, Chief Signal Officer, Washington, D. C.:—GENERAL—We, the undersigned committee, appointed by the State Horticultural Society of California to reply to your communication of recent date, beg leave to state as follows:

We are pleased to perceive in your letter the earnest intention to promote the interests of all parts of the Union and of all classes of industry through the weather department of the Signal Service. We note, however, that thus far our coast has received the least attention and derives the least benefit from this branch of your service. It is true that our climatic conditions are very different from those of any portion of the United States, and for this reason we think that a separate system of weather forecasts for this coast must be established before any special benefit can be derived from the work of your department. We noticed with satisfaction the announcement some time ago, through the reports of the Associated Press, of your intention, with aid from Congress, of establishing a special branch of the Signal Service on this coast, with headquarters at San Francisco, for forecasting the weather for the Pacific States and Territories.

In our judgment you need a greater number of stations, especially in the northern part of this State and in Oregon and in Washington Territory. We usually get our first premonitions of a storm from those quarters. We regret to say that the forecasts of the weather for this coast during the rainy season have thus far been marked by their unreliability. We are of the opinion that, with more stations to the north of us, the reliability of the forecast would be much enhanced.

What we need especially is warning of the approach of rains in the autumn. This country is largely a fruit-producing region, and the industry is yet only in its infancy. During the autumn months the curing of raisins and drying of fruit is accomplished, and warning of the coming of a rainstorm 24, or even 12 hours beforehand, would result in a saving of many thousands of dollars to our raisin producers alone. This year the product of raisins was at least 100,000 boxes of 20 lbs. each, and in five years a product of half a million boxes may be expected, and in ten years, a million boxes. The early fall rains seriously injure the quality of the product; and if continued several days, frequently damage and may destroy the entire product. Because of the method of drying on tight trays or platforms holding about 20 lbs. each, and capable of being handled easily and quickly, a notice of a few hours of a coming rain would enable the producers to have their trays piled one upon another and covered, and thus protected from the water. When the storm is over, the trays can be again spread in the sunshine and the curing proceed.

With more stations on this coast and a central office at San Francisco authorized to give public notice of approaching storms, it would be possible to send observers at every station warning, to be forwarded by them to those in their neighborhoods most interested. The expense of this special notification would be cheerfully assumed by the parties interested, for one rainstorm on their partially dried raisins would ruin that drying, as well as injure the grapes still remaining on the vines.

We would also mention to you the service which could be rendered the large fruit-shipping interest of the State by indications of the weather in the country west of the Mississippi river to the Rocky mountains. If you could make a special prediction of 48 to 72, or more hours for the country between Salt Lake City and Omaha, it would be of incalculable value to those shipping fresh California fruits to the Eastern markets. We learn from consultation with the leading fruit-shipping merchants of Sacramento that they are now getting a partial weather report from the Platte valley once a day, but if you can give them instead the indications of the weather for that valley even 24 hours ahead it would be of much more benefit to them than the report now received. If a forecast for a longer period than 24 hours can be had, it would be proportionately appreciated, not only by the shippers, but also by the growers of the entire State who are producing for Eastern shipment. Our fruit could then be put down at Omaha in better condition; it could be sold at a less rate, and finally yield more to the producer.

We send copies of this statement to Hon. H. F. Page Chairman of the Committee on Commerce of the House of Representatives, and to our other Senators, Representatives in Congress, with the request that they endeavor to procure an appropriation for the extension of the work of the Signal Service on this coast.

MATTHEW COOKE,
C. H. DWINELLE,
R. B. BLOWERS,
E. W. HILGARD, } Com.

The report was accepted and adopted by the society.

The following resolutions were moved by Mr. Dwinelle, and adopted:

Resolved, That the Senators and Representatives of California, in the United States Congress, be requested to use their individual and united efforts in support of such measures as may be necessary to secure greater efficiency in the U. S. Signal Service on the Pacific coast.

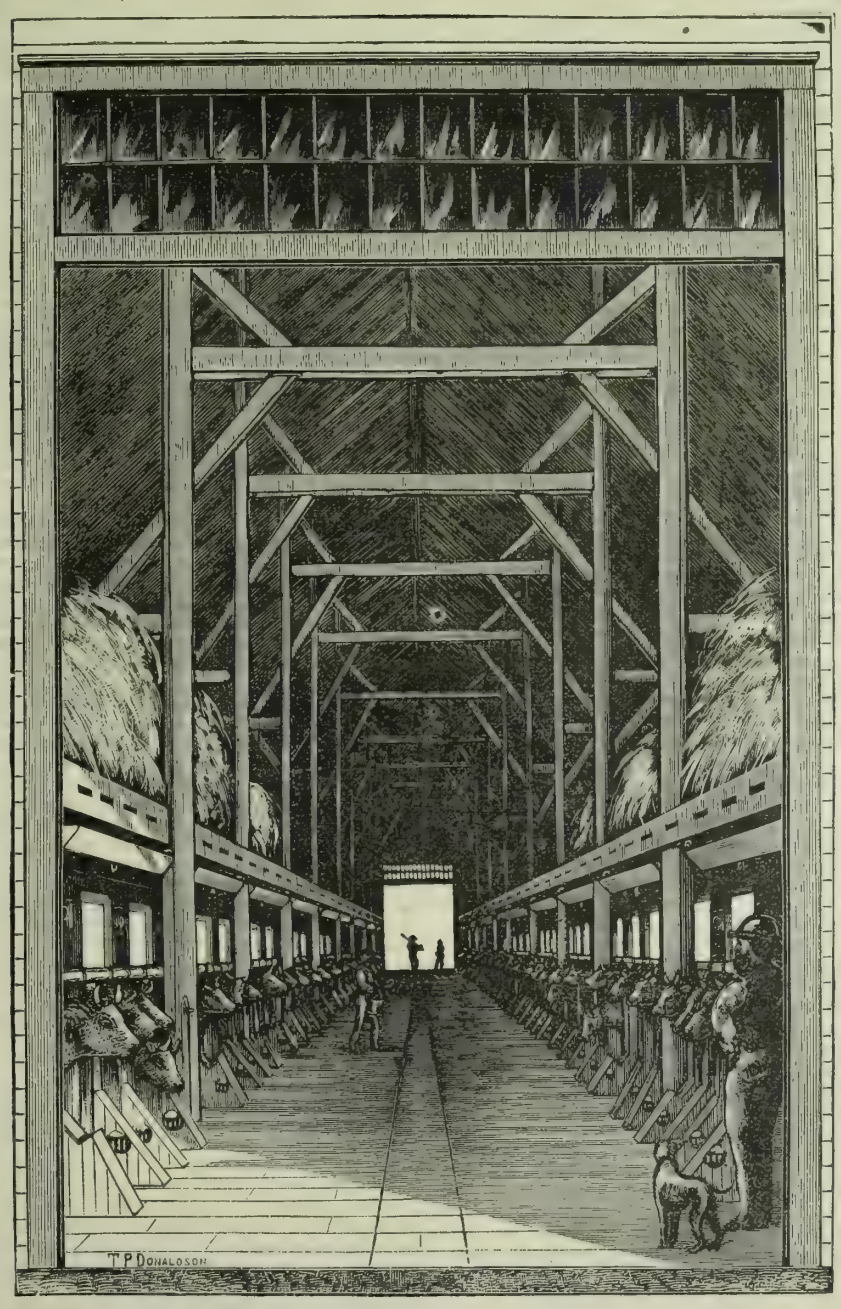
Resolved, That, as Chairman of the Committee on Commerce, the Hon. H. F. Page is respectfully asked to give his attention to the important bearing of this subject, not only upon safety in navigation, but also upon the securing of crops, and other products, which give commerce its existence.

A letter was read from Hon. C. P. Berry, M. C., accepting the appointment as representative of the society at the meetings to be held in Washington this month, under the auspices of the Commissioner of Agriculture. A vote of thanks was extended to Mr. Berry for his willingness to aid the society in this respect. Some discussion followed concerning the application of the work of the Agricultural Department to the needs of this coast, and the belief expressed by several, that the department should be represented here by an assistant commissioner, who could advise the department at Washington of the progress of the various agricultural arts, the peculiar conditions which affect growth and production here; the collection of statistics and data of other kinds, and advise concerning the choice of seeds and plants for distribution on the Pacific coast. It was thought by all that the work of the Department could be made much more valuable to this coast if it were undertaken with a better knowledge of the condition of affairs, which could only be secured through a local representative. The secretary was instructed to inform Mr. Berry of the beliefs of the society concerning this matter.

The discussion on orchard planting was opened with remarks by Mr. Webster, Mr. Hatch, and Mr. Jessup.

Mr. Isaac Collins, of Haywards, sent a letter on the subject which was not received in time for use at the meeting, but which we introduce at this place:

Orchards, to give satisfaction and remunerative returns, should occupy the best of land. First-class grain land is usually suitable. Orchard land requires depth; alluvial soil is reckoned fittest. Proper drainage is necessary. Where means and inclination to carry out a system of drainage are not convenient, to ridge the land in proper breadths by plowing to a center and planting on the crown of the ridge, is of benefit. This applies to lands that lie low and are wet in winter. No trees thrive well on stagnated, waterlogged lands. Much land has natural drainage, when possessed of a pervious subsoil. All sorts of land, in their preparation for orchards, should be thoroughly plowed and subsoiled. If that is not convenient, double plowing should be resorted to, which would give a depth of 14 inches. In good land that has been properly stirred up, large, deep pits for trees are not desirable. Young trees should be planted no deeper than they were in the nursery, and should be planted when the land is in working order, soil friable and easily comminuted. The proper distance of planting orchards is a point upon which cultivators have a wide divergence of views. A good mode, I think, is, for a pear or apple orchard, to plant 35 ft. apart; and between each tree thus planted, put peach, apricot or plum trees. Such trees fruit early, and in 15 years they could be removed, to give room for the permanent ones.



INTERIOR VIEW OF MOUNTAIN SIDE DAIRY BARN.

The proper pruning of young moved trees is of significance. On moving a young tree it loses in length at least two-thirds of its roots, and to balance the tree and obtain a vigorous growth, the year's shoots of two-year trees should be cut back to a few buds; one-year trees to two or two and one-half ft. on stem, and if properly pruned, in succeeding seasons they do not so much come in the way of the working process in plowing as longer stemmed trees. Low-stemmed trees admit a greater number on like quantities of land, than long-stemmed ones, and are not so liable to damage by heavy winds. Also, the gathering of crops is easier accomplished.

The kinds of fruits desirable to plant are of four characters—shipping, canning, drying, and domestic general market fruits. The various kinds of fruits suitable for such uses have been fully ventilated in the transactions of this society during the past period of its existence. It therefore would be superfluous even to touch on that.

The success of an orchard depends (granting that a suitable selection of site has been obtained, proper preparation of the soil been performed, a judicious selection of trees made, the proper planting done, and pruning) on a systematic and thorough cultivation throughout the season. As the trees attain age, liming and manuring should be resorted to, as the wants of trees may require; and, when the trees are four years old, the land should be cleared of all temporary bushes, and a cessation of cropping of all kinds take place, thus allowing a full use of the orchard for the trees alone.

There is a point which I wish to get the expression of the society regarding, viz.: It is asserted by some that the alternate planting of certain varieties of fruit trees which blossom simultaneously, such as Winter Nellis and Easter Beurre pears, hard and soft-shell almonds, etc. The Easter Beurre, associated with W. Nellis, has a potent influence upon amount of production and size of the latter; is asserted, with what truth, I am ignorant. It is an established fact that with varieties associated, seedlings obtained therefrom produce new varieties, but the other effects said to be produced are new to me. I would like to have the observation of members upon the subject.

Mechanics' Institute Fair.

The Secretary announced that he had been visited by a committee of the Board of Managers of the Mechanics' Institute, appointed to confer with the Horticultural Society to ascertain whether the society would take charge of the horticultural departments at the fair of the Institute next August. Upon motion, the following committee was appointed to confer with the committee of the Institute, and report the result to the next meeting of the society: E. W. Hilgard, J. V. Webster, W. H. Jessup, W. G. Klee, E. J. Wickson.

Prizes for New Roses.

A communication was received from W. A. T. Stratton, offering prizes for the origination of new roses, as follows:

Wishing to advance the interest of rose culture on the Pacific coast, and especially to induce the production of new varieties from seed, I beg to offer the following premiums:

For a perfect yellow moss rose	$500.00
" " " hybrid perpetual rose	500.00
" " " hybrid tea rose	500.00
" 12 perfect and distinct hybrid tea roses	500.00
" a perfect deep yellow tea rose	250.00
" 12 distinct and perfect tea roses	250.00
" 12 distinct and perfect hybrid perpetual roses	250.00
" a moss rose of fine quality	100.00
" a hybrid perpetual rose of fine quality	50.00
" a tea rose of fine quality	50.00
" a fine rose of any type not above mentioned	50.00

These premiums are open for competition for five years from date, and all plants offered must be healthy and vigorous, each showing the distinct formation of bud and flower. Must be grown from seed produced on the Pacific coast in open-air culture. The roses, when exhibited, must show the true character of growth, by either being exhibited in pots or a large enough section of the plant to judge of its growth and health, and subject to the examination of a committee appointed by some Horticultural Society, accompanied by such a statement of facts as may be prescribed, for their origin, etc., and after the award and payment of premiums, the entire plant or plants to be my exclusive property. Instructions as to the growth of roses from seed will cheerfully be given to all who feel an interest in the growth of new roses. And all roses grown of sufficient merit to be introduced to the floral world will have the name of the grower affixed to it, an honorable mark of distinction, that any lover of roses on our coast should endeavor to merit.—W. A. T. STRATTON, Petaluma, Cal.

The above communication was read and placed on file.

Upon motion of the President, Prof. Hilgard was invited to address the next meeting upon the "Use and abuse of the Eucalyptus."

Mr. Havemeyer's Dairy Barn.

The engraving gives the reader a glimpse of the interior of Mr. Havemeyer's dairy barn, the exterior of which we exhibited in the engravings in our issue of Dec. 31. These views are all reproduced from the Journal of the American Agricultural Association, published by the Secretary, J. H. Reallat, No. 127 Water street, New York city. The first impression which the practical dairyman will have from viewing the picture, is the immense area in the center, which is unemployed, and which, in ordinary efforts for economy, would be utilized in the storage of hay. But it must be remembered that this barn is, in fact, a sort of a cow parlor, arranged by a gentleman who is not obliged to think of economy, and who, by his use of ensilage, is not obliged to store as much coarse fodder as he would by the old system of feeding. As it is, the mows on each side above the cow stalls have a capacity of 300 tons of hay. We give the showing of Mr. Havemeyer's arrangements, not as adapted to the needs of dairymen generally, but to show what can be done toward cow comfort when one is not troubled about the cost of procuring it.

In connection with this interior view we repeat some few items of dimensions which we used in the general description of the building two weeks ago. Entering the main floor of the barn one is struck with its immensity of size, its cleanliness, absence of all odors, and its exact adaptation to the purposes it is designed to subserve. It is 42 ft. wide in the clear, and has two ranges of stalls, one on either side, numbering in all 98, while the distance between the stalls in the center is 13 ft. These stalls are 5 ft. long and 3 ft. 6 inches wide, with a gutter 1 ft. 6 inches wide and 4 inches in depth, running in the rear 5 ft. from the head of the stall, for the droppings of the cattle. Behind the stalls is a passage-way 8 ft. wide, extending along the sides of the barn. At the end of the row of stalls on the right are 10 box-stalls, 12 ft. long, 8 ft. wide, and 4 ft. 4 inches high, lined with tongued and grooved boards, in which at all times are kept some of the most valuable animals, and others when they are calving. On the left are the feed-boxes and feed-mill, and room for more box-stalls, with an entrance to the veranda which runs along the engine room, ice house and dairy. In the center of the floor, extending the whole length of the barn and connecting with the silos, entering the right of the barn at the west end, is a railroad track. The hight of the barn, from the floor to the hay-mows, is 10 ft.; the latter are 13 ft. high, and extend the length of the barn, to the roof, having a capacity for 300 tons of hay.

Connected naturally with the view of the cows, will be be an account of Mr. Havemeyer's system of caring for them. The *Journal* says that in the care of his cattle, the same thoughtful attention and judgment are exhibited on Mr. Havemeyer's farm which are noticeable in every other department. The feeding place in front of the cows is upon the floor, without any other arrangement, in order that the cattle can obtain their feed clean, and that no particles shall get into corners to sour and injure it. Here there is noticeable an entire absence of feed-boxes and all fixtures. The cattle are watered by means of a trough, which can be raised and lowered at will, and is supplied from the tanks above. When it is desired to water them the troughs are lowered, and when not in use they are raised to the top of the stall. This is quite the best system which I have ever examined for this purpose. Every cow is cleaned daily with a curry-comb and brush, the same as a horse. They are treated with absolute kindness and gentleness. A daily record is kept of the milk yield of every cow. The calf is taken from the cow when three days old, the cow being tied up in her place in the stall. The milk, perfectly sweet, is heated up to 90° and fed at this heat, which is the same as the original temperature when taken from the cow. The calf is given milk, at first four quarts every day, in three feedings, morning, noon and night, increasing the quantity as the calf grows. It is kept in a stall until ten days old, and then turned out in the morning to obtain the benefit of the sun. At a month old it is turned into the pasture. Until four months old it is fed with milk, at the end of that period being given some ground oats. Each calf is kept separate, to prevent it from sucking the others, until it is three or four months old. After the cow has calved, she is fed with meal, ground oats and corn, four quarts per day, with all the hay or grass she will eat. The milk is used after the third day, if the cow is in perfect health. Cows are allowed to go into the yard every day, winter or summer, two or three hours for exercise. They are kept in separate stalls in the winter. Each animal gets half a bushel of feed.

IT IS now thought probable that Iroquois and Foxhall will try conclusions in the spring over the Newmarket course, Eng.

The Convention of Fruit Growers, Fruit Dealers and Nurserymen.

Official Report of Proceedings and Transactions.

(Continued from Page 8—Rural Press, Jan. 7, 1882.)

Report of Committee on Ways and Means.

Your Committee on Ways and Means beg to report as follows: We find it necessary to raise $100 to reimburse the Chief Horticultural Officer for moneys he has expended in calling this convention, to wit:

Large posters and printing postal cards	$ 18 00
Postal cards	20 00
Postal stamps	16 00
Clerical help in setting postals, posters, etc.	26 00
Arranging Assembly Chamber and incidental expenses	20 00
	$100.00

We would also recommend a fair compensation to our two efficient secretaries and to the two pages for their services.

To provide for all of which we would recommend an assessment of $1.50 on each member of this convention, to be collected immediately; and furthermore, should there be any surplus, then such surplus to be donated to the Agassiz Society to use in the purchase of books and instruments for use in said society.

Your committee, realizing the great value of the book recently issued by our Chief Horticultural Officer, and fully appreciating its value as a disseminator of useful knowledge, we respectfully recommend to your honorable body that Matthew Cooke, Esq., be requested to prepare and issue a larger and more complete work, covering such ground as he deems best, and to have such work illustrated with 10 full pages of colored plates, and that this convention make such subscription for books as will warrant Mr. Cooke in preparing such a work.

Your committee has ascertained that 2,000 copies of a book of from 300 to 350 pages, with 10 pages of colored plates can be printed, bound and lithographed for $5,500.

We suggest that a subscription list of 1,500 at $5 each will make $7,500, leaving $2,000 to enable Mr. Cooke to collate throughout this State such information as he may require, and make such further investigation and experiments as he may find necessary. In view of these facts and knowing the value and need of such a work, we recommend that a subscription list be opened immediately and that the members of this Convention be requested to subscribe for as many copies as they can. Your committee believe that such a course will do more to lead fruit growers to labor for the eradication of the insect pests than any other course that can be pursued.

M. T. Brewer,
A. T. Hatch,
Geo. C. McMullin,
Wm. H. Jessup,
N. R. Peck.

The report was adopted.

Report of Committee on Dried Fruits.

Your committee on dried fruits beg leave to report as follows: One of our committee having made a canvass of three months in the Eastern States, visiting the principal cities, makes the following statement: That what he saw there convinced him that the dried-fruit interest of this State is destined to be one of much more importance than has been generally accorded to it; while our canned fruits have attracted much more attention than have our dried products, the latter is gaining favor since the introduction of evaporated fruits.

Our sun-dried or evaporated apples will find ready market on this coast, on account of the limited amount which will be produced because of the ravages of the codlin moth and other pests; while, on the other hand, pears, if properly prepared by evaporation, being pared and cut into eighths, will command a good price. Any variety of pear suitable for drying will meet the requirements.

Peaches, in consequence of the demand for canning purposes, command too high a price to make drying profitable, except in localities too far removed from canning establishments. They should be placed on the market either peeled, or otherwise, in an attractive form, so as to insure the most remunerative price.

Apricots, nectarines and pitted plums, on account of their not being produced in the Eastern States, will always command good prices.

The prune d'Agen can be made profitable, but growers must meet the competition of European products; more particularly those of France. They should be most carefully cured and packed. We have still much to learn in assorting and curing.

We believe that the fig is destined to become an important product among our dried fruits.

Our observation leads us to believe that most of our dried fruits, to become profitable for shipping to the East, should be prepared by artificial evaporation. People purchasing evaporating machines should be careful that they be not deceived by misrepresentations of interested parties regarding the drying capacity of their machines, as much loss is sometimes made thereby.

With regard to the proper packages for dried fruits, the following are recommended by the State Horticultural Society:

For peaches, apricots, nectarines
9 in.x13 in. holding 40 lbs.
8½ in.x13 in. " 25 lbs.
8 in.x12½ in. " 15 lbs.

The same size for apricots, pitted plums and prunes will hold respectively, 50 lbs., 25 lbs., 12½ lbs.

Apples.
9in.x9½x15in. to hold 30 lbs.

Small packages of light material to pack in crates of five lbs., 4½x5x9½ inches.

W. B. West, Chairman.
S. T. Chapin,
A. T. Hatch,
J. M. Hixson,
M. T. Brewer.

The report was accepted.

Report of Committee on Fruit Packing.

To the Fruit Growers' Convention—Gentlemen: Your committee represents a fruit interest second to none in the State, using fully one-half of the green fruit produced as a whole, and three-quarters of certain varieties, such as apricots, Bartlett pears, peaches, plums, and quinces. As representing such an interest we desire to bring before your body these facts:

1st—To compare favorably with foreign productions of the same character, we require a superior quality of size, ripeness and flavor.

2d—The territory we are now endeavoring to supply in competition with Eastern producers, is one that through the drouth of the past season and other favorable circumstances, has been opened in a larger measure than ever before, and can only be retained by concessions in prices of material and rates of freight that would bear a favorable comparison with those at the East, and call for a mutual understanding and agreement as to prices between the fruit grower and the canner that will fairly remunerate the grower and allow the canner the opportunity to canvass that market with a fair hope of successful competition in seasons less favorable than the last, bearing in mind that the superior manner in which the California canner is accustomed to prepare his goods, as compared with the Eastern manufacturer, will insure a preference at reasonable prices.

3d—In order to increase the foreign demand of Europe, the East Indies, Australia and China, it must be borne in mind that the greater proportion of their inhabitants are people of moderate means, who are accustomed to closer economy than the average Californian, and that a small difference in price here when increased by the natural additions of freight, long credits, insurance, etc., is increased many times before the goods reach the consumer, and if not kept down to a minimum, reduces the consumption largely.

As an example of this we would cite the apricot crop of Portugal for 1880, which although only an average one, was put upon the English market at such prices as to almost totally exclude the California apricot.

As a further evidence of the beneficial effects of moderate prices, we call your attention to the enormous consumption of canned salmon by the working classes of England, when placed at a price within their means, it being noted that every reduction in price has been followed by a corresponding increase in consumption, till at this time the enormous catch of 525,000 cases (2,100,000 dozens of cans) on the Columbia river is exported to, and sold in England, at a price to the eater of 20 cts. per can, against a consumption in 1876 of 50,000 cases, at 40 cts. per can.

4th—In order to produce the fair average remuneration to the grower, as many intervening profits as possible, such as freight packages, small and worthless fruits, etc., must be abrogated. And there must also be a certainty as to quantity and quality of the crop as a whole, and individual shipments in particular, regarding which points the canner is usually in the dark up to the moment of use.

5th—Your committee earnestly advocate the adoption of the free package, whenever practicable to the grower, and feel sure the canners will advocate it, to the extent of bearing a fair proportion of the cost—say one-half.

6th—The unanimous recommendation of the canners of San Francisco and vicinity that Sacramento river peaches be shipped in close boxes, rather than baskets, has our approval, from the fact that fully 5% of the best part of each basket is ruined, by stealing and mashing during shipment and distribution.

In this particular, we would call attention to the fact that there is no uniform weight of peaches in baskets, it varying from 20 lbs. to 25 lbs., that cannot but result in constant misunderstandings between shipper and consumer.

7th—We recommend for canners' use the following standard varieties.

Apples—Fall and Newtown Pippins.
Appricots—Royal.
Cherries—Large, white and meaty varieties.
Plums—Yellow egg, Green-gage, Coe's Golden Drop, Columbia, Washington, Jefferson, Ickworth.
Peaches—Yellow Crawford, White Heath, Yellow Cling.
Pears—Bartlett.

8th—While we are not familiar with the causes and remedies of the various fruit-pests, we perhaps are in a position better than the majority of consumers to appreciate their baneful effects, and shall at all times aid in their extermination in any manner your society may decide best.

9th—We recommend a closer and more intimate relation between the canner and producer in order that canned fruit may become like many articles familiar to us, a necessity rather than a luxury, and to this end we invite at all times a free, frank and open discussion of the points suggested in this report.

A. D. Cutler,
J. H. Morris,
Committee on Fruit Packers.

Sacramento, Dec. 7, 1881.

Experience in Insect Killing.

In answer to a request for all to hand in accounts of their experience in insect destruction, the following were received:

I have made a specialty of handling orange trees and grapevines, and I find that stirring the ground around the trees and cultivating vines continually, winter and summer, keeps the ground loose, and gives the insects no chance to lie dormant near the root of the grapevine or tree. A little chloride of lime sprinkled near the root, or anything that will kill the bug, stirred up by cultivating it in, will make an uneasy bed for the insects to sleep in, and I think it will annihilate them before the sap goes up in the spring.—A. T. Wilder, Superintendent Orange Valley, Rocklin, Cal.

Cures for Borers—Smear the parts affected with mineral tar (asphaltum); then wrap with old sacks. A sure cure is effected. To prevent the beast from injuring young trees, wrap them with strips of sacks two inches wide, overlapping the ends to fasten them.

To Destroy Scale—While the tree is dormant, wash with concentrated lye—1 lb. to 1½ to 1 gal. of water, a little more or less. Add 10 or 12 lbs. of a solution of iron (where no iron is in the soil) to 40 gals. of the above wash. Put this on with a force pump, and the apparatus invented by Dr. Chapin, of San Jose. Most of the scales will be killed; also the moss. Scrape the dead bark off before using this wash. In two weeks, more or less, use a wash of Paris green, one ounce to a gallon of water, put on with the above apparatus. In case it rains, or is followed by damp weather, the washing will have to be repeated. The above washes should not be used when the tree has foliage or fruit on it. If the owner is too indolent to wash in time, he must use coal oil, which will cost him much more. Lye will kill the foliage. Paris green will poison the fruit. Only use them when the tree is dormant.—Horace Willson, Gilroy, Cal.

Borers—Three or four years ago, my orchard was badly infested with the borers. I tried the depositing of lime, ashes and pyrethrum around the roots of the trees, all to no or little effect. I then took a sharp drawing knife, taking off all the affected bark and wood, making a clean cut into the live, healthy bark; then used the gouge and mallet to dig out those that had gone to the hard wood. I then took a thin grafting wax, melted to the consistency of paint, and applied by a paint brush, after which I wrapped the trunk from the ground to the lower limbs with strips of old sacks, tying them on with a piece of bale rope. This I found eminently successful, as when the wrappings were removed (after one or two years), there was not a borer that had escaped the knife and gouge found alive, and there must have been many. I account for this on the theory that the wrapping of the tree excluded the necessary degree of heat to hatch the eggs of the insect and nourish and develop the larvæ, and another desirable effect was the added vigor given to the tree, as it did not only heal the wound, but it grew so rapidly that it actually burst the old bark.

The currant borer is a more difficult customer to deal with, as the egg is deposited at the axil of the leaf, on small limbs, and difficult to find until he has done his devilish work. The only means I have discovered for fighting him is by close pruning of the old wood. By this process I have greatly reduced their numbers in my orchard.

The wooly aphis—This is another ugly customer and difficult to manage, even on the stalk or top of the tree, as they are of a greasy nature and almost all kinds of liquids or washes slide off of them like water from a duck's back, and, even though a tree is whitewashed with strong live lime, they will throw it off and go on building their nests and breeding right in the strong lime. The only effective remedies I have found are coal oil or carbolic acid, applied with a brush, which should be done very carefully and sparingly. The acid should be reduced, one part of acid to 40 of water.

The codlin moth—The king of all orchard pests in California. The best mode I have found to fight them off is by scraping the trees clean, and well into the ground and toward the top, of all rough bark and moss, and washing the trees with the codlin moth wash, and well pulverizing the ground, even to dust, around the roots of the trees, and removing all rubbish from beneath the trees. What I think is a good trap, is to take unthreshed straw cut in a common hay cutter, two to three inches long, and deposit it around the trees and burn the straw at stated periods during the hatching season. This being a nice, warm and safe hiding place, they will readily and quickly take to it. If this practice is adopted, I think there would be no need of bands around the trees, as the trees being smooth and clean there would be no hiding places found, and, in any event, I don't believe that one larva in a thousand finds a hiding place on the tree. The reason I recommend the unthreshed straw is, that it is open and unbroken. Wm. H. Jessup.

Haywards.

Report of Committee on Railroad Freights.

To the State Board of Horticultural Commissioners:—A committee of five was appointed (by the Horticultural convention, which was in session in Sacramento Dec. 6th and 7th last), to wit: E. T. Earl, W. R. Strong, J. M. Hixson, M. T. Brewer and A. T. Hatch, for the purpose of conferring with the railroad companies on the subject of reduction of rates of freights on fruits. Said committee to report to your honorable body.

Therefore, said committee beg to report as follows:

On the 22d day of December, 1881, the committee (with the exceptions of Mr. E. T. Earl and J. M. Hixson, who were at the time in the southern part of the State), called upon Gen'l Supt. A. N. Towne and Gen'l Freight Agent J. C. Stubbs, at Mr. Towne's office in San Francisco, where an hour and a half was spent in a discussion of the subject in its various phases. While the officers of the railroad seemed to be willing to accede to any reasonable request, your committee failed to show how the railroad company would be benefitted by making concessions (at least to their satisfaction). A guarantee of an increase of the amount of freight to any considerable extent, might be met by them with a reduction equal to 70% of the net profits arising from such increase in quantity, providing said increase resulted from or on account of said reduction in rate. Furthermore your committee saith not. Respectfully submitted. A. T. Hatch,
Chairman.

Receipts and Expenses of the Convention

Cash received from convention by M. T. Brewer	$127 75
Cash by M. T. Brewer and M. Cooke	19 10
Total	$146 85
Cash Cr.	
By printing 1,500 posters	$ 18 00
" " 2,000 postal cards	4 00
" " ½ letter circular	2 00
" 2,000 postal cards	20 00
" 1,200 one cent wrappers	13 45
" postage stamps	3 30
" labor mailing, posting, etc.	12 00
" " hired for setting up, attending to, and tending doors exhibit	26 50
" cash paid expressage	2 10
" " janitor assembly chamber	39 50
" " two pages at convention	6 00
Total	$146 85

In Memoriam.

Whereas, John B. Saul, of Oak Shade, Yolo county, has been removed by death; therefore be it

Resolved, That in him a typical horticulturist has been lost, whom California will greatly miss. Born in Ireland, early removing to America, studying and practicing horticulture under the instruction of Downing and his associates upon the Hudson, he soon became known as exceptionally well versed in the literature, and skilled in the practice of his honorable calling. In California he distinguished himself and won deserved success. His example in close attention to every detail of his calling, and perseverance in striving for the highest excellence, in the face of great difficulties, is worthy of praise and imitation by others. His loss will be sincerely felt by all who knew him. Robert Williamson, Mrs. John Bidwell, R. B. Blowers, C. H. Dwinelle, A. T. Hatch. Adopted.

Adjournment.

After the transaction of some routine business, the Convention adjourned to meet in San Jose, on the second Tuesday in November, 1882.

Earthquakes.—Dr. K. Von Fritsch, of Halle, says that the cause of earthquakes does not exist further down from the surface of the earth than 10 or 14 miles. After citing a number of instances to show how far the shock of a steam hammer or that produced by an explosive may be felt, he appears convinced that rather feeble forces produce earthquakes, which make themselves very sensibly apparent at great distances from the active center. He says that earthquakes might be and must be produced by the increase and decrease of volume of rocks under the influence of physical and chemical forces, and by concussion by the opening of crevices in rocks, and by the subsidence of masses of rock due to these agencies. Many shifts are subjected to extension stress, and when crevices occur the schists must enter into oscillations like those produced in tuning plates.

The Milky Way.—Many astronomers, from Herschel downward, have spent much time in speculating upon the structure and functions of the great stellar streams known as the Galaxy or Milky Way. This part of the heavens has recently been made an object of careful study by M. Houzeau, of Brussels Observatory. He has indicated its composition by means of curves of equal luminous intensity. Looking casually at the Milky Way, one might be disposed to think it luminously nearly the same throughout. But M. Houzeau finds it in a series of luminous plates or masses, to the number of 33, each diminishing in brightness outward from the center. These are arranged almost exactly along a great circle of the celestial sphere. The solar system is nearly in the plane of this equator, and probably near its center.

For Microscopists.—To produce animalcules for microscopic examination and study the *Scientific American* suggests the following process: Mix wheat flour into thin paste with a little yeast and cabbage water, and let it stand in a warm place until it becomes quite putrid. Mix this with water (or a little common vinegar) and examine. The time required to prepare such a paste under favorable conditions need not exceed three days.

To Clean Marble.—Mix one-quarter of a pound of soft soap with the same of pounded whiting, one ounce of soda and a piece of stone blue the size of a walnut; boil these together for 15 minutes, and then, while hot, rub it over the marble with a piece of flannel, and leave it on for 24 hours; then wash it off with clean water, and polish the marble with a piece of coarse flannel, or, what is better, a piece of an old hat.

HORTICULTURE.

Olive Growing.

After an interval of several months, which were busily employed in experiments, Elwood Cooper has prepared another chapter of his treatise on olive growing, which we reproduce from the Santa Barbara *Press*. It relates to remedies for the prevention, as well as for the extermination, of the coccus, or what is known as the black scale.

Pruning is the most essential thing, and the remedy of the greatest vital importance. If trees are properly pruned, so as to admit of free circulation of air and the sunlight, more than half the battle is made. In fact, trees in such condition, where the ground is well tilled and kept free from rubbish, are not so liable to the attack, and if attacked each scale insect can readily be seen, and should be removed without delay.

Orchardists who adopt this plan will have very little trouble, even in badly infected districts. A casual examination of several different parts of each orchard should be made as often as once a month. This can be done on horseback, or in a light wagon; and in the event of the appearance of scale insects, then a careful examination in that part, and a remedy applied to exterminate them. The insects will be found to inhabit that portion of the tree where the foliage is most dense, where the sunlight is shut out, and free circulation prevented. There is not so much in the remedy as in its application. While certain remedies may be effectual in the hands of some, in the hands of others they will not be sufficient. "*Eternal vigilance is the price of success.*" Constant watching and constant fighting is the only sure plan to prevent the spread of insect pests in localities where trees are affected.

There are doubtless very many remedies that if properly applied would accomplish the work; and the expense would not be so great as to absorb the profits to be derived from the products of well kept orchards. On young olive trees not badly affected, whale-oil soap can be applied with a stiff brush very successfully, and at cheap cost, but on large trees this plan is impracticable.

I find in French books where the subject is treated at great length, numerous advised remedies which I translate as follows: "Scraping off; powdered sulphur; petroleum; boiling water; lime water; hyposulphite of lime; wash with alkaline; smoking with coal tar." Also, "proper drainage, the tillage, removing rubbish, the lopping-off of every useless twig are necessary precautions; the application is difficult and the success uncertain where there are millions of insects. The pruning is of the greatest importance, and the orchardist who neglects this important part will find that the pests will resist all efforts at extermination."

In my correspondence several years ago with Prof. J. E. Planchon, President of the Horticultural Society of Montpelier, France, the following was recommended:

"Syringe the trees with a solution of sulphate of soda, and powder them immediately after with powdered lime—a caustic soda is then produced which destroys the insects." Bisulphide of carbon has been used with deadly effect on the most dangerous enemy to citrus fruits that was ever known. The cost is moderate and the application not difficult, so that it should attract the attention of fruit growers as an insect destroyer.

The remedies that I have experimented with are whale oil soap, a decoction of tobacco, phenyle, and pyroligneous acid.

1st. Whale oil soap, as I have already stated, can be used effectually on small olive trees at very cheap cost.

2d. A decoction of tobacco is simple, inexpensive, and if properly applied, an effectual remedy for every class of insect pests that I have come in contact with. Forty pounds of good, strong leaf tobacco, thoroughly boiled in water, will make about 80 gallons. This can be thrown upon the trees with a garden syringe, but it is necessary that the decoction should be kept, while using it, at the uniform temperature of 130°. Hotter than this will destroy the embryo fruit; less hot, less effectual. I would recommend four applications each year, until the orchards were entirely free from insects. Then, if the neighborhood was free, and proper precautions taken with pruning alone, could be kept free for generations to come. Every orchardist must grow his own tobacco, which he can do in a small way if he tends to it properly, at a cost of two cents the pound, (one acre will produce 4,000 lbs). We have, therefore, allowing two gallons of the decoction to a tree for each application, the following cost: One lb. of tobacco, two cents. Two men can boil the tobacco and syringe 100 trees daily—$1.25 for each man, and board, would be $2.50, or two and a half cents the tree, which, with the cost of tobacco—two cents—equals per tree, four and a half cents; four times each year, eighteen cents. On olive trees producing 50 gallons of berries—valued at 4 cents the pound—the whole cost of thorough cleaning would be less than 2½% of each yearly crop. On orange, lemon and lime trees about the same.

3d. Phenyle. With this remedy my personal knowledge is limited, but from the experiments made by others, I am satisfied it has very valuable properties, and don't hesitate to recommend it. It costs $1.50 per gallon, can be diluted with 50 parts of water to one part of phenyle, making the cost of the dilution for a tree wash only 3 cents each gallon.

4th. Pyroligneous acid is probably more effectual than any other known remedy, but the present cost of 75 cents the gallon makes it too expensive for common use in syringing trees. It is my opinion that it can be manufactured for 10 cents the gallon, perhaps less, then diluted one-half with water would make the admixture cost five cents the gallon. The labor in applying either in swabbing or syringing trees is much less than with tobacco, as it does not require to be heated. The most important properties that any remedy can possess, provided that it has about the same insect-destroying power, are that it should not be disagreeable to handle, no unsafety in keeping it in any place, and that it should not require to be heated to be effectual. If it is dangerous in itself, the orchardist will always be in dread; if it rquires heating to a certain number of degrees, the many little necessary preparations will afford ample excuses for delays, or if it is exceedingly disagreeable to handle, the putting-off plan will always be resorted to, until dire necessity compels its use. This remedy is not disagreeable to handle, and can always be kept at hand and ready for use. It therefore recommends itself for universal application.

To sum up, it is my conviction, based upon the results of my experiments, that there is no excuse for not keeping olive trees free from scale insects. In fact, it is great economy to do so. It is a source from which to derive an income on the one hand, and total worthlessness on the other. Those who neglect this important duty, either from indifference or the want of knowledge, will expend their money only to see it melt away before them, and will have for their reward unsuccess, discouragement and despair. ELLWOOD COOPER.

Dec. 8, 1881.

The Other Side.

EDITORS PRESS:—There is always two sides to everything. The great boom that fruit has taken the last two seasons has caused many to lose sight of the dark side of fruit cultivation, especially the growing of peaches, apricots, and grapes. To say that many have become excited and gone wild over the planting of fruit trees and vines is enough to bring the displeasure of many upon us. Many are only looking upon the bright side, counting the net proceeds of their orchards and vineyards in the future by the thousands. The excitement that now exists owing to the prices that were paid for peaches and apricots in 1880-81 will work a great injury to the fruit interest on this coast. It will be the means of scattering throughout the entire State all the fruit pests known to this coast; not only this, but many new pests will be imported.

The man who thinks he can get rich by growing peaches and apricots for two cents per pound and deliver them in San Francisco is doomed to disappointment; there is nothing but a living at those figures, even after the orchards have come to bearing. From 1877 to 1879 the average price for our apricots to the canners was 2¼ cts. per lb., or 62 cts. per box. Then the return box was in use; it was returned free of charge. Our trees then were healthy, clear of all kinds of insects. Now, if we use the return box, we have to pay for returning them, and all packages have to be disinfected before using them. Our trees are more or less injured by insects; there is danger of losing the entire crop unless great pains are taken and much expense added.

If men can pay from $100 to $200 per acre for unimproved land, plant trees or vines, wait five or six years for a crop, and then make it pay raising peaches and apricots at two cents per lb., they can beat the old horticulturist, for we could never do it. "But oh," I hear some one say, "Peaches and apricots are going to be four and five cents per lb." Well, we only hope so, for unless they do, there is no salvation for the poor man, he is ruined. The canners tell us they cannot pay even as high as four cents for apricots and peaches at the present demand. Well, we fruit producers think they can, and on that hangs the prosperity or downfall of horticulture. Unless the canners can pay at least three cents for peaches and apricots, no man can make it pay where they have to ship by rail 100 miles at the present disadvantages. Let fruit drop back to its old standard, and there will be more sick men in the fall of 1882-83, than there are remedies for. Why, dear editor, it will be worse than the Asiatic cholera, if peaches and apricots are going to be four and five cents per lb. Then we say, plant all the trees you are able to and take good care of, but do not run too many desperate chances, even at that. If the fruit is going to drop back to two and three cents, then beware of breakers. Not one out of a thousand that is now rushing wildly into the fruit speculation will be able in the fall of 1883 to sing the doxology: My land is clear and I am free.

I have had some experience in the cultivation of fruit, having made it a specialty for the last 25 years, and I know by experience that there has been too high an estimate put upon it. There are more expenses and more risks to run than in any other branch of agriculture. I know that prior to 1880 there was scarcely a living in it. At the present time horticulture in all of its branches, is threatened with total destruction. It has only been a few years since the codlin moth first made its appearance in the State. It has made more ravages in the same length of time than in any part of the world. From this on, it is going to be a constant warfare to obtain a fair crop.

It is an ill wind that blows no one any good. The fruit excitement has made the harvest for the nurserymen. Every old stick of a tree has been budded and sold for a high price. Land that would not bring $40 per acre two years ago, now sells for $100 per acre. Land that was considered worthless for orchards is now sold at high figures, and thousands of trees are being planted on land that never will produce profitable crops. We may be wrong in some of our views. We hope we are—but then this is "the other side". H. P.

Winters, Jan. 7, 1882.

TRUTH ATTESTED.

Some Important Statements of Well-known People Wholly Verified.

In order that the public may fully realize the genuineness of the statements, as well as the power and value of the article of which we speak, we publish herewith the *fac similie* signatures of parties whose sincerity is beyond question. The truth of these testimonials is absolute, nor can the facts they announce be ignored.

CUSTOM HOUSE,
SAN FRANCISCO, Cal., Oct. 28, 1881.

Messrs. H. H. Warner & Co.:

GENTLEMEN: I have been suffering for ten years with congestive attacks of the kidneys, which manifested themselves by intense pains and weakness in the back and loins. The pains were very severe, coming on in paroxysms. At times they amounted almost to convulsions. I consulted some of the best physicians of this city, two of whom make kidney diseases a specialty, and they told me that I could never be cured. Learning through a friend the good effects attending the use of your Kidney and Liver Cure in kidney diseases, I commenced taking it about six months ago, since which time I have had no symptoms of my former trouble.

J. O. Lewis

OAKLAND, Cal., Nov. 21, 1881.

Messrs. H. H. Warner & Co.:

GENTLEMEN: I have been suffering for the past four years with disease of the kidneys. I had pains in my back and loins. I was in doubt about commencing to take your Safe Kidney and Liver Cure, as I had taken so much medicine without obtaining any relief, but finally concluded it would do me no harm to try it. I can cheerfully testify that nothing has given me so much relief. I believe it to be a thorough cure for kidney troubles.

G. B. Lillie

31st & Market St.

SAN FRANCISCO, Cal., Nov. 25, 1881.

Messrs. H. H. Warner & Co.:

GENTLEMEN: This last summer I suffered with pains in my back and loins, which proceeded from an unhealthy condition of my kidneys. My business, that of railroading, is one that often induces and always aggravates any affection of the kidneys, as all railroad men know. I suffered so much that I was obliged to lay off for some time. Hearing of your Safe Kidney and Liver Cure, commenced taking it, and after taking three or four bottles found my health rapidly returning. I never felt better in my life than I now do. I am fully satisfied of the virtues of your Kidney and Liver Cure, and cheerfully recommend it to all persons suffering with kidney affections.

J. Miles

SANTA BARBARA, Cal., March 10, 1881.

Messrs. H. H. Warner & Co.:

GENTLEMEN: I have been troubled with liver complaint for the last two years, and have used all the different medicines advertised for said disease, as well as the medicines prescribed by physicians, but nothing ever reached my case. I have used two bottles of your Kidney and Liver Cure, and am now perfectly well. I can cheerfully testify that it has done all you advertise and claim for it.

H. M. Van Wirkle

AUBURN, Cal., April 21, 1881.

Messrs. H. H. Warner & Co.:

GENTLEMEN: I have been sick with kidney disease for sixteen years, and have been treated by physicians, both allopathic and homœopathic, and never was relieved as I have been by Warner's Safe Kidney and Liver Cure.

Mrs. M. E. Finley

SANTA ROSA, Dec. 4, 1880.

Messrs. H. H. Warner & Co.:

GENTLEMEN: I have used your Safe Kidney and Liver Cure, and find it all you claim for it in kidney troubles.

E. T. Farmer

President Santa Rosa Bank.

ALAMEDA, Cal., Nov. 22, 1881.

Messrs. H. H. Warner & Co.:

GENTLEMEN: I have been afflicted with rheumatism in my shoulder, and severe pains in my kidneys. I commenced taking your Kidney and Liver Cure, and after taking two bottles the pains all left me, and I have had no returns of pains since.

Chas. S. Wilcox

OAKLAND, Cal., Nov 21, 1881.

Messrs. H. H. Warner & Co.:

GENTLEMEN: I have suffered with pains in my back and kidneys for the past two years, the effects of a severe strain and cold contracted at the same time. Knowing of friends, in the East, that had been cured by using your Kidney and Liver Cure, was induced to try it, and it has proved in my case decidedly beneficial.

Geo. H. Gogg

Twentieth and New Broadway.

SAN FRANCISCO, Cal., Oct. 26, 1881.

Messrs. H. H. Warner & Co:

GENTLEMEN: I have been suffering with kidney complaint for the past seven years. My symptoms were pains in the back, also a burning sensation in two places directly over the kidneys. This was more severe when I had taken cold, as the cold always settled in my kidneys. I was treated by a physician who pronounced my case congestion of the kidneys, but failed to cure me. I have tried several remedies, but failed to obtain relief until a friend, whose father had been cured by your Safe Kidney and Liver Cure, advised me to try it. I have been taking your Safe Kidney and Liver Cure for the past three months, and have been greatly benefited.

I remain, very truly yours,

M. E. Lumby

504 Stockton St.

SAN JOSE, Cal., Nov. 8, 1881.

Messrs. H. H. Warner & Co.:

GENTLEMEN: Was afflicted with yellow jaundice very badly. Warner's Safe Kidney and Liver Cure was recommended to me. Took two bottles; a complete cure was effected. After having taken second bottle, never felt better in my life. Appetite perfected, and was enabled to rest and sleep well.

Very truly yours,

Austin S. Allen

LOS GATOS, Cal., Nov. 10, 1881.

Messrs. H. H. Warner & Co.:

GENTLEMEN: I have much pleasure in saying, that after using two bottles of Warner's Safe Kidney and Liver Cure, I have been freed from pain in the back, from which I have suffered for several years.

Thos Gray

Thousands of equally strong indorsements—many of them in cases where hope was abandoned—have been voluntarily given, showing the remarkable power of Warner's Safe Kidney and Liver Cure, in all diseases of the kidneys, liver, or urinary organs. If anyone who reads this has any physical trouble, remember the great danger of delay.

BROWN LEGHORN HENS
FOR SALE.

Parties desiring to obtain stock from this wonderful breed can do so by addressing the undersigned. I have about

Sixty Fine Hens

That I am willing to sell either as a whole or in small lots

— AT —

TWO DOLLARS EACH.

They have finished moulting and are in excellent condition. Address

WILLIAM H. JORDAN,
Oakland, Cal.

KNOW THYSELF.

GOLD MEDAL AWARDED

the Author. A new and great Medical Work, warranted the best and cheapest, indispensable to every man, entitled the "Science of Life or Self Preservation;" bound in finest French muslin, embossed, full gilt, 300 pp. Contains beautiful steel engravings; 125 prescriptions. Price, only $1.25, sent by mail; illustrated sample, 6 cents. Send now. Address Peabody Medical Institute or Dr W. H. PARKER, No. 4 Bulfinch street Boston.

THE NEW IMPROVED VANELESS

ALTHOUSE WINDMILL AGENCY.

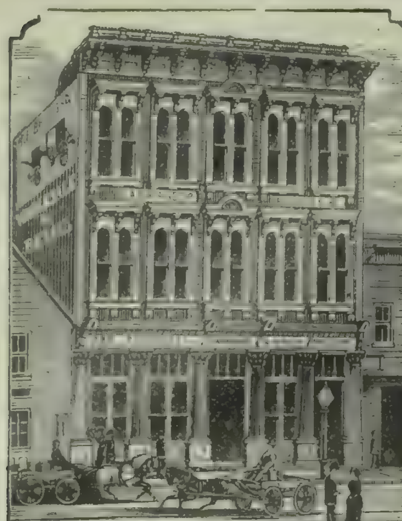
S. H. Kiler, of San Rafael, has the Agency for all Counties North of the Bay. Having them in stock orders for any size can be filled at once.

GILES H. GRAY. JAMES HAVEN.

GRAY & HAVEN,

Attorneys and Counsellers-at-Law,

530 California St., SAN FRANCISCO.



We are receiving monthly carloads of fine CARRIAGES, BUGGIES and WAGONS, of all the latest styles, direct from our manufactory, Amesbury, Mass., which we are selling, at prices and quality considered, that defy competition. Send for illustrated chart and price list, or call and examine our extensive stock. ☞ NO AGENTS EMPLOYED.

R. F. BRIGGS & CO.,
Branch House, 220 and 222 Mission St., S. F.

CALIFORNIA
Wine Cooperage Co.

FULDA BROS., Proprietors.
30 to 40 Spear St., S. F.
ALL KINDS OF CASKS, TANKS, ETC.
☞ Ship, Mining and Water Tanks a Specialty. ☜

COTTON HOSE.

RED-CROSS {Single Ply} PARAGON {Double Ply}
Eureka {Triple Ply}

FIRE AND GARDEN HOSE.

RUBBER LINED, prepared Mildew-proof, and superio to the best rubber hose for durability and strength. Can be put away for years and the strength not impaired.

Makes the best deck hose for steamers, or mining purposes yet made.

Also, rubber lined and unlined linen hose

W. T. Y. SCHENCK,
Agent for Pacific Coast,
☞ Samples sent free. 36 California St., S. F.

KNABE PIANOS

"For beauty of tone, touch and action, I have never seen their equal. *Clara Louise Kellogg.*

"THE KNABE" is absolutely the Best Piano made.

A. L. BANCROFT & CO.,
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BOONE & MILLER,
Attorneys & Counsellors-at-Law,

Rooms 7, 8 and 9
No. 320 California Street, S. F.,
(Over Wells, Fargo & Co.'s Bank.)

Special Attention Paid to Patent Law.

N. B.—Mr. J. L. Boone, of the above firm, has been connected with the patent business for over 15 years, and devotes himself almost exclusively to patent litigation and kindred branches.

ONLY $1 FOR ANY ONE OF THE 60 Choice Collections of Roses, Shrubs, Greenhouse Plants, Fruit Trees, Grape Vines, Small Fruits, Seeds, &c. For example: 12 [illegible] Roses, $1; 12 Tuberoses, $1; 12 Carnations $1; 12 Geraniums, $1; 20 [illegible], $1; 8 Apples, $1; 6 Peach, $1; 8 Grapes $1; 25 [illegible], $1; 40 Sweet Chestnuts, $1; 100 Hardy Catalpa, $1; 25 packets choice Flower Seeds, $1. Hundreds of others CHEAP, and many NEW AND RARE! and the CHOICEST collection of DIME Plants. All mailed *postage paid, and safe arrival guaranteed.* A Catalogue of about 100 pages FREE. 28th *Year.* 18 *Greenhouses.* 400 *Acres.*
The STORRS & HARRISON CO., Painesville, Lake Co., Ohio

SEMI-ANNUAL STATEMENT
OF THE
Grangers' Bank of California,
JANUARY, 1882.

Amount of Capital Actually Paid in U. S. Gold Coin, Surplus Paid Up and Reserve Fund - - $534,101.99

State of California, City and County of San Francisco. John Lewelling and A. Montpellier being duly sworn, severally depose and say that they are respectively the Vice-President and Cashier of the Grangers' Bank of California above mentioned, and that the foregoing statement is true.

(Signed) JOHN LEWELLING, Vice-President.
(Signed) A. MONTPELLIER, Cashier.

Subscribed and sworn to before me this 4th day of January, 1882.

(Signed) GEO. T. KNOX, Notary Public.

ASSETS:

Loans on Wheat, Real Estate and other securities	$1,681,259 69
Due from Banks and Bankers	21,082 68
Real Estate—(Bank's interest in Grangers' building)	77,200.00
Other Real Estate	27,772.94
Office furniture, fixtures and safe	3,000.09
Interest accrued	23,830 99
Cash on hand	83,430.76
Total	$1,917,577.06

And the said assets are situated in the following counties, to-wit: Alameda, Butte, Contra Costa, Colusa, Fresno, Merced, Monterey, Inyo, Kern, Placer, Stanislaus, Sutter, Solano, Sonoma, San Francisco, Tehama, Tulare and Yolo.

LIABILITIES:

Capital Stock paid in gold coin	$ 500,000.00
Surplus paid up, and reserve fund	34,101.99
Due Depositors—Banks and Bankers	1,282,896.31
Bills payable—Mortg'e assumed on real estate	40,000 00
Undivided net profit (1881)	60,578.96
Total	$1,917,577.06

State of California, City and County of San Francisco. John Lewelling and A. Montpellier being each duly sworn, severally depose and say that they are respectively the Vice-President and Cashier of the Grangers' Bank of California above mentioned, and the foregoing statement is true.

(Signed) JOHN LEWELLING, Vice-President.
(Signed) A MONTPELLIER, Cashier

Subscribed and sworn to before me, this 4th day of January, 1882.

(Signed) GEO. T. KNOX, Notary.

VIZELICH'S
Insect Destroyer

AN IMPORTANT INVENTION.

[From a Stockton Paper].

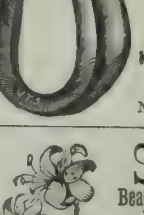
Nicholas Vizelich had his Insect Destroyer on exhibition to-day in Courthouse square before a crowd of admiring farmers. The Destroyer is a box-shaped structure, five feet wide, and mounted on wheels. The machine is supplied with two force pumps, one forward and the other aft, with a small smoke stack in the middle. The liquid with which the scale bugs and the phylloxera are vanquished is a composition specially prepared by Mr. Vizelich, and is stored within the box. In a compartment underneath the liquid is a furnace for heating it so as to melt the frost off the trees and thereby get at the bugs and insects. An additional supply of the liquid may be carried in a barrel mounted on wheels. With the pump the water may be sent through a garden hose to a hight of upwards of 50 ft. Mr. Vizelich gave partial illustrations of the working of his invention to-day in the square, and threw a stream to the top of the cedars holding the hose in one hand and working the pump with the other. The new invention worked excellently, and the farmers who watched it operate said that it would not be many months before every orchard and farm in the country would have one of Vizelich's Insect Destroyers. They can be manufactured of any size, from those designed to be worked by one man to a machine large enough to be worked to advantage by a dozen men. The warm liquid runs into the crevices in the bark of the trees and dislodges and kills the vermin.

"VIZELICH'S DESTROYER" will be made in three sizes—one of 65, one of 125 and one of 500 gallons for field use.

For full information address the inventor,

N. VIZELICH,
Stockton, California.

J. T. STOLL'S
OPEN TOP
IMPROVED HORSE COLLAR
Patented Jan. 18th, 1881.



It saves your horse's neck.
It is the best Collar in use.
It can be adjusted to any shape or any animal's neck.
☞ Send for sample. ☜

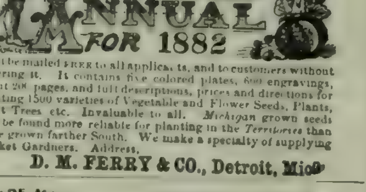
JOHN T. STOLL,
Harness and Saddle Manufacturer,
NO. 610 K ST., SACRAMENTO.

SEEDS BULBS, PLANTS.
Beautiful Illustrated Catalogue Free.

The best list of new, rare and beautiful flowers ever sent out. New Gladiolus, Tuberoses, Amaryllis, Roses, Carnations, 100 varieties of Lilies, choice Flower and Vegetable Seeds, Seeds of House Plants, &c. All seeds except rare kinds are sold in FIVE CENT PAPERS. Everything warranted true to name. See Catalogue; prices are low. The following sent by mail postpaid. 10 Gladiolus, 10 sorts named 50c. 12 Pearl Tuberoses, 85c. 10 Lilies, 10 sorts named, $1.50. All fine sorts and large bulbs. Remit currency or postage stamps. My goods have an established reputation and go to all parts of the world.

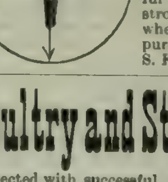
J. LEWIS CHILDS, QUEENS, N. Y.

THE CALIFORNIAN, a Monthly Magazine, is the exponent of a new, vigorous literature. It has, what is so hard to create, a distinctive flavor. Office 408 California St., San Francisco. Subscription $4 per year.



Will be mailed FREE to all applicants, and to customers without ordering it. It contains five colored plates, 600 engravings, about 208 pages, and full descriptions, prices and directions for planting 1500 varieties of Vegetable and Flower Seeds, Plants, Fruit Trees etc. Invaluable to all. *Michigan* grown seeds will be found more reliable for planting in the *Territories* than those grown farther South. We make a specialty of supplying Market Gardners. Address,

D. M. FERRY & CO., Detroit, Mich.



Calvert's Carbolic
SHEEP WASH.
$2 per Gallon.

After dipping the Sheep, is useful for preserving wet hides, destroying the vine pest, and for wheat dressings and disinfecting purposes, etc. T. W. JACKSON. S. F., Sole Agent for Pacific Coast.

Poultry and Stock Book A complete manual and reference book on all subjects connected with successful Poultry and Stock raising on the Pacific Coast. A New Edition, over 100 pages, profusely illustrated with handsome life-like illustrations of the different varieties of poultry and live stock. Price by mail, 50 cents. Address WILLIAM NILES, Los Angeles, Cal.

WINDMILLS! HORSE POWERS!
TANKS AND ALL KINDS OF PUMPING MACHINERY BUILT TO ORDER.
No. 51 Beale Street, S. F.
Send for Circulars.
F. W. KROGH & CO.
(Successors to W. I. TUSTIN.)

California Washer.

This machine is an improvement on the celebrated "Humboldt." For Families or Hotels it will pay for itself in less than six months. Lace curtains and other delicate fabrics can be washed without injury. Price $15. Manufactory, 431 Fourth St., S. F. Local or traveling Agents wanted. G. M. PURSELL, Patentee.

YOSEMITE HOUSE.
MAIN ST., STOCKTON, CAL. FIRST-CLASS HOUSE
JAMES CAVIN, Proprietor.

This House is the Leading Hotel of the City, containing all the modern improvements. General Ticket Office for the Big Trees, Yosemite Valley, Bodie, and General Stage Office for all the Southern Mountain Towns. The Yosemite Coach will convey guests from the boats and all trains, free of charge

DIVIDEND NOTICE.
San Francisco Savings Union.
532 California St., corner Webb.

For the half year ending with December 31, 1881, a dividend has been declared at the rate of five (5) per cent. per annum on Term Deposits, and four and one-sixth (4 1-6) per cent. per annum on Ordinary Deposits, free of Federal Tax, payable on and after Wednesday, January 11, 1882.

LOVELL WHITE, Cashier.

DIVIDEND NOTICE.
The German Savings and Loan Society.

For the half-year ending December 31st, 1881, the Board of Directors of THE GERMAN SAVINGS AND LOAN SOCIETY has declared a dividend on Term Deposits at the rate of Five (5) per cent. per annum, and on Ordinary Deposits at the rate of four and one-sixth (4 1-6) per cent. per annum, free from Federal Taxes, and payable on and after the 9th day of January, 1882. By order,

GEO. LETTE, Secretary.

Thoroughbred Jersey Bull
FOR SALE.

Four years old. Perfectly gentle. Pedigree can be had on application.

W. AITKEN,
Healdsburg, Cal.

VOCAL ECHOES.

($1.00). A new collection of three-part songs for female voices. By W. O. PERKINS. New and fine music; 142 octavo pages. Piano accompaniment. Valuable book for Seminaries and Female Colleges. Music by Smart, Hatton, Cherubini, Glover and others.

PARKER'S CHURCH COMPOSITIONS.
($2.00) By J. C. D. PARKER. Of the best quality. For Quartet or Chorus Choirs.

THE NEW OPERAS Are in constant and large demand, as they contain nearly all the popular airs of the day. Send $1 and receive by return mail vocal scores of "Patience," "Pirates," "Sorcerer," "Musketeers," or "Infanta's Dolls." Send 50 cts. for "Olivette," "Mascot," or "Pinafore." Or send 50 cts. for Instrumental arrangement of "Mascot," "Olivette," "Billee Taylor," "Patience" or "Pirates."

THE HOLIDAY MUSIC BOOKS
Of DITSON & CO. are standard and valuable throughout the year. Every lover of really good music should possess a copy of BEAUTIES OF SACRED SONG ($2), or Norway Music Album ($2.50).

Send $2.00, and receive for a whole year the weekly MUSICAL RECORD, with 350 pages of music, besides all the news.

OLIVER DITSON & CO., BOSTON.
C. H. Ditson & Co., 843 Broadway, N. Y.

THE MOST SUCCESSFUL REMEDY ever discovered, as it is certain in its effects and does not blister. READ PROOF BELOW. Also excellent for human flesh.

From a Prominent Physician.

WASHINGTONVILLE, Ohio, June 17th, 1880.

Dr. B. J. Kendall & Co.: Gents: Reading your advertisement in *Turf, Field and Farm*, of your Kendall's Spavin Cure, and having a valuable and speedy horse which had been lame from spavin for eighteen months, I sent to you for a bottle by express, which in six weeks removed all lameness and enlargement and a large splint from another horse, and both horses are to-day as sound as colts. The one bottle was worth to me one hundred dollars. Respectfully yours,

H. A. BERTOLETT, M. D.

Send for illustrated circular giving positive proof. Price, $1. All druggists have it or can get it for you. DR. B. J. KENDALL & Co., Proprietors, Enosburgh Falls, Vt.
SOLD BY ALL DRUGGISTS.

1,000,000 GRAPE CUTTINGS
(ROOTED VINES).
Of 150 varieties of Grape Vines, for sale at
Eisen Vineyard,
FRESNO, CAL.

M. COOKE R. J. COOKE
PIONEER BOX FACTORY,
Corner of Front and M Streets, Sacramento.
ALL KINDS OF
Fruit and Packing Boxes Made to Order,
AND IN SHOOKS.
☞ Communications Promptly Attended to. ☜
COOKE & SONS, Successors to COOKE & GREGORY

Nash Bros.'s Pulverizing Harrow and Clod Crusher.

The Best Implement for Pulverizing, Harrowing, Cultivating; using steel curved teeth, and can be regulated to any depth.

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65,000 tons capacity. Storage at lowest rate
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First-class Fire-proof Brick Building. Capacity, 10,000 tons. Goods taken from the Dock and the Cars of the C. P. R. R. and S. P. R. R. free of charge. Storage at Current Rates. Advances and Insurance effected.

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Makes to order Gents' Fine French Calf Boots from $8 to $10; Gaiters from $3 to $6; Alexis from $3.50 to $5; Mens' Heavy Kip Boots, $6; Oxford Ties, French Calf, $4; California Leather, $3.50; Men's Working Shoes from $2.50 to $3; Children's Shoes made to order. Persons in the country ordering to the amount of $12, I pay the express charges. I sell nothing but my own manufacture.

Silos, Reservoirs, Head Gates Etc.
E. L. RANSOME, 402 Montgomery St., S. F.
ARTIFICIAL STONE. Send for Circular

The Vineyard.

Varieties of Vines Cultivated in Portugal.

[Written for the RURAL PRESS by REV. JOHN I. BLEASDALE.]

41. ESGANA CAO.
See Sercial.

42. ESPADEIRO BRANCO (Minho).
Yields much and good wine.

43. FERNAO PIRES.
F. Pires de Beco.
F. Pirao.
Cultivated in Cartaxo; yields well; aromatic, early, ripens in August, and does well in all sorts of land. This is the best; the other two are inferior. Leaves five-lobed, sinuated, with wool on the under side of the leaf; footstalks reddish. Bunches about five inches long. Berries thickly set round, yellowish white, skin delicate and somewhat fleshy, juicy, sweet, with some smell. Land neither over dry nor wet.

44. FERRAL BRANCO.
Well known everywhere; suitable for trellises and espalliers. Leaves five-lobed, deeply cut, smooth on the upper side, almost smooth on the under side; footstalks almost white or slightly mixed with the color of the branch; tendrils long generally. Bunch large, often over 18 inches, almost conical. Berries elliptic shape, color of olive oil, or slightly greenish; skin thin, leathery and somewhat fleshy, plenty of juice, taste peculiar and slightly sweet. A table grape; wine none of the best. Land rather dry.

45. FOLGOSAO (Douro).
A good wine grape on strong land.

46. FORMOSA (Villa Maior).
Diagalves (Seabra).
A well-known kind, especially in the vicinity of Lisbon and all through the country bordering on the river Tagus, and much esteemed both for the table and for export. It is moderately productive, late, ripening in September; prefers strong land. Leaves five-lobed, serrated; footstalks reddish. Bunch small. Berries round, close set, amber color; skin fine and rather fleshy; juicy, sweet, and having a smell of its own. Table, and good wine. Common land.

47. GALLEGA.
Met with in the old vineyards. Yields moderately; forms a very large stock and requires strong land.
Alarte says that Gallega vines are good for sandy lands, because there they yield both abundant grapes and good wine, whilst on rich lands they run into wood and bear little.

48. GOUVEIO.
Is the name by which the Verdelho is known on the Douro; and as this latter name is more generally known, I reserve it till I reach that word.

49. JANEANES.
Sem Nome.
Alarte mentions this kind, which, according to him, is called Sem Nome in other parts; a kind good for high land, because it is very early. Its grapes are very handsome, excellent for the table, and its wine sweet and white. It is not quite reliable as a bearer. It is unfit for low, damp land.

50. JOAO NAIBO (Cartaxo).
Moderately productive, late, end of September, preferring strong land.

51. LABRUSCO.
Mentioned by Aguiar among those cultivated at Cartaxo. Sufficiently productive, late, end of September, aromatic, slightly uncertain; needs strong land.
N. B.—It certainly is not the American Labrusca (*Vitis silvestris*).

52. LEIRA.
Cultivated at Cartaxo. A very poor bearer; very early, middle of August; suits any kind of land.

53. LOUREIRA.
A kind known on the Minho, said to impart to wine a flavor of laurel.

54. LUZEDIA.
Also on the Minho. A good Branco Lameiro yielder, and requires to go high.

55. MACEDO.
There is on Traz-os-Montes a white kind having this name.

56. MALVASIAS.
The Malvasias constitute a most important group, and all of the first quality, which, in the vineyards of Portugal, are represented by a number of varieties.
D. Sisnon de Roxas, in his Ampelography, places the Malvasias in tribe VI (Albillos Dapsiles). In variety 37, Malvasia Dulcissima, whose characters are: "Rods erect; leaves yellowish green; grapes middle-sized, very round, white, very succulent and sweet."
Seabra describes in the following manner the third variety: Malvasia (general name)—Leaves five-lobed, serrated, with some wool on the lower side; footstalk of lighter color than the rod. Bunch eight or nine inches long. Berries the size of an ordinary olive; not close together (*raro*)—(*aloirado?*); skin a little fleshy; juicy, sweet and smelling, and yields good wine; and better still if mixed with one-half Muscatel. He says this kind differs little from those which in Beira and Estremadura are called Donna Branca, Alvaro de Toire, or Boal Cachudo.
Count Odart, in his Ampelography Universal, mentions a great number of varieties of Malvasias, not only of the white, but also of the colored; but many of them do not correspond exactly with the general characteristics just mentioned, notwithstanding that they all have a sort of family likeness, just as happens with the Muscatels.

57. MALVASIA GROSSA.
Has already been described under the name of Codega.
The variety most common in our vineyards is the Malvasia Fina, or Malvasia da Passa (raisin), which comes in early, is delicate, failing in some localities, very subject to oidium, but yields very fine wine.
Gyrao says that Malvasia Penaguiota gives much good wine and needs strong land. It is met with in almost every district of the kingdom, even in the Minho, where, however, it is grown only for the table.

58. MANTHEUDO.
Gyrao includes this in his list of the vines of Algarve, saying it produces good grapes for the table, throws out good rods, and needs strong land and long pruning.

59. MARQUEZURHA.
Grown in the Minho.

60. MAROTO.
Only suitable for sandy land, and even then it is not of much good.

61. MELHORIA.
White variety in the Minho. Yields much good wine; needs good land and to go high. There is also a black variety.

62. MOLINHA.
Grown in Cartaxo. A poor bearer; late and very subject to oidium.

63. MOLIN.
Mentioned by Aguiar among the sorts grown at Santarem, as being a good bearer; early—July to September; good strong lands.

64. MUSCATELS.
Many are the varieties of Muscatels; yet with us the most common, which are met with all over Portugal, are the *Moscatel branco pequeno* (the small white) from which the most spiritous and aromatic wine is usually made, and the *Moscatel de Jesus*, with great long straggling bunches, and oval berries; not to mention the colored kinds, the red and black. Count Odart, in his Ampelography, enumerates and describes nearly all, if not quite all the known varieties, many of which are to be met with in our best planted quintas and orchards; but as the present purpose is to mention only the kinds cultivated on the great scale in our leading viticultural districts, I will not go into so minute a description, partly at least for want of sufficient elementary materials for the descriptions. The Muscatels form the XV tribe of D. Roxas de Clemente; Moscatelles (Apianæ); and in the first variety, No. 101, we find *Moscatel branco* (Moscatel menudo blanco—*Generosa*). The description of it given by Herrera is perfect: *Vitis vinifera*, the most excellent of all, berries yellowish, green, beautiful, medium sized, juicy, round, here straggling, there close together, very sweet, with a muscat flavor. Vitas alpina, of Pliny. Seabra describes the most common sorts as follows: 1st. *Moscatel branco* (general name). Leaves, 5 lobed, serrated, smooth, with footstalk color of the rod or white. *Berriches*, a palm long—berries close set, round, white, drawing towards olive oil color; skin rather thick, juicy, smell and taste peculiar and sweet. Good for the table, for raisins, and it yields excellent wine. Its land should be medium between wet and dry.
N. B.—It is early and very subject to *oidium*.
2d. Mascatel-de-Jesus, (general name). Leaves 5 lobed, serrated, almost smooth, with footstalk red. *Bunches*, two palms long, (about 18 inches). *Berries*, large, oval, scattering, amber-colored, skin fleshy, not very juicy, tasty, sweet, without smell. The same uses as the foregoing. Land medium between wet and dry.
N. B.—In their proper place we shall treat of the red and black varieties.

65. MOURISCO BRANCO.
Met with in the vineyards of the Douro of Traz-os-Montes, of Beira, of Algarve, and other parts. Seabra describes this kind under the name of *Mourisca*, thus:
"Mourisca (name common in Beira and Estremadura)—Rods chestnut color. Leaves five-lobed, with the middle lobe very large; woolly on the under side, and footstalks same color as the rods. Bunches a palm long and thick. Berries close set, large, of the size of a hazelnut, amber-colored; skin very thick and fleshy; little juice, sweet, with sufficient roughness. It cracks in the mouth and ought to serve only for hanging up and keeping for winter use."
N. B.—This last observation of Seabra's is not strictly just; for, according to my experience, the Morrisco Branco gives 65% of must, of density 1,100; and of glucometric degree, 12° at the end of August. It is a beautiful kind, bearing bunches of more than five pounds each. The wine it gives is generous. The best method of pruning is to spurs, or from short to middling long.

I may add what Alarte has to say about this kind: The Mouriscas are good for substantial lands; in poor land it is no good. It is a very uncertain bearer; some years it bears none at all; but when at its best, it bears a lot, and the wine is exceedingly full-bodied and strong. Of this kind, some are white, others red; useful only for hanging up, not for wine.

[TO BE CONTINUED.]

ILLINOIS railroads have all adopted the new schedule drawn by the State Commissioners.

The Wheat Growers' Meeting.

On Monday the Wheat Growers' Association of California met at Grangers' Hall, corner of Davis and California streets. President H. M. LaRue took the Chair and stated the object of the meeting to be the taking of steps for the perpetuation of the Association.

The various members on the committees appointed at the last meeting to distribute circulars containing the objects of the Association and to drum up members from among the wheat growers, reported that they had met with but slight encouragement, the farming communities being careless in consequence of the high prices ruling and the higher expected.

A motion by Mr. Paulsell, of Stockton, that the committees in the various counties throughout the State be instructed to refund all moneys received from subscribers and that the Association disband, led to a general debate.

Captain Nelson's views were that without a membership of 500, the Association would not be a success, and that as only 31 had subscribed, it was useless to try further. He thought the farmers could handle their own wheat through the corporate Grange.

Dr. Booth, of Stanislaus, said that there was a necessity for some kind of an organization in the State for the protection of wheat growers. There were onerous burdens and bad laws to be got rid of, and nothing short of a well-organized association could accomplish anything. He thought that it was time the farmers should be up and doing something for themselves. He wanted one more trial for the associati n.

Mr. Ostrander, of Merced, objected to the abandonment of the project. He knew of quite a number who were ready to join as soon as they saw the association was likely to prove a permanent institution.

Mr. Paulsell said he was strongly in favor of perfecting the organization, and simply made the motion to abandon it to test the sense of the meeting. He thought that not one in the room could tell within 400,000 bushels of the amount of wheat in the State, or within 10,000,000 of the number of sacks. With a perfected organization, statistics would be gathered, and each member could be as well informed as the buying speculator as to the prices and prospects.

On motion of Mr. Ostrander, the motion to abandon was indefinitely postponed.

The present Canvassing Committees were continued until the next meeting of the association.

Dr. L. M. Booth was added to the Stanislaus County Committee.

The Secretary was instructed to notify by letter, at least 10 days before the next meeting, all the original subscribers, of the time of the meeting, and that their attendance is necessary.

The President appointed the following Canvassing Committees in the wheat-growing counties, where none exist:

Tulare—Joseph Goodall of Hanford, Mr. Maples of Tulare, E. Jacob of Visalia, R. Daugherty and Harvey Gray.

Fresno—J. D. Ruven, J. D. Collins, Frank Duce, Thos. Hughes, —— Dalton.

Kern— —— Baker, Geo. V. Smith, Wm. Nelson.

Monterey— —— Flint, J. D. Carr.

Napa—Alex. Scott, George Cornwall, A. J. Rainey, J. W. Reams.

Solano—John Denning, J. W. Dudley, C. C. Agee, J. B. Yount, Henry McCune.

Yolo—C. F. Reed, D. M. Hershey, N. Miner, J. H. Harlem, Geo. H. Swingle, G. W. Scott.

Sutter—S. P. Wilson, Geo. Ohleyr, Wm. Walton, A. L. Chandler, B R. Spilman.

The Secretary was authorized to have 1,000 prospectus circulars printed for the use of the Canvassing Committees.

The association, after instructing the Secretary to inform the Committees on Membership throughout the State of their re-appointment, voted to adjourn to the second Monday in April.

Vine Planting.

Mr. G. G. Briggs, of Davisville, gives the *Record-Union* his advice about planting grape vines as follows: I prefer cuttings to plant in vineyard to rooted vines. I make my cuttings of currant old wood, about three ft. long. If the soil is rich and moist, the vines may be planted, say 10x10; if less moist, they should be planted farther apart, say 10x12 or 10x16. I lay out my land with a plow, running furrows, say 10 ft. apart, and crossing these at right angles at the distance apart it is intended to plant the vines the other way. In laying out the land, skip every 21st row or furrow, so as to make just 400 vines in each block, and have roads around each block. At the intersection of the furrows, dig holes 20 inches deep and 20 inches long, and the width of a shovel. The holes should be dug all on the same side of the furrows, or in a corresponding angle of the intersecting furrows. The butt of the cutting is placed from the intersection, bringing the top at the exact intersection, with two buds above the surface. The end of the hole at the intersecting part must be perpendicular, so as to give the top of the vine a perpendicular position from the elbow of the vine at the bottom of the hole. To make this elbow when the vine is placed, slip the foot on the cutting and cover with soil and tramp down. I have found this mode of planting the most successful. It gives a larger amount of roots than perpendicular planting, and the roots are low enough below the surface to be out of the reach of ordinary drought, and the same time none are so deep as to be cold and slow of action in circulation. In covering, be careful to place the soil close about the perpendicular part of the cane, and up full with the general surface, but back from this part the hole may be left in the form of a sink to catch and hold moisture during the first rainy season. I would have my land ready to plant as soon as the soil is in condition, and cuttings can properly be taken from the vines. Early planting is the best. Thorough cultivation must be the invariable rule, and the soil must be kept free from weeds.

The Increasing Use of Glass.

There seems to be an impression of late that glass must soon come into a much more general use than it now obtains. It has been suggested as a suitable material for water mains, for street lamp-posts, and for many other purposes for which cast iron is now used. Mr. Siemens proposes to prepare a toughened glass for these purposes. He claims that he can prepare a glass which will be much stronger than iron castings, imperishable and incorodible. The cost per pound, allowing more profit to the maker than can be obtained from iron, is twice as much the cost of the latter, but the specific gravity is so much less that the consumer will be able to obtain glass articles about 33% cheaper than similar goods in cast iron.

Some of the Pittsburg glass makers are proposing to use it in the form of blocks, like granite or marble, for structural purposes. One writer says: "Perhaps not one builder or contractor in 10, if told that the common grades of glass have a crushing strength nearly four times as great as that credited by experienced engineers to the strongest quality of granite, would accept the statement as true. Yet it is a fact, and being so, the query as to why glass has not received more attention from architects as a structural material naturally suggests itself. A reporter had a talk with several prominent glass manufacturers on the subject, and in answer to an interrogatory as to whether blocks of glass could be made in suitable lengths and sizes and so annealed as to be utilized in the construction of a building in place of stone, they said that it could be done. Said one of these gentlemen:

"'This question has been considered by myself a number of times, and, although I do not want to advocate the absolute abolition of brick and stone, yet in the erection of art galleries, memorial buildings, etc., a structure composed of blocks of glass in prismatic colors would be alike a unique, beautiful and lasting structure. With the numerous inventions which have come into use of late years in connection with the production of glass, the cost has been gradually going down while the quality of the fabric is steadily becoming better. One objection which would be raised to the durability of a glass house, might be that the blocks would not take a bind or adhere together with common mortar. This objection can readily be set aside by the use of a good cement, and when completed the structure would stand for ages, barring extraordinary accidents, or, mayhap, cataclysm. As to the cost of a glass house, it can be kept down to but a small percentage above the price of cut granite, as there are many points where saving gains can be made. Thus, for instance, in building with stone, you have to pay the stone masons, and when it comes to elaborate examples of carving, in Corinthian pillars, collars and capitals, etc., why, the work is rather costly, as compared with glass, when the latter can be molded in any shape or form, and the work accomplished in much less time. I am convinced that the time will come when we will see such a building erected.

BULLET MAKING.—The manufacture of bullets is not so simple as it used to be. At Woolwich, the melted metal is poured into a receiver, and as soon as it solidifies, but before it is cold, it is forced by hydraulic pressure through cylindrical holes in the form of long strings. This process is to prevent the formation of air bubbles in the bullet, which would cause it, when fired, to swerve from its course. The leaden strings are thence carried to the bullet-molding department, where they are cut into lengths and roughed, then shaped in one machine and finished in another. They were formerly plugged with wood, but now plugs are prepared from a special powder, which solidifies after being pressed into form. For sharpshooting, great care is observed to obtain bullets of uniform size, shape and weight, and to use powder of a known explosive force.

TO REMOVE caustic stains—or such as will not yield to ordinary appliances—1st, take of chloride of mercury two drams; hydrochloric acid, two drams; dissolve. This must be applied to the stain with a camel's-hair pencil, and the linen, paper, etc., immediately plunged into water, when the stain will be removed. Let it be afterwards dried in the sun. 2d, if a small piece of the iodide of potassium is rubbed on the part (which must be previously wet), it will immediately decompose the blackened oxide and convert it into the iodide of silver, which is soluble in water, and consequently may be discharged by washing. The above process will answer equally as well for linen, muslin, etc. Hot water dissolves the iodide much quicker than cold.

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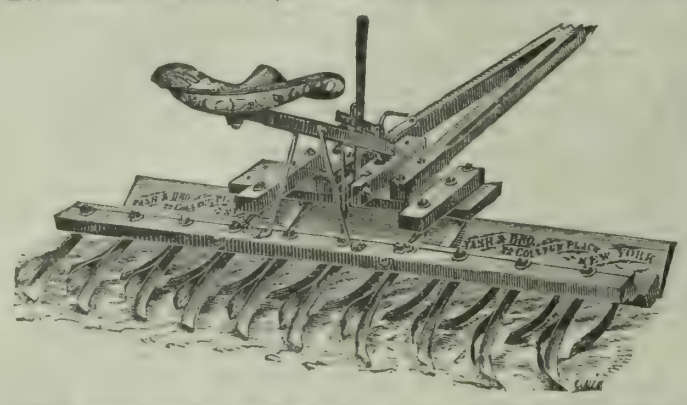

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ACTS DIRECTLY upon the great nervous and organic centres, and *cures by a natural process of revitalization.*

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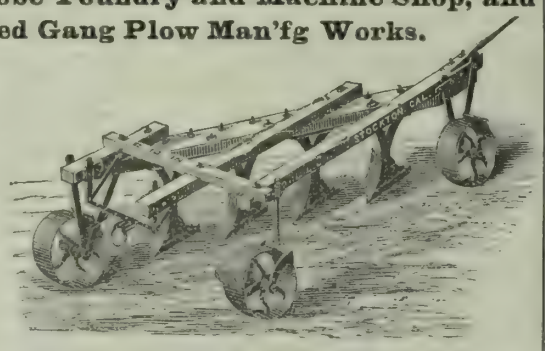

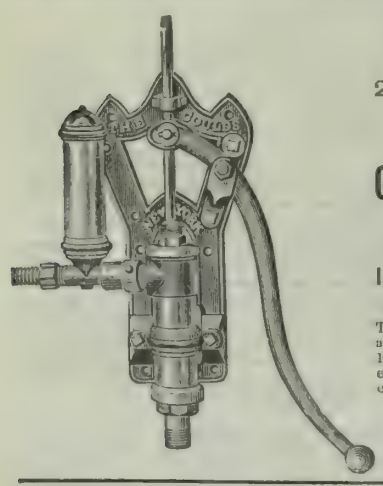

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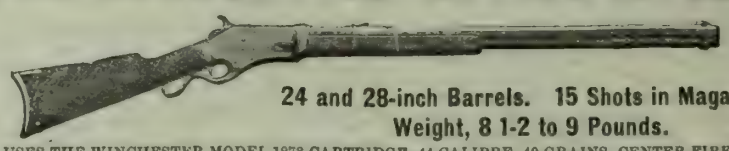

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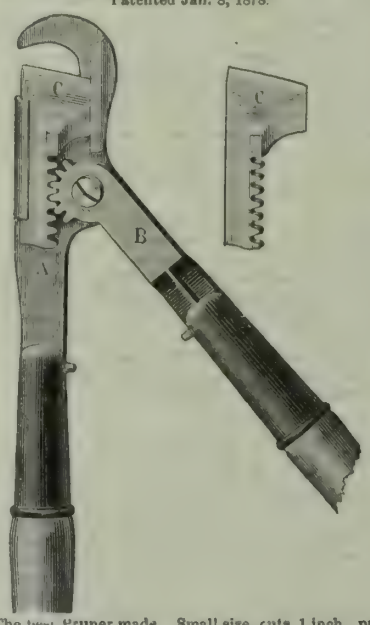

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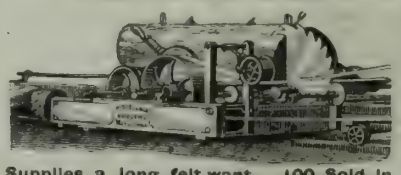

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209 Percheron Horses

Arrived in New York Aug. 25th

And under Customs valuation

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These horses were imported by

M. W. DUNHAM,

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One-Fifth of All Imported French Horses Now Living in America.

During the past 17 months 360 STALLIONS AND MARES have been imported from France to this establishment, being MORE than the combined importations of all other importers of Draft Horses from all parts of Europe for any one year.

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—AT THE—

GREAT CHICAGO FAIR, 1881,

In COMPETITION with the LARGEST and FINEST collection of CLYDESDALE HORSES IN AMERICA,

M. W. DUNHAM'S

Herd of Percherons

WAS AWARDED THE

1st PRIZE—$1,000—and GRAND GOLD MEDAL.

His Mare **"Mignonette"** was awarded the **1st Prize—$500—and Grand Gold Medal;** and his Stallion **"Vidocq"** was specially recommended to receive the Society's **Gold Medal.**

Mention the PACIFIC RURAL PRESS.

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CADIEN & BAGLEY,
Stockton, Cal, for

ANTI-RHEUMATIC

Shrunk Flannel Underwear.

Measure around chest over vest for undershirt; around waist under vest for drawers. Goods sent C. O. D. per W. F. & Co. Price, $6 a suit.

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PETER SAXE & SON, Lick House, S. F. Importers and Breeders for past *eleven* years. Berkshires, "Jerseys," "Short Horns," and all varieties of Sheep, and their grades.

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ROBT. BECK, San Francisco. Breeder of Thoroughbred Jersey cattle. Herd took Six Premiums of the eleven offered at State Fair, 1881.

GEO. BEMENT, Redwood City, San Mateo Co., Cal. Breeder of Ayrshire Cattle. Several fine young Bulls, Yearlings and Calves For Sale.

R. NOELL, Grass Valley, Nevada Co., Cal. Breeder and Importer of Thoroughbred Jerseys.

R. McENESPY, Chico, Butte Co., Cal. Breeder of Thoroughbred Devons.

HENRY PIERCE, 728 Montgomery Street, S. F. Breeder of Jersey, Guernsey and Ayrshire Cattle. Has them for sale.

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JAS. A. PERRY, of River View Stock Farm, Wilmington, Ill., has in Petaluma, Sonoma county, several fine Norman Stallions of his last importation direct from France. Catalogues on application to Jas. A. Perry, Fashion Stables, Petaluma, Cal.

P. J. SHAFTER, Olema, Marin Co., Cal. Breeder of choice Jerseys, bred from butter strains. Hambletonian horses by the Silver Gray Stallion, "Rustic," remarkable for size, speed, and kind disposition.

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E. A. SACKRIDER, 325 Eleventh St., Oakland, Cal Importer of Norman-Percheron horses. Horses on hand and for sale at reasonable terms.

WM. FARRINGTON, Santa Clara, Cal. Breeder of Norman horses; owner of the horse "Cunard," of stock of Perry's importation.

W. A. MUNNION, Dixon, Solano Co., Cal. Owner and Breeder of the celebrated Jack, "John Henry." Took First Premium State Fair, 1881, also Percheron Half-breeds.

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J. B. HOYT, Bird's Landing, Solano Co., Cal. Breeder and Importer of Shropshire Sheep. Rams and Ewes for sale. Also, cross-bred Merino and Shropshire.

E. W. WOOLSEY & SON, Fulton, Sonoma Co., Cal. Importers and Breeders of choice Thoroughbred Spanish Merino Sheep. City office, No. 418 California St., S F.

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J. D. ENAS, Sunnyside, Napa, Cal., Breeds Pure Italian Queen Bees. Comb Foundation.

The American Driven
WELL WATER SUPPLY SYSTEM

FOR MINING, IRRIGATION, MECHANICAL DOMESTIC & MUNICIPAL PURPOSES

Send for Circulars.

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The Fresno Colony,

On the line of the Southern Pacific Railroad and adjoining Fresno City and the Central Colony. Has the most favorable location of any Colony, as well as other superior advantages. Abundant water secured. Land unsurpassed for Vine Raising and Fruit Culture. Send for Map and Circular, or come and examine. Address

THOMAS E. HUGHES & SONS, Fresno City, Cal.

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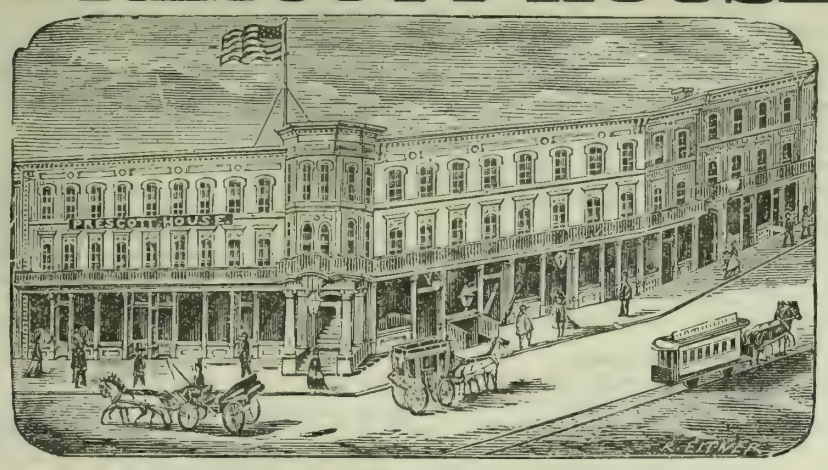

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Free Coach to the House. **O. F. BECKER. Proprietor**

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That the public should know that for the past ELEVEN years our SOLE BUSINESS has been, and now is, importing (OVER 100 CARLOADS) and breeding improved Live Stock—Horses, Jacks, Short Horns, Ayrshires and Jerseys (or Alderneys) and their grades; also ALL THE VARIETIES of breeding Sheep and Hogs We can supply any and all good animals that may be wanted, and at VERY REASONABLE PRICES and on CONVENIENT TERMS. Write or call on us. LICK HOUSE, San Francisco, Cal., October 22, 1881 PETER SAXE & HOMER P. SAXE.

PETER SAXE & SON

THE MYERS PLOWS.

All extras for Patent

Slip-share Gang Plows,

SIDE-HILL, SUB-SOIL

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SINGLE PLOWS,

Constantly on hand and for sale at

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MANUFACTURER OF ALL KINDS OF

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Of all kinds and sizes.

Keeps a good supply of well seasoned wood on hand. Blacksmithing and painting departments in connection.

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The New Non-Poisonous Sheep Dip and Disinfectant. Price reduced to $1.60 per gallon. For directions and testimonials apply to FALKNER, BELL & CO.,

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We can furnish immediately in any quantity,

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Of Rupestris.

These stocks are phylloxera-proof, and will grow readily from cuttings as the vinifera. For particulars apply to

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For Sale in large or small tracts, on easy terms, in the best parts of the State.

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Goods Crops every Season without Irrigation

Farms, Stock Ranches, Dairy Farms, Fruit Farms, Vineyards, Chicken Ranches and homesteads of every class and description in this and adjoining counties for sale or rent on reasonable terms. State requirements and obtain suitable particulars from the Real Estate

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Santa Cruz, Cal.

Fruit Farm For Sale.

Containing 24 acres fronting on Davis Avenue, one mile north of the flourishing town of Los Gatos. Good house, barn, chicken house and yard. A good well of soft water; 1,000 fruit trees, assorted, and 550 grape vines, all set out last winter. About 50 oak trees, large and small, adds to the beauty of the place. This beautiful, healthy place, situated in the charming warm belt climate of the foothills, is sold for the want of health and means to carry it on.

Price, $2 700. Address G W. MOGREW, Los Gatos, Cal. Reference—Dewey & Co, Rural Press.

CHOICE FRUIT FARM FOR SALE.

Located about ¾ of a mile north of Los Gatos, fronting on the county road. Containing 42 acres—20 of which is planted to fruit and 10 acres to grapes. All planted out last winter and having made a splendid growth. The orchard consists of the best varieties of apple, pear, peach, plum, prune, cherry, apricot and about 50 orange trees. Good house, barn, chicken and outhouses; 2 wells of water. All improvements new. Price, $5,200.

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NOTICE!

THE MEMBERS OF THE

Wheat Growers' Association of California

And others interested are notified that there will be a meeting held at Grangers' Hall, corner Davis and California streets, San Francisco, Cal., on Monday, January 9th, 1882, at 2 o'clock P. M. for the purpose of adopting a code of by-laws, and the transaction of such other business as may properly come before said meeting. A full attendance is desirable. J. W McCARTHY, Sec'y.

GRANGERS' BANK

Of California,

SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,000,

In 10,000 Shares of $100 each.

Capital Paid up in Gold Coin, $500,000.

Reserve Fund and Paid up Stock, 25,760.

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CURRENT ACCOUNTS are opened and conducted in the usual way, bank books balanced up and statements of accounts rendered every month

LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

GOLD and SILVER deposits received

CERTIFICATES of DEPOSIT issued payable on demand.

TERM DEPOSITS are received and interest allowed as follows: 4% per annum if left for 3 months; 5% per annum if left for 6 months: 6% per annum if left for 12 months.

BILLS OF EXCHANGE of the Atlantic States bought and sold.

ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1881.

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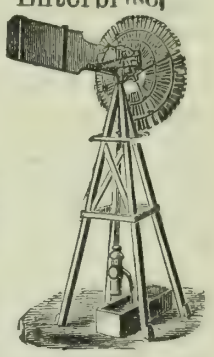
The Famous "Enterprise,"

PERKINS' PATENT
Self Regulating

WINDMILLS,

Pumps & Fixtures.



These Mills and Pumps are reliable and always give satisfaction. Simple, strong and durable in all parts. Solid wrought iron crank shaft with *double bearings* for the crank to work in, all turned run in babbitted boxes.. *Positively self regulating* with no coil spring or springs of any kind. No little rods, joints, levers or balls to get out of order, as such things do. Mills in use six to nine years in good order now, that have never cost one cent for repairs.

All sizes of Pumping and Power Mills. Thousands in use. *All warranted.* Address for circulars and information

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AMERICAN CHIEF GANG PLOW.

Took the Premium over all at the great plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the best and most desirable Gang Plow in the world.

Iron Founders, Machinists and Manufacturers of Improved Agricultural Implements. General Jobbing and repairing done in the best manner at most reasonable rates. Send for circular to MATTESON & WILLIAMSON,
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Holstein Cattle.

CLYDESDALE AND HAMBLETONIAN

HORSES.

The largest and deepest milking herd of Holsteins in the world. 225 head, pure bred, mostly imported, males and females of different ages.

A Large and elegant stud of imported Clydesdale Stallions and Mares of all ages.

Hambletonian Stallions and Mares of superior breeding Personal inspection invited. Separate catalogues of each class, and milk records of cows mailed free on application. All inquiries promptly answered. State that you saw this advertisement in the PACIFIC RURAL PRESS.

SMITHS & POWELL,

Lakeside Stock Farm, Syracuse, N. Y.

Hunter's Eccentric Patent Coupling.

For carriages, pumps and whiffletrees and other couplings. No bolts, no rattling and no unhitching. State and County rights for sale. Address HUNTER & FRANCIS, Merced, Cal.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co.'s SCIENTIFIC PRESS PATENT AGENCY, No. 252 Market St., S. F.

FOR THE WEEK ENDING DECEMBER 27, 1881.

251,402.—PAPER BAG MACHINE—A. Beyer, Oakland.
251,408.—FRUIT DRIER—R. E. Burns, S. F.
251 577.—RECEPTACLE FOR PACKING SOAP—N. W. Griswold, S. F.
251.861.—MAIL POUCH FASTENER—R. H. Hewitt, Los Angeles, Cal.
251,442.—GRINDING AND AMALGAMATING PAN—F. A. Huntington, S F
251,595.—HARVESTER FINGER—C. J. Johnson, Lone Pine, Cal.
251,448.—SPRAY NOZZLE—Long, Vestal & Merigot, San Jose, Cal.
25 ,373.—COMPRESSING PUMP—S D. Lount, Arizona Ter.
251,449.—BOX FASTENER—Chas. Martell, Vacaville, Cal.
251,615.—SHACKLE FOR HORSES—J. C. McCollum, Los Angeles, Cal.
251,617.—EGG AND FRUIT CARRIER—John J. McIntire, Oakland, Cal.
251,464.—SHACKLE—Jas. T. Rogers, Westport Cal.
251,480.—CARPET BEATER—John Spaulding, S. F.
9,990.—POWER STEERING APPARATUS FOR VESSELS—A. J. Stevens, Sacramento, Cal. (re-issue.)
251,485.—FURNACE—Henry R. Taylor, S. F.
251 488.—PORTABLE HAMMOCK—N. Vizelich, Stockton.
251,417.—RAILWAY SWITCH—M. R. Dahlgren, Oakland.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast Inventors transacted with perfect security and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of special mention:

EGG AND FRUIT CARRIER.—J. J. McIntyre, Oakland. Dated Dec. 27, 1881. No. 251,617. This is an improvement in cases designed for transporting eggs, fruit, or other similar articles; and it consists in a novel method of cutting, uniting and locking the strips which form the compartments that contain and separate the eggs, and that are placed in tiers one above the other in suitable cases, each tier having a loose bottom or diaphragm interposed between it and the next set of compartments. Many forms of compartment cases have been constructed, most of which have one or both of the sets of transverse strips notched upon the edges, and as these strips are usually made of pasteboard for economy, these cut edges are easily folded down or destroyed by handling and breaking of eggs. This invention contemplates the use of two sets of strips, those running in one direction having slots extending transversely across the center, but not extending to the edges. The other set of strips are sufficiently wide to just pass through and fill these slots, and they have small central slots just where they meet the other set of strips, through which a narrow strip of material passes, alternately to one side and the other of the first-mentioned strips, so as to form a lock.

GAG RUNNER.—William M. Blaine, Salinas. Dated Dec. 20, 1881, No. 251,021. This invention relates to an improvement in gag runners for bridle, and especially to the construction of a central bridge or support for the loop, and from the under side of which a spire projects for adjusting the gag runner. It consists of an open elongated frame, with a central transverse piece or bridge, from which the loop extends, being made a part thereof, whereby strength is gained. Two openings are thus formed in the frame or clamp through which the strap passes, and by which it can be slipped up and down. From the underside of the transverse piece or bridge forming the base of the loop, a spur projects to fit the holes in the straps, whereby the gag runner is made adjustable. The object of the invention is to provide a gag runner, which will combine strength, durability and simplicity, and at the same time be adjustable whereby the check can be regulated

PORTABLE COVERED HAMMOCK AND FRAME.—N. Vizelich, Stockton. Dated, Dec. 27, 1881. No. 251,488. This invention relates to a portable hammock adapted to receive a cover, and to the frame for swinging said hammock, the object of the invention being to provide a ready, convenient and secure place to lie down, when necessary. The invention consists in the arrangement and combination of certain props, supports and braces, which may be easily set up and taken down, and in a hammock adapted to be suspended from the frame thus made, said hammock being provided with head and foot stretchers and curved bars, upon which is laid and supported a covering, whereby protection is afforded to the occupant, and the whole device being adapted, when taken down, to be rolled up together, the hammock forming the casing or sack, and strapped into a small compass, so that it may be transported with ease from place to place, as necessity requires.

ROLLER DEVICE FOR SEAMS OF TIN ROOFS.—Chas. D. Morin, Woodland, Yolo Co., Cal. No. 250,446. Dated Dec. 13, 1881. This is a machine or roller device for rolling and flattening out the seams on tin roofs of houses. It consists of a heavy roller, journaled in a frame having a handle, in combination with a brake for said roller, and an upper or supplementary frame, on which additional weight may be placed when necessary. The object of the inventor is to provide a device which will save labor and flatten out the seams regularly and easily, thus preparing them for the better reception of the solder. It therefore has application merely to such seams as require to be flattened and is not for making and rolling upright seams on tin roofs.

FOOTSTOOLS FOR ROCKING CHAIRS.—F. Franz, S. F. Dated Dec. 20, 1881. No. 251,034. The invention consists in a flat board or foot rest, under which is journaled a roller, and to which is attached a wire or rod, the other end of which is fitted to and is adapted to move back and forth upon a guide board under the chair. The feet rest upon the board and by the motion of the chair, said board is rolled back and forth.

DRYING AND CANNING PEACHES.—Now that these fruits are in great demand, all supplies are being looked after; the announcement of W. W. Brier, in another column, will be looked after with interest.

Meteorological Summary for the Month of December, 1881.

Station, San Francisco, Cal.

Date	Daily Mean Barom.	Daily Mean Temp.	Daily Mean Humid'y	Prevailing Direction of Wind	Daily Rainfall.
1	29.964	50.7	78.7	W	.27
2	30.182	47.0	76 7	NE	.02
3	30.158	50 0	75 0	NE	.18
4	29.936	56.3	87.3	SE	.87
5	30.023	58 3	89.3	S	.60
6	30.207	56 7	92 0	SW	.02
7	30.327	51.7	93.0	NW	....
8	30.231	50.7	86.0	S	....
9	30.177	50.0	85.7	SE	....
10	30.157	51.3	91.0	S	.18
11	30.138	49 3	73 3	W	....
12	30.046	49 3	84.3	NE	.31
13	30.294	48.7	75.3	NE	....
14	30.202	49 3	80 3	NW	....
15	30.038	49 3	91 7	NE	.52
16	30.128	48.7	89.3	SW	....
17	30.233	47.0	93.0	W	....
18	30.240	46.8	87.0	NW	....
19	30.312	49.1	80 3	NW	....
20	30.265	48.3	83.7	NW	....
21	30.240	48.7	83 0	NE	....
22	30.229	48.8	80.3	N	....
23	30.236	48.5	82 7	SE	....
24	30.219	51.8	86 3	W	.33
25	30.179	48 3	78 3	W	....
26	30.077	50.7	89 3	S	.37
27	30.160	55.2	95.0	W	.18
28	30.332	53.7	90 7	N	....
29	30.336	52.0	86.0	NW	....
30	30.266	51.7	82.0	NW	....
31	30.229	48.7	87.0	NW	....
Sums	935.769	1,566.6	2,633.5		3.85
Means	30.186	50.5	85.0	NW	....

AVERAGE TEMPERATURE AND RELATIVE HUMIDITY AT THE DIFFERENT HOURS.

Time.	Av'age Temperature	Av'age Dew Point.	Average Relative H'midity —Per Cent
3 58 A. M.	48.7	45.6	89 2
7.58 A. M.	49.1	45.5	87.5
11 58 A. M.	52.1	46.5	81.8
3.58 P. M.	52.8	46 0	78 1
7.58 P. M.	50.8	45 9	83 8

During the month there were 6 clear, 8 fair, 2 cloudy, 3 foggy and 12 rainy days.

Tabular statement showing the mean barometer, mean temperature, rainfall, etc., for the past month and a comparison with preceding years:

YEARS.	Mean Barometer	Mean Temperature.	Mean Relative Humidity.	Maximum Temperature.	Minimum Temperature.	Prevailing Wind.	Rainfall.	Rainfall July 1st. Since
1871	30.095	52.9	81.1	62	42	S W	14.36	17.26
1872	30.074	52.1	76.0	62	41	N	5.95	8.90
1873	30.040	50.6	73.5	59	44	S E	9.72	11.80
1874	30.174	50.9	71.7	62	40	N	0.33	9.59
1875	30.146	51.7	81.4	65	39	N	4.15	11.66
1876	30.100	53.2	66.2	64	42	N	.00	4.01
1877	30.039	52.8	72.2	64	42	N	2.66	4.00
1878	30.120	51.6	59.5	68	40	N	.58	2.98
1879	30.138	49.4	76.3	64	34	N	4.46	9.30
1880	30.032	53.0	84.9	61	42	S	12.33	12.71
1881	30.186	50.5	85.0	63	43	N W	3.85	6.58
Means, etc.	30.104	51.7	75.3	63.1	40.8	N	5.31	9.06

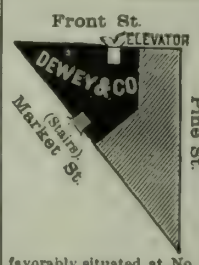
General Items.

Highest barometer, 30.367, Dec. 7th and 28th, 7:58 A. M.; lowest barometer, 29 908, Dec. 4th, at 3:58 P. M.; monthly range of barometer, .459; highest daily ave age of barometer, 30.336, Dec. 29th; lowest daily average of barometer, 29 936, Dec. 4th; highest temperature, 63, Dec. 5th; lowest temperature, 43, Dec. 18th; monthly range of temper- 20; greatest daily range of temperature, 10, Dec. 18 h, 19th and 26th; least daily range of temperature, 2, Dec. 27th; highest daily average, 58.3, Dec. 5th; lowest daily average, 46 8, Dec. 18th; mean of maximum temperature, 54.2; mean of minimum temperature, 47 7; mean daily range of temperature, 6.5; highest observed relative humidity, 100%, Dec. 16th; lowest observed relative humidity, 55%, Dec. 1st; highest daily average of relative humidity, 95 0%, Dec. 27th; lowest daily average of relative humidity, 73.3%, Dec. 11th; average cloudiness during the month, 56.57%; total movement of air, 4,371 miles; greatest daily movement of air, 234 miles, Dec. 12th; least daily movement of air, 66 miles, Dec. 16th; average daily movement of air, 141 0 miles; average hourly velocity of wind, 5.9 miles; maximum hourly velocity of wind, and direction, 24 miles, SE, Dec 4th; average hourly velocity and prevailing direction of wind at 3:58 A. M., 5.3 miles, NW; average hourly velocity and prevailing direction of wind at 11:58, A. M., 7.2 miles, NE; average hourly velocity and prevailing direction of wind at 7:58 P. M., 4.9 miles NW; date of solar halos, Dec. 8th, 14th, 20th, 25th, 28th, 29th, 30th, and 31st; date of lunar halos, 25th, 28th, 29th, 30th, and 31st; date of frosts 11th, 13th, 14th, 19th, 20th, 21st, 22d, 23d, 29th, 30th and 31st.

NELSON GOROM, Serg't Signal Corps, U. S. A.

Business Offices and Sunny Rooms to Let.

We have some desirable rooms to let adjoining th offices of this paper which will be rented on favorable terms. Stair entrance, No. 252 Market St. Elevator, No. 12 Front St. Parties wishing offices, etc., will do well to call and see them. DEWEY & CO.



Dewey & Co.'s Patent Agency and Newspaper Offices.

Dewey & Co.'s Patent Agency and the business offices of the Mining and Scientific Press, Pacific Rural Press, Pacific States Watchman and the Fraternal Record are now favorably situated at No. 252 Market Street. Elevator entrance, *No. 12 Front St., S. F.*

Our Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

G. W. MCGREW—Santa Clara county.
M. P. OWEN—Santa Cruz county.
J. W. A. WRIGHT—Merced, Tulare and Kern counties.
JARED C. HOAG—California.
B. W. CROWELL—Humboldt and Trinity counties.
D. W. KELLEHER—Merced, Fresno and San Benito.
A. C. KNOX—State of Nevada.
EDWARD A. WEED—San Francisco.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired), be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

Volunteer Testimonials of Those Who Have Used Booth's Exterminator.

PASO ROBLES, Cal., January 15, 1880.

A. R. BOOTH:—*Dear Sir:* Have tried one can of your Squirrel Poison, and find it very efficacious in destroying squirrels. Should like 2 cans more. G. W. BREWSTER.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances The floral department is replete and the wild animals in good vigor A day at Woodward's Gardens is a day well spent.

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AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Jan. 11, 1882.

The grain trade is now hanging upon the prospects of the season, and waiting also for the report of grain on hand on January 1st, which will be forthcoming soon. Holders are firm, and prices for wheat are about 2½c per ctl higher than last week. The latest from abroad is the following:

LIVERPOOL, Jan. 10.—Wheat: California spot lots, 10s 6d @10s 11d Cargo lots are quiet, at 49s for just shipped, 50s 6d for nearly due, and 51s 6d for off-coast.

The Foreign Review.

LONDON, Jan. 10 —The Mark Lane *Express* in its review of the British grain trade for the past week, says: Young Wheats are looking exceedingly weak on most of the Provincial markets. Sound, dry samples of grain advanced 1s per quarter, and in some instances 2s. Damp sorts are difficult to sell. Oats unchanged. Foreign Breadstuffs closed easier. The general position is undoubtedly in favor of buyers. The market the latter part of the week was rather more liberally supplied with flour Of 20,470 sacks and 501 barrels to hand Friday, five-sixths were from the United States. Trade is quiet and steady. Maize maintains its steadiness on account of the scarcity on spot. Fine foreign Barleys are higher; grinding sorts are unchanged. Oats Friday were 3d cheaper. There were 10 fresh Wheat cargoes remaining from the previous week. Nine sales were reported, and five cargoes withdrawn. Sales of English Wheat during the week were 34,000 quarters at 44s 9d per quarter, as against 22,297 quarters at 43s 4d per quarter during the corresponding week of last year.

Eastern Wool Markets.

BOSTON, Jan. 10th.—The demand for Wool was steady to-day, and the market is firmer. The finer grades of Wool are most in request, and the sales of Ohio and Pennsylvania fleeces have been at 43½c for X, 44@46c for XX and above. Michigan and Wisconsin fleeces are steady and firm at 42@43c for X; medium and No. 1 fleeces range from 46 to 48c for Michigan and Wisconsin. Combing and delaine selections are quiet but steady. The sales of fine delaine and fine combing have been at 47@50c. Coarse combing is quiet and prices unchanged. In unwashed fleeces sales continue to range from 25c to 30c for medium, the latter price for selected lots, 25@32½c for fine and 18@22c for low and coarse. California Wool is in fair demand at low prices for defective Southern. Pulled Wools are firm and choice superfines are scarce. We quote choice at 52½c, Eastern and Maine at 30@43c for common and good. In foreign Wools but very little has been done for some days. Fine foreign continues to be held firm.

Eastern Grain and Provision Market.

CHICAGO, Jan. 10th.—Wheat, firm and higher; $1.28½ cash, $1.29½ February. Corn weak and easy; 63¼@63⅜c cash, 62½c February. Pork, easier; $17 22½ cash, $17.47½ February. Lard, weak; $11.17½ cash, $11.27½ February.

BAGS—Bags are quiet and unchanged.

BARLEY—Barley has had a lively week of it, and is now about 7½c per ctl higher than last week. Holders are looking forward to see the prospects of the season. We note sales: 440 sks light brewing, $1.67½; 1,000, 700 and 400 sks feed, $1.65, and 800 sks coast Chevalier, $1.60.

BEANS—Beans are quiet with a rise of 10c per ctl on small Whites; other sorts unchanged.

CORN—Corn is held high at $1.75 per ctl, and bids are $1.65. The trade is at a standstill at present.

DAIRY PRODUCE—Butter is coming in quite freely, and has dropped to 35c for the fancy brands, with choice to good selling down to 30@32½c. Cheese is very scarce and California has sold up to 18c per lb.

EGGS—Eggs are now lower, at 35@36c for the best California.

FRUIT—Some choice Navel Oranges in wrappers are selling at $5 per box. Limes are high this week. Lemons are unchanged.

FRESH MEAT—There is a special deal in Mutton, and the price is worked high. Other meats are the same as last week.

HOPS—There is no change.

OATS—Oats are still high, and unchanged from last week. Holders are firm.

ONIONS—There is much variety in the stock on hand. Some of best quality reach 85c.

POTATOES—Potatoes have had a special excitement, and are now being run up because of small stocks on hand. Oregon Potatoes are now coming in, and have sold well.

PROVISIONS—Provisions are quiet and a shade lower on all Eastern Hams.

POULTRY AND GAME—Hens and Roosters have appreciated rapidly and are now higher than for months. Turkeys have been in excess and have dropped.

VEGETABLES—There is no change in the few things now in stock.

WHEAT—Wheat is about 2½c ℔ ctl higher, and the market is quiet and steady. We note sales: 75 tons No 2, $1 65; 250 and 300 tons do, $1.62½, and 6,000 sks coast, $1.60

WOOL—The market is quiet and nothing of note occurring.

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., January 11, 1882.

FRUIT MARKET.			
Apples, bx	— 75 @ 2 00	Peaches	— 11 @— 11½
Bananas, bnch	2 50 @ 4 00	do pared	— 14 @— 18
Cocoanuts, 100	6 00 @ 7 00	Pears, sliced	— 9 @— 9½
Cranberries, bbl	14 00 @16 00	do whole	— 7 @— 8
Limes, Mex	10 00 @12 00	Plums	— 5 @— 6
do, Cal, box	1 00 @ 2 00	Pitted	— 13 @— 14
Lemons, Cal, bx	1 00 @ 2 50	Prunes	— 9 @— 12½
Sicily, box	6 50 @ 7 50	Raisins, Cal, bx	— @ 2 75
Australian	— @— —	do, Halves	— @ 3 00
Oranges, Cal, bx	1 50 @ 5 00	do, Quarters	— @ 3 25
do, Tahiti M	— @— —	Eighths	— @ 3 50
do, Mexican	15 00 @20 00	Zante Currants	— 8 @— 10
do, Loreto	— @— —	VEGETABLES.	
Pears, bx	1 00 @ 2 50	Artichokes, doz	— @— 50
Pineapples, doz	7 00 @ 8 00	Beets, ctl	— @— 65
DRIED FRUIT.		Cabbage, 100 lbs	75 @ 1 00
Apples, sliced, lb	— 6 @— 6½	Carrots, sk	— 30 @— 50
do, quartered	— 5 @— 5½	Cauliflower, doz	85 @ 1 00
Apricots	— 15 @— 17	Garlic, lb	— 1½@— 2
Blackberries	— 14 @— 16	Lettuce, doz	— 10 @— —
Citron	— 28 @— 30	Mushrooms, lb	— @— 15
Dates	— 9 @— 10	Okra, lb	— 5 @— 8
Figs, pressed	— 4 @— 6	Parsnips, lb	— @— 4
do, loose	— 3½@— 5	Squash, Marrow fat, ton	10 00 @12 00
Nectarines	— 14 @— 15	Turnips, ctl	— @— 75

Signal Service Meteorological Report.

SAN FRANCISCO.—Week ending January 10, 1882.

	Jan. 4	Jan. 5	Jan. 6	Jan. 7	Jan. 8	Jan. 9	Jan. 10
HIGHEST AND LOWEST BAROMETER.							
	30.219	30.272	30.245	30.258	30.356	30 366	30 367
	30.105	30.219	30.202	30.218	30.256	30 303	30.293
MAXIMUM AND MINIMUM THERMOMETER.							
	[illegible]	59	57	58	60	56	54
	50.5	54.5	51	49	49	46	46
MEAN DAILY HUMIDITY.							
	89.7	91	70.3	42.3	44.7	65.3	54.3
PREVAILING WIND.							
	S	SW	NW	N	N	NW	NW
WIND—MILES TRAVELED.							
	215	163	219	321	299	87	210
STATE OF WEATHER.							
	Cloudy	Cloudy	Fair.	Clear.	Clear.	Clear.	Clear.
RAINFALL IN TWENTY-FOUR HOURS.							
	.14	.03	.06				

Total rain during the season, from July 1, 1881, 7.01 inches.

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., January 11, 1882.

Eng Standrd Wheat	8¾@ 9	45 inch	9½@ 9¾
Cal Manufacture		40 inch	8½@ 8¾
Hand Sewed, 22x36	8¾@ 9	Wool Sks Hand Swd	
20x36	8½@ 8¾	3½ lb	— @47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	— @49½
Machine Swd 22x36	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10½	Bean Bags	6½@ 7
Quarters	6 @ 6½	Twine, Detrick's A	32½@35
Eighths	4½@ 4½	" " AA	35 @37
Hessian, 60 inch	— @12		

Domestic Produce.

WHOLESALE.

WEDNESDAY M., January 11, 1882.

BEANS & PEAS.
Bayo, ctl.....1 75 @2 25
Butter.....3 00 @3 25
Castor.....3 50 @4 00
Pea.....3 50 @3 80
Red.....1 75 @1 85
Pink.....1 75 @1 85
Large White.....3 00 @3 25
Small White.....3 75 @3 90
Lima..... — @4 00
Field Peas, b'lk eyel 50 @1 75
do green..2 00 @2 25

BROOM CORN.
Southern..... 3 @ 3½
Northern..... 4 @ 6

CHICCORY.
California..... 4 @ 4½
German..... 6½@ 7

DAIRY PRODUCE, ETC.
BUTTER.
Cal. Fresh Roll, lb. 32½@ 35
do Fancy Brands. — @ 35
Pickle Roll..... 26 @ 28
Firkin, new..... 26 @ 28
Eastern..... 20 @ 25
New York..... — @ —
CHEESE.
Cheese, Cal., lb... 17 @ 18
EGGS.
Cal. Fresh, doz... 35 @ 36
Ducks..... — @ 35
Oregon..... 30 @ 32½
Eastern, by expr'ss 27½@ 30
Pickled here..... — @ —
Utah..... — @ 32½

FEED.
Bran, ton.....16 00 @16 50
Corn Meal.....— — @36 00
Hay..... 9 00 @14 00
Middlings.....— — @23 00
Oil Cake Meal..— — @25 00
Straw, bale.....— 62½@— 67½

FLOUR.
Extra, City Mills..5 25 @5 62½
do, Co'ntry Mills.4 75 @5 00
do, Oregon.....4 75 @5 12½
do, Walla Walla.4 50 @5 00
Superfine.....3 50 @4 25

FRESH MEAT.
Beef, 1st qual'y, lb. 6½@ 8
Second..... 5½@ 6¼
Third..... 4 @ 4½
Mutton..... 4 @ 6
Spring Lamb..... 6½@ 7
Pork, undressed.. 5½@ 6¾
Dressed..... 9 @ 9½
Veal..... 6½@ 7½
Milk Calves..... 7½@ 8
do, choice..... — @ 8½

GRAIN, ETC.
Barley, feed, ctl..1 60 @1 65
do, Brewing..1 67½ @1 72½
Chevalier.....1 60 @1 65
do, Coast..1 50 @1 60
Buckwheat..... — @1 50
Corn, White.....1 65 @1 75
Yellow.....1 65 @1 75
Small Round....1 65 @1 75
Oats.....1 70 @1 77½
Milling.....1 75 @1 90
Rye.....2 00 @2 12½
Wheat, No. 1.....1 67½@1 70
do, No. 2.....1 60 @1 65
do, No. 3.....1 45 @1 50
Choice Milling.. — @1 70

HIDES.
Hides, dry..... — @ 18
Wet salted..... 9½@ 11

HONEY, ETC.
Beeswax, lb..... 23 @ 25
Honey in comb... 15 @ 20
Extracted, light.. 9 @ 10
do, dark..... 7½@ 9

HOP'S.
Oregon..... 20 @ 21
California, new... 25 @ 27½
Wash. Ter..... 23 @ 24
Old Hops..... — @ —

NUTS—Jobbing.
Walnuts, Cal..... 10 @ 11
do, Chile ... 7½@ 8
Almonds, hd shl lb 8 @ 10
Soft shell..... 14 @ 15
Brazil..... 10 @ 11
Pecans..... 13 @ 15
Peanuts..... 6 @ 6½
Filberts..... 14 @ 15

ONIONS.
Red..... — @ —
Silverskin..... 60 @ 85
Oregon..... — @ —

POTATOES.
Early Rose.....1 15 @1 25
Petaluma, ctl.....1 40 @1 50
Tomales.....1 40 @1 50
Humboldt..... — @1 55
" Kidney..... — @1 50
" Peachblow..1 62½@1 70
Jersey Blue.....1 30 @1 35
Cuffey Cove.....1 25 @1 32½
River, red..... 95 @1 10
Chile..... — @1 25
do, Oregon.....1 00 @1 65
Sweet.....1 00 @1 25

POULTRY & GAME.
Hens, doz.....6 00 @ 7 50
Roosters.....5 00 @ 7 00
Broilers.....4 00 @ 6 00
Ducks, tame, doz.6 50 @ 7 75
Mallard..... — @ 3 00
Sprig.....1 50 @ 1 75
Teal..... 75 @ 1 00
Widgeon.....1 00 @1 12½
Geese, pair.....1 75 @2 00
Wild Gray, doz.2 00 @2 50
White do..... — @1 50
Turkeys..... 11 @ 12½
do, Dressed.... 13 @ 14
Turkey Feathers, tail and wing, lb. 10 @ 20
Snipe, Eng.....2 00 @2 25
do, Common.. 50 @ 75
Quail, doz.....1 00 @1 25
Rabbits.....1 00 @1 50
Hare.....2 00 @2 25
Venison..... 5 @ 7

PROVISIONS.
Cal. Bacon, extra clear, lb..... 13 @ 13½
Medium..... 12 @ 13½
Light..... 13 @ 14
Lard..... 13 @ 17
Cal. Smoked Beef. 11½@ 12½
Shoulders..... 9½@ 10½
Hams, Cal..... 12½@ 13½
Dupee's..... 16 @ 16½
Whittaker..... 16 @ 16½
Royal..... 16 @ 16½
Stewart..... 16 @ 16½
Eastlake..... 16 @ 16½

SEEDS.
Alfalfa..... 12 @ 13
do Chile..... — @ —
Canary..... 3½@ 4
Clover, Red..... 14 @ 15
White..... 45 @ 50
Cotton..... — @ 20
Flaxseed..... 2½@ 3½
Hemp..... — @ 5
Italian Rye Grass.. 25 @ —
Perennial..... 25 @ —
Millet, German.... 10 @ 12
do, Common... 7 @ 10
Mustard, White... 1¾@ 2¼
Brown..... 2½@ 3
Rape..... 2½@ 2¾
Ky Blue Grass..... 20 @ 25
2d quality..... 16 @ 18
Sweet V Grass..... — @ 75
Orchard..... 20 @ 25
Red Top..... — @ 15
Hungarian..... 8 @ 10
Lawn..... 30 @ 40
Mesquit..... 10 @ 12
Timothy..... 9 @ 10

TALLOW.
Crude, lb..... 6 @ 6¼
Refined..... 9½@ 10

WOOL, ETC.
FALL—1881.
San Joaquin..... 9 @ 14
do, Lamb.... 13 @ 15
Southern Fall..... 9 @ 12
do lambs'..... 13 @ 14
Northern, free..... 16 @ 20
do, defective.. 14 @ 16
Mountain, free.... 16 @ 18
do, slightly seedy. 13 @ 15
Humboldt & Mendocino..... 18 @ 21

General Merchandise.

WHOLESALE.

WEDNESDAY M., January 11, 1882.

CANDLES.
Crystal Wax.....16 @18
Paraffine.....20 @—
Patent Sperm.....25 —28

CANNED GOODS.
Assrtd Pie Fruits.
2½ lb cans.....2 25
Table do.....3 50 @ —
Jams and Jellies.3 75 @ —
Pickles, hf gal....3 25 @ —
Sardines, qr box..1 67 @ —
Hf Boxes.....2 50½@1 90
Merry, Faull & Co.s
Preserved Beef
2lb, doz.....3 25 @3 —
do 4 lb doz.....6 50 @6 —
Preserved Mutton
2 lb, doz.....3 25 @3 50
Beef Tongue.....5 75 @6 00
Preserved Ham, 2 lb, doz.....5 50 @5 60
Deviled Ham, 1 lb, doz.....3 00 @3 50
do Ham ½ lb doz 2 50 @ —
Boneless Pigs Feet
3lbs.....3 50 @3 75
2 lbs.....2 75 @ —
Spiced Fillets 2 lbs3 50 @ —
Head Cheese3 lbs.3 50 @ —

COAL—Jobbing.
Australian, ton. — @ 8 50
Coos Bay..... 6 50 @ 7 50
Bellingham Bay — @ —
Seattle..... 7 00 @ —
Cumberland.... — @13 00
Mt Diablo..... — @ —
Lehigh..... — @ —
Liverpool..... — @ —
West Hartley.. — @ 9 00
Scotch..... — @ 8 50
Scranton..... — @ —
Vancouver Id... — @ —
Wellington..... — @ 9 00
Charcoal, sack.. — @ —
Coke, bush..... — @ —

COFFEE.
Sandwich Id lb. — @ —
Costa Rica..... 12 @ 14
Guatemala..... 12 @ 14
Java..... 18 @ 20
Manilla..... 15 @ —
Ground, in cs... — @ 22½

FISH.
Sac'to Dry Cod.— — @ — 5
do in cases..— — @ — 5½
Eastern Cod...— 7 @ — 7½
Salmon, bbls... 7 00 @ 7 50
Hf bbls..... 3 50 @ 4 00
1 lb cans..... 1 12½@ 1 22½
Pkld Cod, bbls.— — @ — —
Hf bbls..... — — @ — —
Mackerel, No. 1
Hf bbls..... 9 50 @ 10 00
In Kits..... 1 75 @ 1 85
Ex Mess..... 3 50 @ 4 00
Pickled Herring, box..... 3 00 @ 3 50
Boston Smoked Herring..... 65 @ — 70

LIME, etc.
Plaster, Golden Gate Mills.... 3 00 @ 3 25
Land Plaster, ton.....10 00 @ 12 50
Lime, Santa Cruz bbl..... 1 25 @ 1 50
Cement, Rosendale..... 1 75 @ 2 00
Portland..... 3 75 @ 4 00

NAILS.
Assrtd sizes, keg.3 75 @ 4 00

OILS.
Pacific Glue Co's Neatsfoot, No.1.1 00 @1 00
Castor, No. 1..... — @1 05
do, No. 2..... — @ 95
Baker's A A..... — @1 30
Olive, Plagnoil...5 25 @5 75
Possel.....4 75 @5 25
Palm, lb..... 9 @ —
Linseed, Raw, bbl — @ 60
Boiled..... — @ 65
Cocoanut..... 60 @ —
China nut, cs..... 68 @ 69
Sperm.....1 40 @ —
Coast Whales..... 35 @ —
Polar..... — @ —
Lard..... — @1 00
Petroleum (110°).. 18 @ 22
Petroleum (150°).. 28 @ 35

PAINTS.
Pure White Lead. 7½@ 8
Whiting..... 1½@ —
Putty..... 4 @ 5
Chalk..... 1½@ —
Paris White..... 2½@ —
Ochre..... 3½@ —
Venetian Red.... 3½@ —
Averil mixed Paint gal
White & Tints..2 00 @2 00
Green, Blue and Ch Yellow.....3 00 @3 50
Light Red.....3 00 @3 50
Metallic Roof ..1 30 @1 60

RICE.
China Mixed, lb.. 4½@ 5
Hawaiian..... 4½@ 5

SALT.
Cal. Bay, ton...14 00 @22 00
Common..... 6 50 @14 00
Carmen Id.....14 00 @22 00
Liverpool fine...14 00 @20 00

SOAP.
Castile, lb..... 9 @ 10
Common brands.. 4½@ 6
Fancy Brands.... 7 @ 8

SPICES.
Cloves, lb..... 37½@ 40
Cassia..... 19 @ 20
Nutmegs..... 85 @ 90
Pepper Grain..... 15 @ 16
Pimento..... 16 @ 17
Mustard, Cal ½ lb Glass..... — @1 25

SUGAR, ETC.
Cal. Cube lb..... — @ 12½
Powdered..... — @ 12¾
Fine Crushed..... — @ 12½
Granulated..... — @ 11¾
Golden C..... — @ 11½
Cal Syrup, kgs..... 65 @ —
Hawaiian Molasses 25 @ 30

TEA.
Young Hyson, Moyune, etc.... 40 @ 65
Country pkd Gunpowder & Imperial..... 35 @ 75
Hyson..... 30 @ 35½
Fooo-Chow O..... 27½@ 32
Japan, medium... 35 @ 37½

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No. 75 Warren Street, New York.
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1882.
Pacific Mail Steamship Co.

The Steamships of this Company will sail from SAN FRANCISCO during the year 1882 as follows:
From wharf, corner of First and Brannan Sts., Hour of departure, 2 P. M.,

For Yokohama and Hong Kong.

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February 11, July 29	January 7, June 22
May 6, October 19	April 1, Sept. 13, Dec. 5

Connecting at Yokohama with Steamers of the Mitsu Bishi Co for Hiogo, Nagasaki and Shanghae. Excursion tickets to Yokohama and return at special rates.

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March 11th, July 1st, October 21st.	January 14th, May 6th, August 26th, December 16th.
ZEALANDIA.	AUSTRALIA.
April 8th, July 29th, November 18th.	February 11th, June 3d, September 23d.

Round the World Trip, via New Zealand and Australia, $650.

For New York, via Panama.
ON THE 4TH AND 19TH OF EVERY MONTH,
At 12 o'clock, noon. Taking Passengers and freight for Mexican, Central American and South American ports, for Havana and all West India ports; for Liverpool, London and Southampton; for St. Nazaire, and for Hamburg, Bremen and Antwerp.
WILLIAMS, DIMOND & CO., Gen'l Agents.

Grangers' Business Association of California.—Principal place of business, No 38 California street, San Francisco, State of California.

NOTICE—There are delinquent upon the following described stock on account of an assessment levied on the Twenty-first (21st) day of November, 1881, the several amounts set opposite the names of the respective shareholders, as follows:

Name.	Number of Certificate.	Number of Shares.	Amount
Adams, D Q	467	4	$10 00
Allen, James	1461	2	5 00
Allen, H M	1220	25	100 00
Bennett, Albert	671	4	10 00
Bouton, A	1187	2	5 00
Bollinger, A J	312	4	10 00
Barnes, Nathan	919	8	20 00
Buford, S H	622	2	5 00
Carpenter, J H	873	5	12 50
Clock, Mrs Sarah D	1621	4	10 00
Cooper, J T	146	1	2 50
Coulter, Rachael M	1082	4	10 00
Cox, William W	1374	2	5 00
Cox, Mrs M E	1376	1	2 50
Cox, E J	507	5	12 50
Cook, Mary E	4	5	12 50
Coulter, S T	1639	5	12 50
Campbell, S A	1679	10	25 00
Frazer, Thomas	1680	10	25 00
Gamble, Mary C	579	20	50 00
Gates, T M	602	1	2 50
Gartleman, Daniel	994	2	5 00
Gartleman, Daniel	1001	2	5 00
Gaston, Hugh	663	4	10 00
Gladden, W N	1191	4	10 00
Gyte, Joseph	139	1	2 50
Heald, J G	998	4	10 00
Heald, J G	1066	2	5 00
Heald, J G	1664	1	2 50
Heald, Rachael	1064	1	2 50
Hutson, J L	1475	5	12 50
Lindner, Lucinda	839	2	5 00
Lindner, John D	847	10	25 00
Lyman, Charles	498	10	25 00
McMullin, F A	327	2	5 00
Meyer, Wallemar	583	10	25 00
Meyer, Waldemar	1635	10	25 00
Meese, William	1158	2	5 00
Moore, Samuel L	1146	2	5 00
Morris, J R	1176	20	50 00
Morris, J R	1609	1	2 50
Morris, J R	1687	5	12 50
Morris, Maggie C	1177	20	50 00
Moch, J L	666	5	12 50
Proctor, Geo W	1655	12	30 00
Proctor, Geo W	1713	8	20 00
Rauschamp, Geo	282	2	5 00
Rector, W H	1085	8	20 00
Sayward, J W	129	2	5 00
Scott, P H	7	1	2 50
Scott, P H	1676	1	2 50
Smittle, J W	626	10	25 00
Sollars, S W	592	1	2 50
Stoddard, O L	719	2	5 00
Taber, G R	189	2	5 00
Troxell, J R	1589	6	15 00
Troxell, J R	1679	1	2 50
Unger, Frederick	1241	4	10 00
Vanderbilt, Wm	867	5	12 50
Vanderbilt, Wm	638	10	25 00
Valpey, Mrs Elizabeth	1728	2	5 00
Weymouth, Almon	1448	5	12 50
Weymouth, Harris	1166	3	7 50
Wilsey, Amasa	201	2	5 00
Wilsey, Amasa	485	8	20 00
Wilhout, Jessie	436	4	10 00
Wood, George	1154	1	2 50
Yeiser, Daniel	182	10	25 00

And in accordance with law and an order of the Board of Directors, made on the 21st day of November, 1881, so many shares of each parcel of such stock as may be necessary will be sold at public auction at the office of the company, No. 38 California St., San Francisco, Cal, on Tuesday, the 17th day of January, A. D., 1882, to pay the delinquent assessment thereon, together with costs of advertising and expenses of sale.

AMOS ADAMS, Secretary
Of Grangers' Business Association of California. Office, No. 38 California St., San Francisco.

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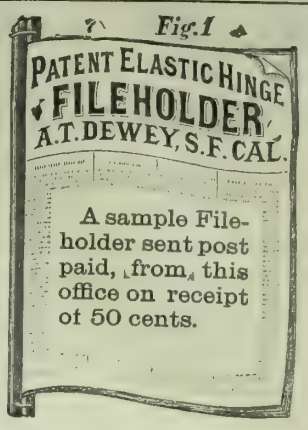

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Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the
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All kinds of Light Iron and Wood Work, including Patterns, Gear Cutting, Planing, Engine, Musical Instruments and other repairing. Dies, Taps, Reamers, etc., a specialty.
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200 Egg capacity	$60.00
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From the following varieties:

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My breeding yards are composed of selected birds from the leading strains mated to secure the best results.

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Weight carried to the extremities of the Axles. Long, soft, double sweep springs. No side sway or pitching motion. It is jointed, relieving all strain.

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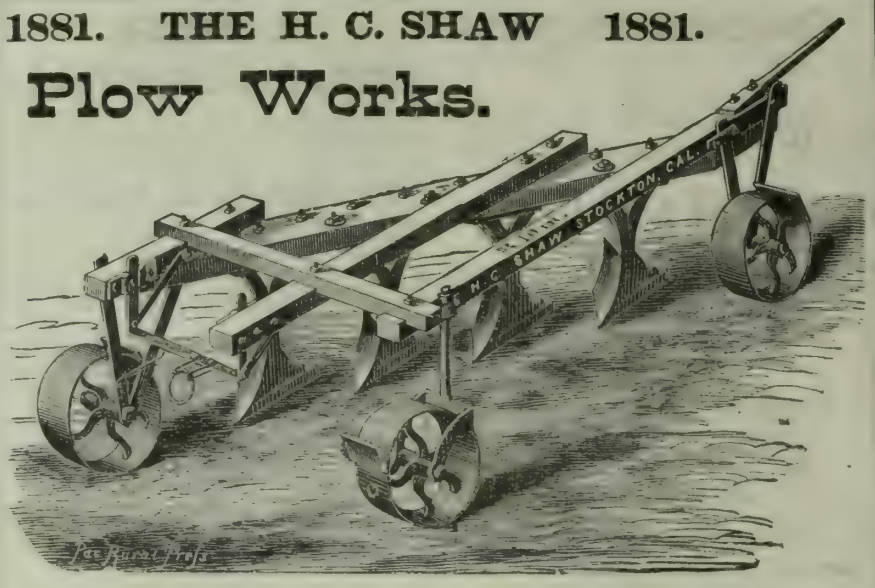

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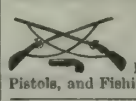

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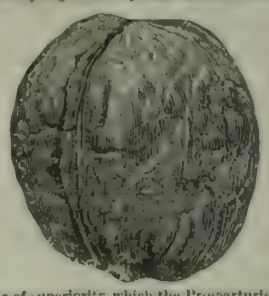
Or early bearing Walnut, introduced into California from Europe in the spring of 1871 by Felix Gillet, of Nevada City.



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The above trees are all selected and on Peach Roots and free from scale and other injurious insects.

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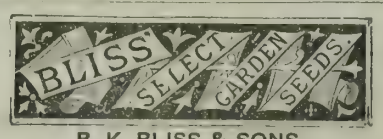

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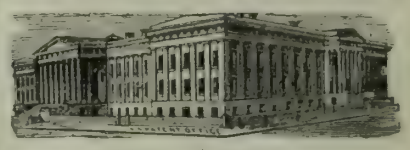

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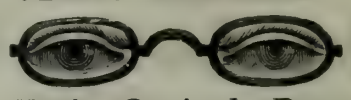

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PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, JANUARY 21, 1882. Number 3

Situation and Surroundings of Portland.

We give on this page a handsome engraving showing Portland, Oregon, and some of the notable features of the country surrounding it. The growth and prospects are themes which the Oregonian never tires to talk about, and they are matters in which all who enjoy the growth and development of the Pacific coast will take an interest. Of late years, Oregon and Washington Territory have secured a large share of the immigration to this coast, and the settlement of the country and the increase of its productions has been notable. It cannot be doubted that progress in this direction has but just set in, and that the coming completion of through lines of transportation eastward will add a new impetus to all industries and swell the population of all well-placed towns, while at the same time it will plant new towns and new country homes upon the vast and rich region which is still unoccupied.

But it is rather of the city of Portland and its immediate surroundings of which we would speak at this time, to enable the reader to understand better the engraving. And in so doing, we shall be free to take paragraphs from local writers, who will present a more appreciative view of the scene than anything we could ourselves prepare.

"Portland—in latitude 45° 30′ north, longitude 122° 27′ 30″ west—is a port of entry, the county seat of Multnomah county, and the commercial metropolis of Oregon. It is pleasantly located on the west bank of the Willamette river, about 13 miles above the junction of the Columbia, and about 110 miles—by the river course—from the Pacific ocean. The city is located on a plateau, which gradually increases in hight as it recedes from the river, until it forms a range of hills at the western extremity of the city, from which may be seen the snow-capped summits of Mounts Hood, St. Helens and Jefferson, the Cascade range of mountains, and the meanderings of the Columbia and Willamette rivers."

Approaching Portland on board a steamer from San Francisco, at the present time, one's first impression of the place is usually of a decidedly unfavorable character, owing to the long line of dingy-looking docks that obstruct the view. However, on landing and passing from street to street, a city of peculiar beauty is opened to the view, and one is surprised at the massiveness of the buildings and general thrift displayed in all branches of business. However, one blot on the otherwise unsoiled picture consists in the narrowness of the streets, most of which are but 60 ft. in width. This defect, however, is soon lost sight of as we move from place to place and see on all sides unmistakable signs of wealth and comfort. From the summit of the hills above referred to, a scene of simple grandeur is unfolded. Away to the north the whole face of the country is dark with timber, through which the silvery water of the Willamette is plainly visible until it empties into the great Columbia, 12 miles distant. From far up the Columbia, the bright water may be seen as it moves steadily onward to the sea, and it is only lost to sight in the dim distance far to the west. Slightly east of north and beyond the Columbia, the quiet little village of Vancouver is plainly visible, while, overlooking the river to the east of it may be seen the government reserve with its barracks and parade ground, while in the latter a tall mast supports the stars and stripes as they proudly wave in the free air of Heaven. To the right of this, and far off in the north, the pure white summit of St. Helens may be seen reaching above the surrounding mountains, standing 9,570 ft. above the level of the sea; behind it Rainier shows its cap of perpetual snow looming up in the heavens for 14,444 ft. Two other snow-capped mountains are seen to the right, but to grand old Hood, "the pride of Oregon," is ascribed the honor of capping the climax, as it sits in its silent glory, 11,255 ft. high, off in the mountains to the east, perfectly formed, symmetrical and beautiful.

Of Mt. Hood, as it sometimes appears from Portland, a writer in the *Telegram* says: "The day had been cloudy, but the clouds parted just before night so as to send the rays of the sun, as if concentrated for that special purpose, upon the distant Mt. Hood. The effect was to make the snow-capped king of the Cascades appear to lose the 60 miles between us and its great snow-white sides, so that the rough contour was brought out by light and shade with such distinctness, that it appeared as if drawn within a few feet of us; so while we were enjoying a warm, sunshiny evening, with rich, green hills surrounding our city, there stood an enormous pile of the purest and whitest snow at our very doors. It is indeed surprising the variations in the appearance which our beautiful mountain presents to the people of this city, and the whole State, in the different shades of light thrown upon it from different directions as the sun moves over us in his daily rounds. Never twice alike, we are always seeing new beauties in the everlasting hills, and especially the great white-capped mountains seen from this city, Mounts Hood, St. Helens, Rainier and Adams."

PORTLAND, WILLAMETTE RIVER, AND MOUNT HOOD.

The city of Portland embraces a population of about 25,000 of all nationalities. It is the first city in point of wealth, proportionally to size, in the Union. Practically, all phases of life, except extreme poverty, and all occupations to be seen in any American city, are observable here. The tone is higher, as prosperity of sober, industrious labor is greater, and the success of success is more productive of wealth. The proportion of wholesale to retail houses in all lines of trade is much greater than would be expected of its inhabitants. For instance, the number of wholesale groceries actually exceeds the number of first class retail houses in the same line. The business of several of the former reaches into millions annually. It may truthfully be said that Portland is the market-place for the north Pacific coast, the granary of Oregon and Washington, and the treasure vault of the whole northwest country.

Thirty years ago the city of Portland was little except a dense fir forest, with here and there a clearing yet full of blackened stumps. There were several business houses, where trade was brisk, and a number of temporary buildings for family dwellings, with a noticeable preponderance of boarding houses and gambling dens. Initial steps had been taken to establish the schools and churches that have since grown into prosperity and permanence. There were no regular sidewalks or public street lamps, and the visitor carried away vivid recollections of the abounding mud. Portland has since grown into a city of over 20,000 inhabitants, is the point where all the great railroads of the present and the future are to meet, and her maritime interests control the entire commerce of the Pacific Northwest. Her schools are second to none in North America.

Our engraving gives a section of the Willamette valley, which is the most famous agricultural region of Oregon. The valley is about 200 miles in length and has several important towns, besides the villages and hamlets which occur at short intervals. Farm houses abound, and orchards; and meadow lands stretch away into little valleys. Level prairies are encountered here, billowy hillocks there, and dark green forests yonder, diversified occasionally by dense groves of undergrowth. The timber in the valley is principally oak and fir, the latter predominating.

The Willamette valley is famous for its moist climate, its dripping skies being a by-word through the outside world. But it seems that the dwellers there rather enjoy it. In fact, some local writers would have us believe that the inhabitants get so used to rain that they cry for it. We quote as follows:

"The resident will grow to like the humid atmosphere, and, as his years advance, will learn to long for rain when lowering weather ceases. He will learn by gratified experience that the rainy seasons, of which the temporary visitor to the Willamette valley usually complains to the outside world, are not the terror he has been led to imagine. And yet the climate is excessively humid in winter along the coast, and also in the great valleys between the coast and Cascade mountain ranges. There is rain enough to make the unmade roads of a new country very muddy and disagreeable, and to keep them so till the summer sunshine comes to the rescue. But the same humidity that spoils the roads bathes the mountains in perpetual green, and so fructifies the valleys that crops never fail, and all the abundant and varied products of the soil are of the very best quality."

HORTICULTURAL SOCIETY MEETING.—The next meeting of the State Horticultural Society will be held at the Academy of Sciences, corner California and Dupont streets, on Friday, Jan. 27th, at 12 M. An address on the "Use and Abuse of the Eucalyptus" will be delivered by the president, Prof. Hilgard. The Mechanics' Institute has expressed its desire that the Horticultural Society take charge of the fruit, plant and flower departments of the Mechanics' Institute Fair of 1882. The advisability of this action on the part of the society will come up for general discussion at the meeting of January 27th, and it is hoped that all members will attend and give their views on the subject.

Two bills have been introduced in Congress for a reduction of letter postage to two cents. It is said that a reduction of letter postage would probably decrease the revenue from that service for a time, but the decrease would only be temporary.

Birds and Worms.

The discussion of ways and means for destroying linnets which has proceeded in the last three issues of the RURAL, leads to a consideration of the insectiverous character of the different birds, for this is of the greatest importance to the orchardist. One of the most thorough students of this branch of ornithology is Prof. S. A. Forbes, of Normal, Ill. He recently read an essay at a horticultural meeting giving the results of last summer's study of the behavior of birds during the visitation of army worms and chinch bugs. He shows how widely birds differ in respect to insect eating and his record of the different birds named may be of value. Prof. Forbes said that in the orchard infested by canker-worms, 64% of the birds and 60% of the species were found eating them; 40% of the food of all the birds taken together consisted of the worms. They made 40% of the food of the robin, 23% of the brown thrush, 60% of the bluebird, 75% of the chickadee, 66% of the summer-warbler, 35% of the warbling viros, 100% of the cedar bird, 66% of the rose-breasted grossbeak, 78% of the indigo bird, 50% of the black-throated bunting, 79% of the orchard oriole, 43% of the king bird, 32% of the red-headed woodpecker, and 75% of the cuckoo. The usefulness of the thrush and bluebird was very considerably impaired by their attacks on carnivorous beetles, which made 15% of their food. These beetles were proven to take about 16% of their food from the canker-worms. Of the 20 birds representing 12 species, shot where the army-worm abounded, only two birds, a grossbeak and a cuckoo, were found to have paid any attention to the pest, the worms making about 5% of the food of the 20 birds. Fifteen representatives of eight species, shot among the chinch bugs, had not touched these insects at all, but the catbird, the brown thrush and the meadow-lark, had been previously found eating them in small quantity. He concluded that there was a class of entomological insurrections, sudden, widespread, immense, and short-lived, upon which birds could make but little impression, as a whole, although they might be clearly useful on the outskirts of the region involved; and that there was another class, more limited in area and numbers, affected little or not at all by meteorological conditions, and consequently, less abrupt and longer lived, over which birds had a powerful, although not necessarily a controlling, influence.

THE PHYLLOXERA IN FRANCE.—The present condition of the phylloxera plague is sketched by Galignani's *Messenger* (Paris) as follows: Notwithstanding all that has been done to check the ravages of the phylloxera vastatrix in this country, the destructive parasite is still spreading, and has now destroyed some of the most fertile vineyards of Italy. The actual money loss in France alone can be estimated from the fact that about one-quarter of the acreage of the wine-growing districts will need replanting, while another quarter is so badly attacked that replanting will probably be the best remedy, although altogether it involves an expenditure of three milliards of francs. Out of the host of remedies tried, only three have given any promise of success, and they are almost as bad as the disease. They are: Total submersion of the district, so as to drown the insects; the use of insecticides, such as the sulphide of carbon; and the planting of American varieties of vine, the last-mentioned remedy being only in the form of American roots, upon which the French vines are grafted. Total submersion, however, appears to yield the best results; but the congress which is to open on Sept. 5th will probably throw some light on the subject, which, to the inhabitants of the south of France and adjoining countries, is rather more serious than the potato disease in Ireland.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Fresno Notes.

EDITORS PRESS:—This seems fair to be the worst year in all respects yet seen in central California. We've had only 1.9 inches of rain, beginning with a heavy shower Sept. 22d, and since then it has fallen at such intervals that it has all dried up about as fast as it has fallen. This is the coldest morning that I have ever seen in this county. Thermometer was down to 11° Fahr., and ice froze in the still water in my ditch over one inch in thickness. Once only before has the thermometer reached 12°. The weather is now clear and dry, roads as dusty as in July. We've been having heavy winds for a few days, an almost certain sign of rain. May it prove so in this case.

Over a foot of snow has fallen on the mountains, the head waters of King's river. This will insure water for irrigation in the colonies to those who hold "water rights" from the "Fresno Canal and Irrigation Co.," which holds the oldest right in our county to the waters of King's river. But those dependent upon ditches, holding water rights acquired within the past half dozen years, will fare poorly, if there is not yet a much greater snow-fall in the mountains.

Orange Trees.

In a lecture before the Central California Colony five years ago, I asserted that orange trees would stand 20° below freezing point, equal to 12° Fah. I've a lot of trees here that have stood that, and I'm certain, from their appearance now, that they'll stand with but little injury, the one degree more than we had last night. But they are not wholly unprotected, though the protection is not against the cold, but against the morning sun. The sun's rays must not strike them till the frost is entirely out of them. Plant on the west, or northwest side of a house, barn, evergreen shelter belt of trees, steep high hill or mountain, where the sun's rays cannot strike them till, say about noon, and they are secure from any degree of cold that we will ever have in the great valley of California. Five years ago, in my lecture, I asserted the fact. I did not then comprehend it, so as to give directions to enable one to demonstrate it, as I have now done; but I knew I was right, and I've been observing and experimenting ever since, and now, if any reader of the RURAL PRESS will plant orange trees, anywhere from Redding to San Diego, in the valley or lower foothills, as I have suggested above, he can raise oranges with as much certainty and ease as he can apples or peaches. I hope this will be as widely circulated as was my assertion of the fact in my lecture five years ago which appeared in over 60 newspapers, in our country, besides being published in Australia and New Zealand. The good that this item will do where known will far more than repay me for all the unfriendly (yes, and sometimes ungentlemanly) criticisms that my enunciation of that fact called forth. My only wonder is that some old orange raiser, some "citrus sharp," has not long before this, given confirmation of it by the above instructions that will enable anyone to demonstrate it. W. A. SANDERS.

Sanders, Fresno Co.

Lessons of a Dry Year.

EDITORS PRESS:—And still the dry weather continues, and farmers' hearts fail. The faces of many look blank; some abandon hope in despair, and the tongues of a few blaspheme. Hay is excessively high and scarce; in the upper part of the county, cattle are in a starving condition; sheep are dying by the hundreds. Some are throwing up their leases and leaving their homes in utter and sullen abandonment. It clouds up, gives us every indication of a heavy downpour; a few sad drops weep, and all stand in joyous expectancy, and wait with open mouths and hearts. But the ardently prayed for and so long, so very long waited for rain does not come. The wind veers round, the clouds dissolve into thin air, and the hated sun shines clear as on the morning of creation, and hope is throttled by despair. And so again and again, until the stoutest heart is almost ready to exclaim, "There is a fatality in it!" But this is taking an extreme view. We still have time; and although a dry year is probable, I still think we will have rain enough to mature crops. If not, there will be sad suffering to many; but there will be no actual starvation; there will be abundance to eat for all. And our suffering will be a benefit to us in many ways. Our mad, headlong chase after the dollars will receive a fearful, but a beneficial check; we shall, perforce, pause and see to where and to what we are tending. We shall, some of us, it is to be hoped, reform our lives, and become more honest, more benevolent, more charitable, more Godlike. We shall see more opportunities to help our neighbors, and we shall be impelled to seize them. We shall learn to live for a juster purpose in this world. Nor is this all.

We shall learn to make better provisions for the future. We shall learn, although the lesson is a hard one, that dry years—years of suffering—will occasionally come to California; and we shall learn to provide for them beforehand, so that we shall not suffer so much. We shall learn that it is not always best to sell hay because it is high, unless we reserve a year's supply. We shall learn that it is not best to lay out all our means, reserving no surplus, even if, by so doing, we are apparently making money. It is far better—more conducive to health, happiness, long life—to make haste to get rich slowly, exceedingly slowly.

Our enforced idleness will give us leisure for long-delayed improvements, necessaries and conveniences of life. Already I hear of farmers planning improvements in case of a dry year, that will add materially to the capacities of their farms. And a thousand and one good things, morally, socially, intellectually and generally, will be done, that were we continually piled with the never-ceasing labor that a good year would bring, would never be thought of. If we have no more rain, let us rejoice all we can. The man whose barn burnt had a splendid watermelon patch upon the ruins. Every cloud has a silver lining, and every case has two sides, and it is much more pleasant and healthful to look upon the bright side.

Is it any consolation to look upon the miseries of others? What land, what State, is more exempt from afflictions than our own loved California? I know of none. The grasshoppers, the chinch-bugs, the rose-bugs, the borers, the roasting heats and marrow-chilling blasts and blizzards, afflict other States with a more deathly scourge than ever drouth, or any other calamity, ever afflicted California. From my old home in Kansas, I just learn that although crops have not entirely failed, suffering is fearful. Most farms are mortgaged to the utmost extent, and unless they have good crops this coming year, ruin is inevitable.

Let us take heart and rejoice. Let us return thanks continually to the Great Giver of all good. S. P. SNOW.

Santa Barbara Co., Jan. 14, 1882.

THE VINEYARD.

A Portuguese System of Long Pruning.

Last week Dr. Bleasdale gave us a note, asking the experience of those who had grown vines with long canes with reference to the effect of the phylloxera upon them. He alluded to a piece of recent European experience bearing upon this practice of growing, which he translates from the Portuguese. It forms one of the appendices to the recent work, *Manual de Viticultura Practica*, by the Viscount Villa Maior. He heads it. "Upon a New System of Long Trailing, Pruning." (*Sobre un novo systema de poda longa e rosteira*):

At the Grange School for the education of apprentices to viticulture, a method of cultivating vineyards has been reduced to practice, which appears to have proved to be extremely productive, and which is founded upon the vast natural fertility of the vine, when cultivated on the plan known as "grand arborescence." An idea may be readily formed of this new method by imagining that a vine, instead of being trained over a high arbor, should be spread out upon the ground with its branches and canes supported on small forked props, just sufficiently high to protect it and its bunches from touching the ground, and turn to account all the radiated heat to mature them. The planting is done in rows, at distances of from 3 to 6 meters asunder (9 ft. to 18 ft). M. V. Nanquette, the director of the above-named institution, states that in many vineyards of Turenne the plants are 6 ft. asunder in the rows, and the rows 18 ft. apart, and that the yield is 50 hectoliters—approximately, 10 pipes of wine to the hectare (2½ American acres). The hectoliter is 26.4 American gallons.

In another place Director Nanquette says: "The most remarkable thing about these vines of enormous size is the condition of perfect health (if we may use the expression) which they exhibit in their entire vegetation, being free from nodosities (black knot), warts or galls on the canes and principal branches, the bark clean, free from moss," etc.

In confirmation of the above facts, it will be enough to call attention to what may be noticed any day in the instance of vines of great arborescence; *i. e.*, trained over arbors or extensive trellises, without needing to cite the instance of the huge old vine at Hampton Court. The healthy and vigorous condition of these vines makes us reflect whether vines which have succumbed to diseases, of which phylloxera is the worst, would not either have entirely resisted their attacks, or at least have remained materially uninjured.

In order to throw some more light on this new system of vineyard culture, I will transcribe the short account which M. Nanquette gives us of it in the *Journal de Agriculture Practique*, of 17th December, 1874, page 846: "The system of cultivating and pruning vineyards known in Turenne as the process of *Chissay, en chaintre*, or *long creeping pruning*, has been employed at the grange-school of Hubandieres for a number of years.

Comparison of the quantity of wine yielded by a vineyard on the creeping system (rastreira), with long pruning, and that of another adjoining, with the same variety of vines, cultivated on Dr. Guyot's method, with cane and bud pice for next year's cane (*pollegar*, literally, a thumb.)

1. One and one-quarter acre, planted and cultivated as above described, produced 1,261 gallons of grapes, which yielded 1,053 gallons of wine and 221 gallons pomace.

2. An equal area, planted on Guyot's plan, produced 662½ gallons grapes, yielding 559½ gallons wine and 117 of pomace. The article is illustrated by two drawings showing the vines loaded with grapes.

According to this system of cultivation, with the vines six ft. asunder in the rows, and the rows 18 ft. apart, the *hectare* would contain only 830 plants, and their yield is incomparably superior to that of vineyards planted with 10,000 or more to the *hectare*. The *hectare* is 2½ acres nearly. "Experience," says M. Nanquette, shows that, not only does this system of long-rod pruning give a far greater return than the old one, in good years, but its mean yield is more regular and uniform."

This fact is accounted for by the diminished risk of spring frosts, the less danger of the flowers proving unfertile, and other accidents which may happen during the period of vegetation.

It must be clear to the mind of everyone who knows what a vine is, and who reflects on isolation as secured by the above system, that its physiological state is far better than where the vines are crowded together. On the other hand, in the instance of an invasion such as oidium or phylloxera, are we not justified in calculating on the efficacy of this system as a preservative, or, at any rate, as greatly facilitating the application of remedial measures?

The roots, rootlets and spongioles of a vine cramped, as in the old system, form a tangled mass, of which no adequate idea can be formed without seeing old vines dug up which have been placed in such conditions. Now, this underground state, so singularly favorable to the propagation of insect pests, finds no place in the system of cultivation at long distances, the use of which can never be too highly praised. So far M. Nanquette. Evidently, the system of vine-cultivation on the plan of "creeping" and "long-rod pruning," resting as it does on valid theoretic grounds, and already to some extent, as we have just seen, deserves at least a fair trial by our vignerons—not in every place nor in all kinds of soil, but where the fertility of the soil is assured, and where the strong and spreading roots of an arborescent vine can find space to stretch themselves without danger of injury from too much moisture. In this system, when properly carried out, we meet with none of the drawbacks to the maturing of the fruit, and, by consequence, for the production of good wine, which are experienced where the vines are trained to trees. On the contrary, this system seems competent to correct the faults arising out of excessive sugar in the grapes, so common in many of the vineyards of Portugal.

Grape Cuttings.

EDITORS PRESS:—Among the appendices to the recent work on "Practical Viticulture," by the Viscount Ville Maior, I found the following interesting discussion of the question as to which portion of a long vine cane will form the best cutting for planting. And as preparing cuttings for sale is just at present in order, I thought it of interest to vineyardists to translate it, and send it out for what it is worth, in the hope that now when so much planting is about to take place the matter may be set at rest once for all, by direct experiment. If what M. Giuseppe Froio says prove to be the fact, much importance will necessarily attach to it; seeing that the country requires so many new varieties of valuable foreign vines introduced, while those cuttings most likely to thrive should be preferred.—JOHN I. BLEASDALE, 613 Merchant St., S. F.

A single cane of one year's growth may furnish more than one plant, by dividing it into suitable pieces, according to its length. It is not desirable that a cutting should be very long, in order to be planted with profit.

Some authors prefer very short cuttings (say from 7 to 10 inches long), and leave one or two eyes above ground.

Now, in view of what has been said, the following questions naturally arise: Which part of the cane will furnish the best cutting? Will it be that in contact with last year's wood, or the portions nearer the extremity of the cane?

The Italian writer, Sr. Giuseppe Froio, in his small but excellent treatise "*Sul wiglior modo di cultivare la vite in Italia*" holds the opinion that the best cutting, that is to say, the one which takes most readily, and forms the best and most productive vine, is that taken from the extreme point of the cane; consequently the farthest from the two-year-old wood.

He declares that "if we take 10 canes (*sarmentos*) and divide each into three parts—the first having a bit of the old wood adhering, the next out of the middle, and the third being the extreme portion of the canes—and if we plant them all in the same soil, and in the same way, and treat them exactly alike, we shall find that those cuttings which take root most readily, and give the best shoots, and come soonest into bearing, are those from the extreme end of the cane."

Villa-Maior remarks: "As I myself have never experimented in this direction, nor met with special mention of it in other authors, I give it with reserve, yet I hope practical men will give it a trial, and judge of it according to its merits."

Froio Continues: "All observations prove in effect that the sap, as it circulates in the vine, exerts its influence always rather towards the end of the cane than towards the lower portions of it, and the old wood is found from year to year ever poorer and poorer, both in fruit and buds, to such an extent as to render it improper to use the shoots thrown out upon it for the purpose of planting. It would appear that the circulation in the vine during August, and through the autumn, deposits juices more nutritive and more life-giving in proportion as they rise towards the extremity of the cane, since the last eyes give always the earliest and most vigorous shoots. Notwithstanding it is only right to say that, with due care, the base, the middle portions and the extremities of canes, of good kinds, in good condition, may each alike serve to form good vineyards."

N. B.—As stated already, the real value of the above doctrine rests upon the circumstance of our having yet to import cuttings from many countries where first cost, freight and loss, render it desirable that cuttings should alone be selected that appear to possess a maximum of vitality. J. I. B.

THE STABLE.

The Horses of California.

Judge Jones, of Ohio, who was in California last fall as one of the U. S. Arid Land Commissioners, was struck with the excellence of the horses which he saw in the city streets, and here and there in the country. He desired to know more of the stock from which the animals descended, and addressed a letter to Joseph Cairn Simpson, Secretary of the Pacific Coast Blood Horse Association, and well known as an equine expert of the highest rank. Judge Jones wrote as follows:

"I have been at a loss to account for the high excellence of the general purpose and roadster horses of California and would be greatly obliged if you could have time to write me a brief statement of the basis of the stock, the blood and character of the mares, and the horses chiefly used as sires."

To this request Mr. Simpson replied at considerable length, the reply being published in the *Call*. We quote the portions of leading interest as follows:

When California was ceded to the United States at the close of the Mexican war, there were few others than the native horses. These were descended from stock imported from Spain, and their characteristics were hardihood, wonderful endurance and spirit. Some of them were horses of very high form and of much beauty. They were admirably adapted for the wants of the people who bred them, and it is doubtful if there ever was a race of horses which equalled them for the saddle. With speed in the gallop only second to the thoroughbred, sure-footed, capable of standing a journey of hundreds of miles without other food than the herbage they could gather in the circuit of a lariat, and covering from 60 to 120 miles a day for a week at a time, they enabled the residents to go long journeys with a celerity which is absolutely astonishing to those who imagined, from the common name, "mustang," that they were the same as the wicked little ponies of Texas and Mexico. They had

The Best of Legs and Feet,

Hard, dry muscles and sinewy limbs. For the uses of the vaquero they were unrivalled. Galloping down hills so steep that an English fox-hunter would dismount and lead his horse, or expect to have his neck broken, stopping at full speed and turning on a square of 20 ft., entering into the spirit of the chase with all the zest of the keenest sportsman, and so intelligent that they knew what to do nearly as well as their riders. No other race of horses could have taken their place, and answered the requirements of the old, old days of California—the days before the stars and stripes floated over the sand hills of San Francisco, before the bunting adorned with the grim visaged bruin, waved over the valley of Sonoma. A short time previous to the conquest a few settlers came from Oregon, and these brought some "American" horses. The same causes led to the introduction of a capital class of "all purpose" horses in Oregon as afterwards came to California, viz.: the long journey "across the plains." Those who had spirit enough to venture on such a long and tiresome pilgrimage had sense enough to know that only the very best animals would do. Before starting, for months, and perhaps years, they were on the lookout for the kind that they knew had the proper qualification, and many "swaps" would be made before they were entirely suited. The early emigrants to Oregon "carried" with them a race of powerful horses, the blood being that of the old-time quarter racers—a combination of Printer, Bacchus, Henry, Lummix, and other strains of noted champions of the short-paths. The immense muscular development which enabled them to rush into top-speed, almost instantaneously, also gave them the power to haul a heavy load, and they were justly celebrated for the business of the farm.

In Northwestern Missouri

There was a great deal of thoroughbred blood, and was the only kind which met with any favor, in those days, in the lead-mining country. As early as 1840 there was a fine race course at Galena, and in 1846 there were two in active operation—one at Dubuque, one at Mineral Point, with quarter-paths near every village. Blood horses came from Kentucky, Tennessee, Alabama and Mississippi, raced there, and were

sold. The animals which carried a great share of this blood were the ones sought after for the California trip, and these had the courage and hardihood to bring them through to the end. The whirl and perfect fever of excitement among the new-comers prevented them from paying any attention to the horses after the journey was completed. They were sold for whatever they would bring. Some of them were turned out and never thought of again, and the pedigrees which they had been so careful in looking up, before the purchase was made, forever lost. There was a preponderance of mares. Whenever a person was looking for a team to cross the plains, the preference was given to mares, and, if of equal quality, the female would bring the largest price. Even in

The Early Days of California

Many thoroughbreds were brought here, one class of which had short and unfashionable pedigrees, and these were quite numerous, while a few were of capital breeding. The inferior were of vast service in improving the general stock of the country, while the better have left their impress on the blood stock, and from them have descended very superior race-horses.

Oregon breeders sent mares here of the blood already mentioned, being, as a rule, large and highly finished, and some of them capable of running from a quarter of a mile to a thousand yards very fast. Of this class were "Oregon Amanda," "Big Gun," "Comet," etc., animals which would weigh over 1,200 lbs., and 16 hands in hight. Before we leave the consideration of the old-time mares it may be as well to note another element which had an effect in perfecting the heavier California horses. When the excitement and tumult which followed the discovery of gold had partially subsided, men of acumen foresaw the prominent position which this country must eventually occupy in agriculture, and especially for horse-breeding. In addition to the importation of high-class thoroughbreds from England, they also brought some of the heavier kinds—Clydesdales, coach stallions and English draft horses. No one knows better than Judge Jones the difference between the Clydesdales of thirty years ago and those which are most in favor now. There has been such a demand for animals which would weigh more than the ponderous Normans, that the best qualities of the Clydesdales have been sacrificed to gratify the prevailing mania, and in place of the compact, symmetrical animal of 1,400 or 1,600 lbs., the range now looked for is from a minimum of 1,600 lbs. to a maximum of over a ton. William Hood, of Sonoma county, H. W. Seale, of Santa Clara county, and others, were instrumental in introducing these breeds, and, coupling them with the finer strains, increased the size, while much of the quality of the better blood was retained. Thus Mr. Seale, in the second generation from the Clydesdale, has animals of large size which can trot fast, the result being obtained by crossing with his stallion Elmo, a lineal descendant from the imported Barb, Grand Bashaw. This sketch, though necessarily brief, will show that there was a good foundation laid to produce the excellence noted by our correspondent, and that the maternal line could scarcely be bettered. There is less difficulty in tracing the blood of the sires, as the advertisements of stallions furnish the information.

The Belmont Stock.

Of all the old-time stallions of California, Belmont takes the precedence. He has left his impress on every class of horses on the Pacific coast. On the race-course, on the trotting tracks, on the road, before the carriage, on the farms, hauling the heavy trucks of the cities, stages, street railways, everywhere are to be found his descendants, and in every situation playing well their part, and gaining honor in every field. It is not necessary in a disquisition on roadster and general purpose horses to follow Belmont's offspring on the race-course; the trotting proclivities of his descendants, however, come legitimately into the discussion. Belmont's breeding in the first place will be properly considered, and that could scarcely be found fault with by the most captious of critics. His sire, American Boy, was by Sea Gull, a son of Expedition, and his dam was a sister to Boxer, and she was also by Expedition. Judge Jones is well acquainted with this strain of horses, and he is well aware of the immense value of the horses which were brought by the "Jersey settlers" to the stock of Ohio. The late George Crain of Cincinnati, (and a better judge of coach and carriage horses never lived), told the writer that he could always find a few extra carriage horses in the Jersey settlement from the Expedition stallions, which were kept there. That was before the time when so much attention was paid to trotters; but he said it was no trouble at all for a pair of them to pull a heavy coach at a four-minute gait, and in his opinion there never was a family which could excel them in size, style, high form, good color, and the strong family resemblance, which made it easy to find those which would match closely.

Belmont was taken by Henry Williamson to Oregon, and was brought from there to California. Contemporary with him were the thoroughbred stallions Ashland by imported Glencoe, and Billy Cheatham by Cracker, Jack Hawkins by Boston, Rifleman by imported Glencoe, Belshazzer by imported Belshazzer, Joseph by Hermes, imported Lawyer, imported Nena Sahib, imported Hercules, Young Consternation by imported Consternation, and quite a number of others. Very many of these horses were large, stylish animals, and from 1853 there was no lack of patronage. This disseminated the thoroughbred blood in every portion of the State, and then there were other strains which were of vast service among the

Early Importations.

For instance, there was brought here about 1857, Abdallah, by Rysdyk's Hambletonian, his dam by Roebuck, and his grandam by Henry, the competitor of American Eclipse. He is described as being 16 hands half an inch high; color, a mahogany bay, and a horse of very fine appearance. In 1860, Mystery was brought here, and he is described as "a dark chestnut, full 16 hands, and weighing about 1,200 lbs." He was by Cassius M. Clay, the sire of Geo. M. Patchen, and his dam was claimed to be thoroughbred. As early as 1858, Rattler was brought here from the northern part of New York State, and he was by Biggart's Rattler. He was also 16 hands, and weighed 1,200 lbs. John Nelson, by imported Trustee, came about the same time, and his dam was by Abdallah. There was brought with Rattler, another son of Trustee, his dam by Haight's Paymaster. Quite a number of horses were brought here in 1860, '61 and '62, by Vermont Black Hawk. One of them, Benicia Boy, is described as being 16 hands and weighing 1,260 lbs. Mine Creek, Black Hawk, Comet and Manhattan, of this strain, were medium-sized horses. Vermont is represented as 16 hands, weight, 1,100 lbs., and Stockbridge Chief, 15¾ hands, and with a weight of 1,131 lbs. Burgess' Sherman-Morgan is classed as 15¾ hands, and 1,100 lbs.; Keokuk, by Vermont Black Hawk, 15¾ hands, and 1,080 lbs.

Information for Others.

It does not require further explanations to acquaint Judge Jones of the grand foundation which was laid here in these early days for the excellence in the classes he has noted, but to others who are not so well versed in pedigree, it may be as well to throw more light on the subject. There was a large amount of thoroughbred blood of nearly every strain, and not a trotting family of any note which had not representatives previous to 1865. Hambletonians, Mambrino Chiefs, Vermont and Long Island, Black Hawks, Hiatogas, Clays, the Morse Hoars, Kentucky Hunter, Morgan, Patchens, Royal George, etc. Since 1865 there have been such a number of importations apart from thoroughbreds that it is safe to assert that California is now better supplied with trotting stallions than any State in the Union. But before calling attention to the later importations we must notice a family, peculiar to California, which is likely to increase the pre-eminence in a still greater degree. In fact, the "great sensations" with a few exceptions, which startled the trotting world on the other side of the mountains, have sprung from this family. The head of the fountain was a horse which was brought to Sacramento in an early day, and who was afterwards called St. Clair. He was of medium size, muscular in form, and apparently of high breeding. Though every effort was made to trace his origin, nothing could be learned about his pedigree, but those who were the most familiar with his appearance, say that there can be no doubt that he had a great deal of the blood of the thoroughbred. This idea is strengthened by the looks of his sons and daughters. Nearly all of them show a great deal of quality, and his daughter, Lady St. Clair, would pass for a thoroughbred, and Mayflower and Mayfly, the dams of Wildflower and Bonita, show a great deal of finish. The first really notable event in trotting in California was when Occident trotted a mile at Sacramento in 2:16¾. It was the fastest record at the time it was made, and he was dubbed the "California Wonder." The three fastest two-year-olds in the world are from St. Clair mares, and the fastest five miles, trotting or pacing, is the 12:56¾—or about that figure—of Lady St. Clair. Not having the record at hand it may not be the exact time, but, at all events, it was some seconds faster than the time of Lady Mack—13 minutes. St. Clair was a pacer, though his offspring generally trotted. Attention was first drawn to him by the hardihood and capital working qualities of the St. Clairs, which were hauling carts in the construction of the Central Pacific railway, and the purchasing agent of the company would pay a higher price for a St. Clair then one of any other breed of the same quality.

Since 1865, the importation of trotting stallions have embraced some of the foremost animals of the country, and it is a matter of record that more money has been paid for them in California than any other State. Thus Governor Stanford paid $25,000 for General Benton, $12,500 for Electioneer, and $10,000 for Mohawk Chief. Thirteen thousand dollars was the cost of Steinway. William Corbitt is reported to have paid $20,000 for Irvington and $5,000 for his yearling brother Arthurton. Elmo cost $15,000, and Carr's Mambrino some $7,000 when a year or two old. Sam Purdy was sold at auction on California street and realized over $20,000 in gold, when coin was at a good deal of a premium over greenbacks, and the list could be extended so as to substantiate the position beyond doubt. Although there were so many strains of trotting blood antecedent to 1865, since then there has been a wonderful augmentation. The sons of Rysdyk's Hambletonian are Ulster Chief, Mohawk Chief, Echo, Irvington, Arthurton, and the now celebrated Electioneer. There are several Almonts of the finest breeding, and Happy Medium has the fast Brigadier and Milton Medium to sustain the credit of the Princess family of Hambletonians. Strathmore has Steinway, and though his famous son Santa Claus is in the East, he is still owned in California.

There are several of his colts here, with a weanling brother at Palo Alto. Woodford Mambrino has Abbotsford and Inca, and Mambrino Patchen, Carr's Mambrino and two others. The most noted grandson of Rysdyk's Hambletonian in California, is Whipple's Hambletonian, who, more appropriately, should have figured in the earlier importations, though he is still in service, hale and vigorous. There are

So Many Promising Young Stallions

In California, that it would be manifestly beyond the scope of this article to mention them, though some are of such prominence that they are well worthy of a place. Priam, by Whipple's Hambletonian, from a thoroughbred daughter of imported Glencoe, Revere, is the sire of Honesty, with a four-year old record of 2:25¾, and of Upright, from the thoroughbred mare, Gilroy Belle, which is held to be of fully as much promise. Nephew, a son of Mambrino, by Edward Everett, is the sire of Fred Arnold, and others which show well; and so the list could be extended until the repetition would become tiresome to all excepting those who have more than a passing interest in the breeding of trotters. The mares, all which have been brought here since 1865, are entitled to as high a place as the stallions, and to present their claims properly would require fully as much space. A few illustrations will show something of the quality. L. J. Rose, in 1870, imported Minnehaha, by Bald Chief. She has three daughters in the 2:30 list, viz: Beautiful Bells, 2:29½; Sweetheart, (two-year-old record), 2:26½; at three years old, in 2:22½; Eva, two years old, 2:26, 2:26½, and the granddaughter of Minnehaha, Hinda Rose, with the still more wonderful performance of 2:36½ when a yearling. Mr. Rose at the same time imported Gretchen by Mambrino Pilot, and she is the dam of Del Sur by the Moore record at four years, 2:25, and Romero by A. W. Richmond, at the same age, 2:22½. She is also the dam of Inca and Sable, a very fast mare, now in the breeding stud of William Corbitt, at San Mateo. Barbara, by Bald Chief, the dam of Len Rose, was brought at the same time. There are so many celebrated mares at Palo Alto that it would require columns to present their claims to distinction, and the same can be written of the studs of Wm. Corbitt, H. W. Seale, John B. Haggin, Daniel Cook, Peter Coutts, Jesse D. Carr, while all the way from San Diego to Siskiyou, and from the ocean to the Sierras, are a great number in the hands of the smaller breeders which will bear comparison with those on the large stud farms.

THE FIELD.

Irrigation Ditches in Colorado.

Some items of the experience of our Colorado neighbors, as given by a correspondent of the *Mark Lane Express*, may be of interest: It is always a few years before a canal runs to its full capacity. In the first place, the loose earth of the artificial banks is unable to withstand the pressure of the water until they are settled down and firm. Again, as these canals are all formed with the plow and horse-scraper, both banks and bottoms are very rough, which at first is the cause of a great amount of friction, retarding to a considerable degree the passage of the water. This is generally obviated in time by the action of the water smoothing off projections and filling up hollows. One of the greatest drawbacks to a new canal the first few years is the seepage or soakage as it is called, which is reckoned at almost 50% of the whole water.

The soil having been dry for centuries requires an enormous body of water to thoroughly saturate it, and its percolations to a lower level are also considerable. The soil is very deep and porous, and it is only after a number of years when the glutinous sediment carried down by the water falls to the bottom and partially puddles the ditch, that the canal carries anything like the supply of water to the points of delivery which enters at its mouth. The carrying capacity of a canal at the end of five years is reckoned to double its capacity when newly started. Irrigation farming the first few years is almost as unsatisfactory as the working of the canal. Even allowing the farmer to get his full supply of water delivered over the bank of the main ditch, he has often to run it in a lateral ditch for several miles over a parched, dry soil before getting it on to the land he intends to irrigate. The small body of water and big surface of the lateral causes the loss of a great portion of the water at a time when the newly-broken soil requires double the supply to saturate it which it will do after being irrigated for several years, and thoroughly saturated and consolidated. Thus it usually occurs that the farmer under a new ditch barely gets half his supply of water, when double his water right would not be sufficient for his purpose. These causes frequently lead to a great amount of trouble and dissatisfaction with the management of a new ditch the first few years. The oldest ditch of any consequence in Colorado is the Greeley Colony ditch constructed in 1870. This ditch is on the Cache la Pondre river, and lies between that river and the Larimer and Weld ditch already referred to, watering all along the lower bench lands of the river parallel to that canal. A good deal of difficulty was experienced at first in getting this canal to work satisfactorily. It is now wholly owned by the farmers under the ditch, who appoint a superintendent to look after the canal and the water, with the result that the proper quantity of water is now delivered with perfect regularity when required. The English company who own the Larimer and Weld ditch sell their water in what is termed water rights. A water right constitutes a quantity of water delivered over a weir at the rate of 1.44 cubic feet per second, which is supposed to be sufficient to irrigate 80 acres. This is delivered over the bank of the main ditch, the company having nothing to do with the laterals leading away from it, these being managed by the farmer or farmers, as the case may be. In the water right certificate the company insert clauses relieving them from consequential damages caused by deficient supply of water during times of drouth, or in event of an accident to the canal; in such cases the water in the canal is divided equally amongst the water rights. Every owner of a water right is given four shares in the canal, and as soon as the sufficient number of rights are sold to cover the capability of the canal, it is handed over to the owners of the water rights to manage for themselves. A water right on newly broken sod has only been found sufficient for 40 acres; but after a few years and with a regular rotation of crops, using water all over the season, it may be equal to 120 acres. It has been found so in California. The Larimer and Weld Ditch Company are selling these water rights at £100 each. The least quantity sold is a quarter water right for $125, suitable for 20 acres of land. Where the water is rented year by year it costs $1 an acre for the season. The company sell these rights either for cash or on five year's time in equal installments, paying in advance 10% interest on deferred payments. Their lands are sold from $7 to $12 per acre, being appraised, not on account of any difference in quality of soil, but solely on the ground of its suitability for irrigation. The rough and steep soils being cheapest and those with a nice, smooth surface and suitable grade being dearest, as being capable of being watered with less waste of labor and water than the rougher parts.

Bluestoning Seed Grain.

EDITORS PRESS:—I read in your issue of the 7th, a communication signed J. B. B., Oakdale, on bluestoning wheat. I think I recognize in your correspondent an old friend, a good farmer and a close observer. I have not had the extended experience of J. B. B., but so far as my experience and observation goes, when wheat is properly prepared by bluestoning, and not put in when the ground is too wet, or while it is raining, it is a certain preventive of smut. With J. B. B, I had the impression that volunteer wheat never smutted, until the past season, the volunteer crop of which was very smutty. On my own volunteer crop, I had sown some additional seed, which was well bluestoned as any grain I sowed. The crop was quite smutty, while volunteer wheat around where no additional seed was sown, was very much more smutty. My summer-fallow and winter-sown wheat, the seed being all the same as that sown on the volunteer, and out of the same lot, prepared at the same time, had only an occasional head of smut in it.

In the harvest of 1878, one of my neighbors had a very smutty crop of barley. Another neighbor got some of it, and sowed it without soaking in bluestone. I at the time asked him, he being a man of experience in the business, if he was not afraid of having a smutty crop of barley. He answered no, he had never seen barley smut when sown in dry weather, and never fail to smut when sown while raining. The following season being the dryest we ever had before this, the crop merely sprouted and died out, so we could not tell the result; but in the fall of 1879 my neighbor and I sowed from the same seed without steeping in bluestone, and both had some smut in our crops. In the fall of 1880 the same man soaked his barley in bluestone, both of us sowing on the same character of land, a black adobe, or dry bog as it is called here; I sowing without any preparation of the seed, and both had barley entirely free from smut, although at the time of sowing *there was smut in the seed.*

In the harvest of 1880 the volunteer crop was entirely free from smut; in the harvest of 1881 the volunteer crop was very smutty—of course I mean wheat in both cases, and for all this section.

I do not pretend to account for this, but will leave it for some scientific man to explain, if he can; for myself, I believe that a particular state of the atmosphere occurring at a particular stage of the growth of grain has a tendency to produce smut. From this statement will some one else please *guess* at the cause? J. T.

Tulare, Cal.

NEW USE FOR SHEET IRON.—An inquiry has been started as to the possibility of using sheet iron as a covering for cotton bales. The present hemp or flax covering is used solely on account of its cheapness; but as it admits moisture and sand, it causes a considerable waste of cotton in the course of transportation. A number of heavy cotton dealers of Memphis, Ky., have written North for quotations on No. 30 sheet iron. If the change should be generally made, it will produce an enormously increased demand for that material. Each bale will require a sheet 76x44 inches, with a weight of 22 lbs. The annual crop of cotton would absorb 66,000 tons of sheet iron.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

Grange Elections.

ELLIOTT GRANGE, San Joaquin Co.—J. Wiltse, M.; Jas. Hoyt, O.; Mrs. Jennie Ritter, L.; F. Ritter, S.; Robt. Adams, Jr., A. S.; Mrs. F. L. Johnson, C.; Wm. Ennis, T.; H. H. West, Secy.; L. W. Pound, G. K.; Mrs. Emslie, Ceres; Miss Maggie Emslie, Pomona; Miss Amy O'Neal, Flora; Mrs. M. H. West, L. A. S.

FLORIN GRANGE, Sacramento Co.—W. L. Montgomery, M.; Hiram Simons, O.; W. K. Garwood, L.; J. Reese, S.; C. Towle, A. S.; W. A. Smith, C.; D. H. Buell, T.; D. Reese, Secy.; Joseph Jackson, G. K.; Julia F. Wilson, Ceres; Maggie Meadows, Pomona; Ada Fassett, Flora; Kate Jackson, L. A. S.

WASHINGTON GRANGE, San Joaquin Co.—Nelson Dill, M.; S. C. Waters, O.; A. A. Van Zandt, L.; Joseph Debold, S.; Mrs. A. E. Blyther, C.; Chas. Clyther, T.; R. D. Wilson, Sec'y; Wm. Beck, G. K.; Miss Josie Stamper, A. S.; Miss Amy McIntyre, Pomona; Miss Gerty Holman, Flora; and Miss Rosa Stamper, Organist.

MERCED GRANGE.—R. S. Clay, M.; H. C. Healey, O.; A. Smith, L.; W. W. Gray, S.; Wm. Wheaton, A. S.; S. W. Heath, C.; Thomas Upton, T.; Mrs. H. J. Ostrander, Sec'y; M. D. Atwater, G. K.; Mrs. Atwater, Ceres; Mrs. Smith, Pomona; Mrs. Heath, Flora; Mrs. R. S. Clay, L. A. S.

BENNETT VALLEY GRANGE.—R. A. Temple, M.; G. N. Whitaker, O.; Dan. Mills, L.; Chas. De Turk, S.; Chas. D. Bonner, A. S.; Andrew Lacque, C.; W. H. Lunsden, T.; Fannie Lunsden, Sec'y; Perry Whitaker, G. K.; Mrs. C. Lyman, Ceres; Mrs. E. E. Whitaker, Pomona; Mrs. Chas. De Turk, Flora; Miss Sarah Lacque, L. A. S.; Trustee for three years, D. Lacque.

ST. HELENA GRANGE.—David Edwards, M.; John Lewelling, O.; Sarah Pellet, L.; Capt. Peterson, S.; F. W. Hewes, A. S.; Mrs. Samuel Stone, C.; Chas. A. Storey, T.; H. J. Lewelling, Sec'y; Samuel Stone, G. K.; Jas. L. Peterson, Ceres; Mrs. Hannah B. Weinberger, Pomona; Miss Fannie Stone, Flora; Mrs. Wm. H. Castnen, L. A. S.; Mrs. Wm. Castnen, Organist.

GEORGIANA GRANGE.—H. F. Smith, M.; F. M. Pool, O.; Emma Limbaugh, L.; J. H. Stayton, C.; Jesse Knott, T.; J. Pool, Sec.; C. P. Hensley, S.; P. H. Gardiner, A. S.; Mary Hensley, L. A. S.; Eliza Limbaugh, G. K.; Martha Pool, Ceres; A. E. Pool, Flora.

NATIONAL RANCH GRANGE, San Diego Co.—W. C. Kimball, M.; Charles Hubbell, O.; Flora M. Kimball, L.; Henry C. Barnes, S.; N. P. Rolund, A. S.; James Todd, C.; Thos. Walker, T.; Mrs. Jennie H. Barnes, Sec.; Sarah C. Kimball, G. K.; Mrs. Carrie Moore, Pomona; Mrs. Mary C. Morse, Flora; Mrs. A. M. Field, Ceres; Josie Perry, L. A. S.

PLYMOUTH GRANGE, Amador Co.—E. S. Potter, M.; F. Vanderpool, O.; S. J. Worley, L.; M. L. Gregg, S.; L. T. Lefebre, A. S.; Mrs. M. M. Ford, C.; John Sharp, T.; J. Salee, Sec'y; S. C. Wheeler, G. K.; Ida Caldwell, Pomona; Sister McMillan, Flora; Sister M. E. Wheeler, Ceres; Sister Vanderpool, L. A. S.

CERES GRANGE, Stanislaus Co.—H. W. Brower, M.; A. J. Boyd, O.; P. W. Cook, L.; M. J. Hall, S.; R. K. Whitmore, A. S.; Mrs. H. M. Whitmore, C.; John Service, T.; W. G. Munger, Secy.; E. Hatch, G.; Miss Nellie Whitmore, Ceres; Miss Nettie Brouse, Pomona; Miss Mamie Williams, Flora; Mrs. R. K. Whitmore, L. A. S.

WHEATLAND GRANGE, Yuba Co.—Daniel Fraser, W. M.; Julius Hollister, O.; Mrs. Linnie Keyes, L.; Samuel E. Inlow, S.; Cyrus K. Dam, A. S.; Mrs. R. H. Durst, C.; A. I. Webster, T.; I. W. Huffaker, Sec'y; Frank Krishner, G. K.; Miss Emma D. Scott, Pomona; Mrs. L. Fraser, Ceres; Miss Mary I. Ostrom, Flora; Mrs. L. G. Jasper, L. A. S.

ELMIRA GRANGE, Solano Co.—Jas. A. Clark, M.; G. W. Tilison, O.; G. W. Fraser, L.; M. D. Cooper, S.; Jas. McCrory, A. S.; J. H. Bullard, C.; Jno. M. Elliott, T.; A. P. Coburn, Sec'y; G. W. Ruscheart, G. K.; Sister Cooper, Ceres; Sister ——, Pomona; Sister Bullard, Flora; Sister K. McCrory, L. A. S.

PLACERVILLE GRANGE, El Dorado Co.—C. G. Carpenter, M.; A. S. Cook, O.; F. Goyan, L.; L. Gignac, S.; I. S. Bamber, A. S.; Minnie Bryan, L. A. S.; J. Bryan, C.; Jacob Lyon, T.; J. P. Allen, Sec'y; J. Burnham, G.; Susan Goyan, Ceres; C. Allen, Pomona; M. Martin, Flora; F. M. Dickerhoff, Trustee.

VALLEJO GRANGE, Solano Co.—J. T. Deming, M.; S. S. Drake, O.; John Frisbie, L.; James Hunter, S.; Wm. Corwin, A. S.; Mrs. S. Hobbs, C.; Mrs. M. L. Robinson, T.; Mrs. F. A. Mosley, Sec'y; R. Miller, G. K.; Mrs. Hettie Deming, Ceres; Clara Deming, Pomona; Miss Emma Corwin, Flora; Miss Rose Drake, L. A. S.; C. B. Deming, Trustee.

A CO-OPERATIVE society in Philadelphia, having 980 members, owns three groceries and a meat market that pay well. The dry goods and shoe stores hardly pay expenses, but on the whole it does well.

A Day at Haywards.

Eden and Temescal Granges installed officers together at Haywards, Jan. 14th. Thirteen members from Temescal, with the Edenites, afforded a good attendance, and rest assured a pleasant and animated time was had. State Secretary, J. V. Webster, assisted by P. H. McGrew, of State Ex. Com., duly installed the officers. Bro. Webster also made an excellent and encouraging speech, followed by brief and interesting remarks by other Brothers and Sisters. Mrs. May and Miss Lucy Stone received the third and fourth degrees, after which the latter was elected Flora in place of Miss Angie Woods, resigned.

It is a noticeable feature that this Grange is taking in young members, and old ones are being re-instated in its working ranks. The enrolling of young members has been the past want of the Granges in our State, and we a e glad to observe, from all quarters, that our young people are now coming forward more freely than before, and pledging themselves for active and vigorous work for the good of the Order. The importance of admitting young members cannot well be overrated. The reports of the Treasurer and Secretary showed Eden Grange in good financial condition. The ladies of Eden spread their exceedingly well prepared harvest feast in one of the best constructed and arranged fraternal halls we have ever visited in this State. The Grange evidently has chosen a sterling Master in Bro. Anway, and well supported him with good assistants. Bro. B. Woods and family are about moving to Peach Tree, Monterey county, to the sincere regret of many friends present. Bros. Anway and B gg , Masters of Eden and Temescal Granges, were appointed a Committee on Ways and Means for advancing the Grange work in Alameda county, with a view to the revival of Centerville and Livermore Granges, and their efforts will be heartily supported, no doubt, by all their worthy associates. Bro. Cunningham, of Eden, provided a spanking team from his Oakland stable, for a delighted load of Temescal passengers, who, on returning, unanimously voted "Edenward" "a pleasant road to travel."

INSTALLATION AT PLACERVILLE GRANGE.—District Lecturer, A. A. Bayley, assisted by C. E. Markham, installed the officers of Placerville Grange, on last Saturday evening, Jan. 7th. At the close of the installation and the regular business of the Grange, about a quarter past nine o'clock, a number of invited guests appeared, and were admitted and heartily welcomed, among whom were School Superintendent C. E. Markham, Supervisor A. A. Bayley, F. M. Dickerhoff, Capt Wiltse, Frank Goyan, L. Gignac, J. P. Allen, Wm. and Philip Kramp, and many others; also the wives and daughters of many of them. A table was soon spread and loaded with a splendid lunch, to which all seemed to do ample justice. A couple of songs were admirably rendered during the evening, and several short speeches were listened to from both members of the Order and visitors, all of which, together with the general social chat before and during supper, rendered the affair highly enjoyable to all present, and at 11 o'clock the congregated throng took its departure, feeling that Placerville Grange was far from being a cold "corpus" as yet; and the mental wish must have been most general, that the institution may not only survive, but grow in numbers and strength, to participate in many more of these annual installation feasts. Much good has been accomplished since the establishment of the Order in this county, as may be clearly seen by the greatly increased acreage of crops, the better system of agriculture, and especially in permanent improvement. Every farmer should take an interest in the Grange for the good it has done, and the good it is yet capable of doing.

TO MAKE quickly-drying polish or varnish to be applied to small turned articles while in the lathe, with a hard and glossy surface, dissolve ten ounces of shellac in one gallon of wine spirit by gently heating over a water bath and stirring. Let it stand for several days in a covered vessel, then draw off the clear portion from any sediment, for use. For ebonizing articles of this kind, put the wood for about half an hour into a hot solution of one ounce of logwood extract in a quart of water, and then transfer to a warm solution of one pound of copperas in a gallon of soft water, and let it remain in this bath for several hours. Give the pieces a second dip in the logwood and iron liquors, then rinse and dry.

SHEET zinc is largely used for ceilings in Germany, especially where the beams of the upper floor are made of iron. The use of wood is entirely dispensed with, and excellent decorative effects are produced by stamping, painting and gilding, or bronzing a part of the ornaments.

IMPROVING THE MISSISSIPPI.—The Mississippi valley members of Congress will meet soon to consider the improvement of the Mississippi. They say that they are determined to have an appropriation this season, and are all in accord.

THE Illinois Supreme Court decides that a Board of Education cannot set apart a certain school for colored children and exclude them from others.

Agricultural Notes.

CALIFORNIA.

ALAMEDA.

LIVERMORE DISTRICT.—*Herald:* Our grape men have begun plowing their lands for the reception of cuttings, and planting will soon begin in earnest. There has been expressed by some a fear that the present will be a dry season, and an opinion that it would be best to await a certainty of a good year before planting. That the rainfall has so far in the season been light is not the least reason for believing there will not be a sufficiency of rain before its close. In fact, it rather favors such a conclusion. Many of our best years show a light rainfall to the middle of January. Our advice to our grape men is to get in their cuttings as soon as possible, and in the best possible condition. If the rainfall amounts to nine inches, and it never but once fell below that figure, good cultivation will pull the vines through.

COLUSA.

CROP PROSPECTS.—*Sun*, Jan. 14: Notwithstanding the heavy and cold north winds of the past week, we cannot but regard the crop prospect of Colusa county as favorable. It will take but little more rain, at the right time, to make us big crops. There was a very large area summer-fallowed, and this has been put in in unusually good order. The lands that were overflowed last year and planted this, will make sure crops if we have an extra dry spring. As will be seen by another item, the first half of January has not given us much rain for some years back.

THE WEATHER.—We have had less than an inch of rain in January. In 1877 January gave us no rain up to the middle. In '78, up to the 14th, it had given us only a little over a half an inch. In '79, up to the middle of January we had for the month only three-fourths on an inch. In January, '80, we had less than an inch and a half up to the middle of the month, and in '81, January gave us less than an inch up to the middle, so there is nothing to get scared at even if the north wind does howl.

CONTRA COSTA.

THE SEASON.—Martinez *Gazette*, Jan. 14: Notwithstanding the bright, clear sunshine, the biting, searching north wind that has been blowing several days this week, has made the weather as coldly disagreeable as any we have had this season, and we hope for an early change that will bring with it moderate rains, for which the farmers are now ready, nearly all of them having finished their seeding, for which the season has been unusually favorable. We do not indeed remember any season when at so early a date so large a portion of the seeding was completed. We are, from all appearances to reckon on but a light measure of rainfall for the season, but if we get the usual proportion that falls after this date, and it is fairly distributed over the coming four months, we can reasonably count on a good harvest.

FRESNO.

EDITORS PRESS:—Our section of country, though situated in the very center of agricultural wealth, has so far been slighted in the way of winter rains. Though most other portions of the State have received their due *quantum* of rain, it seems that we are left without. The farmers generally have planted their usual amount of acreage (though some would plant more in case of rain), expectant of the usual providential favors. The loss to the interests of the county will be considerable, doubtless, but there never was a time in the history of the county when we were better able to stand a drouth than at the present, owing to large area of irrigated lands. Should abundant rain fall even in February, we would doubtless raise fair crops from seed already sown, while that sown after would probably make hay. The substituting of various other crops, instead of cereals, has tended much toward making this county what it is, and consequently will enable it to stand such a shock of drouth as it could not otherwise undergo without almost absolute ruin to its agricultural interests.—C. M., Selma, Cal., Jan. 17, 1882.

KERN.

CAUSE FOR CONGRATULATION.—*Californian:* If there is to be a dry season throughout the southern part of the State, we have reason to congratulate ourselves upon the fact that our lot is cast in the delta of Kern river. There is reason to believe that the supply of water for irrigation will be ample. It will certainly be much greater than that of the last dry season. If used with a fair degree of economy it will suffice to maintain a prosperous condition of the farming interests of the valley. The crops will be just as large as usual, if not larger, and prices will be better. Those who make good use of their opportunities will have no reason to complain of results.

A DROUTH APPREHENDED.—Louis Gurnett, of Glennville, who was here the early part of the week, says the people of Linn's valley are very apprehensive of a drouth, the disastrous consequences of which they have heretofore experienced. Two good years have placed them in a prosperous condition, and, while they are in a state to tide over one bad year, the prospect is not pleasant. The locality is one, provided there is a fair amount of rain, where any industrious man may do well, and it is surprising the accumulations many have made in a short time.

LAKE.

PLANTING.—Lower Lake *Bulletin:* We noticed a day or two since 27,000 grape cuttings being taken on to the lands of the Clear Lake Water Co. to be planted on grounds already prepared. D. M. Hanson has just planted a nice orchard of assorted fruit bearing trees.

LOS ANGELES.

STORM NOTES.—*Commercial*, Jan. 14: The Signal Service observer reports a temperature of 33° registered early on Thursday morning. We believe this is the lowest registered in several years. Ten inches of snow fell at Colton; four inches fell at Spadra, and three inches at San Fernando. Ice formed in this city nearly a quarter of an inch thick, and in the lowlands to a greater thickness. Deep snow lies on the mountain slopes in all directions. The rain and snow fall of Thursday amounted to six-hundredths of an inch.

PASADENA POMOLOGISTS.—At a meeting of the Pasadena fruit growers on Monday, a committee, consisting of Messrs. P. M. Green, D. R. Risley and O. S. Dougherty, which was appointed to ascertain the amount of the fruit crop and the most advantageous method of disposing of the same, reported as follows: The total number of fruit trees in the Pasadena and Lake Vineyard districts they gave as 52,235; of vines, there were 103,228 raisin grapes and 31,050 wine grapes; making a total of 134 288. They estimate the number of boxes of oranges at 3,000 and lemons at 500. Pasadena will ship not less than 10 carloads of oranges and lemons this season.

CITRUS ORCHARDS.—Mr. W. H. Workman, chairman of the fruit growers' meeting held in Union hall Tuesday, appointed the following gentlemen as a committee to investigate the condition of our citrus orchards, and report to the County Horticultural Commissioners all cases needing treatment: A. B. Chapman, Santa Anita, Chairman; C. E. White, Pomona; A. B. Clark, Orange; B. M. Lelong, Los Angeles; E. E. Wise, Duarte; H. G. Bennett, Pasadena; S. McKinley, Vernon; D. Halliday, Santa Ana; J. D. Young, Ballona; L. L. Bequette, Los Nietos; A. Phillips, Alhambra; — Wright, El Monte; Geo. R. Hinds, Anaheim; Robert Strong, Westminster; S. K. Sewall, San Gabriel; Dr. Wall, Tustin City; C. B. Wright, Compton.

MERCED

CROP PROSPECTS.—*Argus*, Jan. 14: The cold, dry weather prevailing throughout this valley has a tendency to make farmers look exceedingly blue. Though it is not too late for copious showers to enable farmers to yet plant and raise average crops this season, but all fear that a dry season is upon us, and are therefore discouraged. Nevertheless, plowing and seeding continues, farmers having plentiful stores of feed and seed, and provided rain should fall in time, they may have a paying harvest. As there are facilities for irrigating large bodies of good wheat land from the canals and ditches in the county, and numerous small farms that are supplied with water for irrigation by artesian wells, none need fear a famine, and we hope that all who have land so situated as to be available for irrigation will put it in order at once, and be ready to make a crop if the season fails.

NAPA.

BERRYESSA ITEMS.—*Register:* The copious rains with which our valley has been favored during the past six weeks give to all our farmers the hope of an abundant harvest. All those who have not already finished seeding are vigorously at work plowing the moist earth and scattering the seed which, if the rains continue, is to bring a liberal reward for their labor. Stockmen are wearing cheerful faces as the fresh, green grass is rapidly starting up, and in a few days, if the weather continues warm, will afford abundant feed for impoverished flocks and herds.

SAN BERNARDINO.

THE STORM.—*Index*, Jan. 14: The snow-storm of yesterday is said by everybody to be the biggest storm ever known in this valley. It is said by good authority that at the time it quit snowing, the ground was covered to the depth of 10 inches; as the snow was melting all day, there must have been over a foot of snowfall, so that the water it will furnish will be as much as a rainfall of two or two and a half inches. The snow on the mountains is sufficient to remove all fear of a scarcity in the streams for irrigation purposes. The snow going off slowly, as it is, will all be taken up by the ground, and if we get the usual amount of spring rains, the grain crop will be insured. With the mountains covered with snow, we may feel reasonably certain that we will get a good supply of rain from this time on. Last evening about sundown it was feared the fruit trees would be badly damaged by the cold, but at present there is no fear on that score. It did not freeze as much by considerable as was expected, and remained cloudy all night, so that orange trees and others are not supposed to be damaged any up to this time.

INSPECTOR.—L. M. Holt has been appointed horticultural inspector at Riverside.

SAN DIEGO.

EDITORS PRESS:—A phenomenal storm has visited this region. On Wednesday, 11th inst., the monotony of dry, sunny weather was varied with a cold north wind, continuing until near evening. About daybreak on the 12th, a sound, as of falling snow, was heard on the roofs, the actual presence of which was confirmed by a glance without. A strong east wind set in, and

bore in upon us a steady storm of alternate snow and rain throughout the day, and at intervals during the night. A full inch of snow lay in the valley, and four inches at an altitude of 600 ft. on Poway grade. Showers have continued until the present writing—Saturday A. M.—at which time the clouds are clearing away, with prospect of pleasant weather. Our rain guage marked 3.84 rain, but probably full 4 inches has fallen, as the gauge was once running over when measurement was taken. It came slowly enough to be all taken up by the ground, except on steep hillsides, and assures us against the drouth which was so much apprehended. The appearance of snow in this locality is an event of which we have no record, and we are waiting to hear from "the oldest inhabitant."—O. S. CHAPIN, Poway, Jan. 14th.

SAN JOAQUIN.

WEST SIDE OUTLOOK.—*Independent*, Jan. 12: Farmers on the west side are becoming very despondent and apprehensive of the future of this season's crop of grain. High winds have prevailed for several days, and in places the ground is too hard to admit of plowing. The large majority of the area to be seeded has been plowed, though a few teams are still at work. The grain has secured a good start, and is not yet suffering for want of moisture, but if rain does not follow the wind immediately, the growth of the young crop will be seriously retarded. No more land will be seeded until the prospects warrant. The drying out of the land by the high winds has been so rapid that the roadway, which was quite muddy last week, is swept by clouds of dust.

SONOMA.

HORSE SALES.—Petaluma *Courier:* On Thursday last, an agent for the Southern Pacific Railroad came to Petaluma to buy horses for their work in Arizona. He wanted 50 of the best work horses to be had, but doubted whether os not he could get them all here. He bought a few Thursday afternoon. On Friday he ran hir purchases up to 51 head. He paid for several spans $500, and the entire lot averaged $200 each. The whole amount paid for these horses amounted to a little over $10,000. The horses were shipped on Saturday, and was the finest lot that ever left Sonoma county in one band. On Friday the report got circulated through the country that there was a demand for good horses in town, and before 10 o'clock on Saturday there were over 100 fine, large horses brought in for sale. The agent, however, had got all he wanted, but expressed great surprise at finding so many first-class work horses about Petaluma. In addition to the above sales, Ben. Cox, of this city, bought of Mr. Clark, of Bodega, three fine work horses, for which he paid $750; and Geo. Charles bought a Norman stallion for his ranch in Humboldt county. He is a dapple gray, large, well shaped and active. The price paid was about $3,000. Petaluma is no one-horse town. We have lots of them, and they are of the very best.

JANUARY FRUITS.—Healdsburg *Flag*, Jan. 12: John Cook, living near Magnolia farm, 1½ miles from this town, has presented us with a few pears from his orchard, which shows what nature sometimes does in Russian river valley. These pears are nearly as rosy-cheeked as the noted Flemish Beauty, large, juicy, tender and just ripe enough to please the palate. The trees that bore this fruit, produced a full crop early in the season; after this crop was picked, in October, the trees again blossomed, the pears ripening this week. It is not unusual for cherries and apples to bear a second crop of small, defective fruit; but in the present instance, the pears are even larger than the usual size, and the crop nearly up to the average. Mr. Cook also raised a second crop of apples this season. We are indebted to Mrs. William Blackman, of North Healdsburg, for a quantity of grapes of the Flame Tokay variety. They are large, plump and luscious, not being withered in the least. Mrs. Blackman's method of keeping grapes fresh is merely to envelop the vines with paper when frost is apprehended; after several weeks of frost the bunches are plucked from the vines and hung up in a cool place in paper bags.

STANISLAUS.

NOTES.—Stockton *Independent*, Jan. 12: Geo. Perry, of Ceres, Stanislaus county, was in town yesterday. He reports the summer-fallow grain around that section as doing well at present. The land is very sandy, and has been wet down by the rains from 10 to 14 inches, but it is rapidly dying out. Until a few days since it was in good condition for plowing and seeding. Though the plows are still running, seeding has been stopped and will not be renewed unless more rain falls, and that soon. Mr. Perry's brother, with Mr. Hall, has seeded 900 acres, mostly winter-plowed. The present outlook is not encouraging, and they will seed no more unless a favorable change occurs in the weather.

TEHAMA.

VINE PLANTING.—Chico *Record:* Two carloads of grapevine cuttings passed through Chico last week to Vina, to be planted in Gov. Stanford's immense vineyard. One thousand acres of land are now being placed in a condition to receive the cuttings, which are mostly of the raisin variety. Gov. Stanford owns the Gerke ranch, and intends to turn the greater portion of it into a huge vineyard. The *Record* contained an item a few days ago concerning the large ditch being made on the ranch for the purpose of irrigating the vineyard. The ditch is to be 30 ft. wide at the top, and 15 at the bottom, and will be about 10 miles in length.

TULARE.

FARMING NOTES. — Stockton *Independent:* From J. G. Blair, well known in this locality, some interesting items regarding the present grain outlook in Tulare county were gathered. Mr. Blair's farming operations in that county are 15 miles southeast from Visalia, where he farms 320 acres. He has plowed none yet, but intends to summer-fallow the land, when it shall have been put in condition by the expected rains. The summer-fallow grain in that section looks well yet, but the winter-sown has not yet sprouted, owing to want of moisture. Mr. Blair says more land has been seeded in that county this season than in any previous year, but only the summer-fallow grain gives promise of any crop at present. John Jones, of this county, who owns a large ranch in that valley, near the foothills, is running 14 large teams, plowing and seeding, and will continue the work for a week yet. The land in that portion of the county does not require so much rainfall to perfect a crop as is required here or in many other parts of the valley, and moderate rains soon, with spring showers, will make a crop. There is no green feed to speak of, and but little old or dry feed. The weather during the week has been extremely cold, water freezing in the dwellings. Outside creek was frozen over, the ice being of sufficient thickness to permit of yearling cattle crossing on it in safety. Improvements are going on throughout the county, notwithstanding the present dull outlook for the coming harvest.

VENTURA.

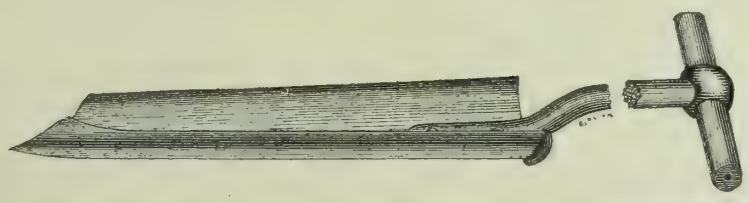
EDITORS PRESS:—The past six days have been the most windy, cold and disagreeable weather of the season. On Thursday morning, Jan. 12th, the hills around Nordhoff and Cliff Glen were white with snow, but the cold cutting wind, which came from the south and east in almost a gale, swept it all away before noon. More than half of the wheat land in this county has been plowed and sowed, and the farmers are now waiting for the needed rain to bring it up. Some of the early sown grain still looks green and growing, but all the grain and pasture is in need of rain. Some of the farmers have their grain all in, and are now plowing for corn and beans. The majority are still sanguine of raising fair crops in 1882. Stock men and especially sheep owners, have already begun to experience losses in their flocks and herds. About 16,000 sheep have passed up the Matilija canyon during the last two weeks. About one-half of them were fat weathers, and among that class of sheep there is little or no loss; but the stock sheep, ewes and lambs, which were in the mountains during this cold blustering weather, are reported to be dying by hundreds. The first large flocks of sheep denuded the little valleys of the Matilija of everything in the shape of forage, and the last droves were compelled to travel days without anything for the poor sheep to eat. It was painful to hear the piteous bleating of poor starving sheep, left by the roadside to die alone, after they became to feeble to farther follow the great drove. And truly, we think, of all the general business and callings carried on in California, that of the landless sheep raiser is the most heartless, cruel and detestable. They own thousands of sheep without owning an acre of land, or so much as one rod of pasture on which to graze them. They shear their sheep twice a year, as long as there are good seasons, and plenty of wild pasture to be had for nothing. Then when a dry year comes, as it does every five or six years, they let the poor creatures starve to death, because they say it would cost more to buy pasture or food for them than it would cost to buy other sheep to replace them. There may be money in such a business, but there is neither heart or conscience in it. The present outlook is drear and dry, but there is yet an abundance of time for rain, and we will hope for the best. However, there is one thing to be grateful for. The last three years were favorable for crops in southern California, and farmers are generally well fixed and clear of debt. Therefore, they can stand a blank now much better than they could in 1877. Until this week, the winter has been mild and pleasant. At the present time many of my orange and lemon trees are in vigorous growth, throwing out new shoots and new leaves. Some of my lemon trees are in full bloom, and at the same time loaded with ripe and green fruit. My oranges are mostly ripe; we have been gathering ripe oranges since Christmas day. On Thursday morning, when the snow was all around us, the mercury stood at 34° at 7 A. M. (only 2° above freezing.) At present writing (8 P. M., Friday, Jan. 13), the temperature is 45°, and black, rainy-looking clouds are rising in the east. We feel rejoiced at the indications of rain. May we not be disappointed.—ROBT. LYON, Cliff Glen, Jan. 13, 1882.

THE OJAI SAW ANOTHER SIGHT.—*Free Press:* The curious gyratory wind-storm prevailing here for the past three days seems to have found its vortex in the Upper and Lower Ojai valleys on Thursday evening. At noon there the breeze began to increase, and by 5 P. M. had increased to a perfect tornado, demolishing almost everything in its path. Oak trees two ft. in diameter, which had withstood the storms of centuries, were overturned as though they were bulrushes, blocking the roads in all directions. Houses and barns were prostrated right and left, but fortunately we hear of no injury to life or limb.

Stanley's Vine-Setter.

We give herewith an engraving of a new device to facilitate vineyard planting. It is the Stanley patent vine-setter and hole-digger. Of late years such large tracts of land have been planted in vineyards, that wine growing is fast becoming one of the leading enterprises of this State. One unacquainted with setting out vines, does not appreciate the great expense and labor connected therewith. After the land is prepared by plowing and harrowing, then follows the most expensive and laborious part of the work; namely, laying out the ground so that the rows will be straight, and the vines equally distant from each other, and the digging of the holes and setting the vines. It is in this last part of the work that the greatest care is necessary. At the time of planting, in a great many cases, there is but little thought of the proper method in which it should be performed; but in after years the imperfect manner of digging the holes and setting the vines will be plainly visible. Certainly, the work that will serve for a lifetime if correctly done, is worth doing well. There is no question that heretofore the poor planting that has been done has not been altogether the fault of the person who performed the work.

It is impossible to do good work with poor tools. Thus far nothing has been used for the purpose of digging the holes but the primitive crowbar, the dibble and the auger, all of which are wholly inadequate for that purpose. Vines set in holes made by the crowbar and the dibble cannot be tamped so as to make the earth as compact around all parts of the vine as should be, hence, when the dry season begins, if the vines have not a good start, they must necessarily die. The above tools being tapered to a point, and there being no show to make the earth solid at the bottom, an air-chamber is formed, thus leaving the bottom of the vine with no earth in contact with it—a place where it is so much needed. When the auger and spade are used, more earth is removed than is necessary, and it is such a slow way of doing the work that they are seldom resorted to. But those who have used it, assure us that by the use of the Stanley patent vine-setter and hole-digger all of the above objections are overcome. It is only necessary to see one at work to be convinced of its excellence. The rapidity that holes can be dug by this tool is almost incredible. By its use one man can dig from 800 to 1,500 holes per day, according to the nature of the soil. It will work in any kind of soil. It is operated by forcing the blade into the ground with the foot, and then turning it around. There being a lip on the blade, when the tool is withdrawn, it removes the soil with it, leaving a hole about three inches in diameter, and the desired depth, leaving the ground thoroughly loosened at the bottom, with plenty of room for the composite or fertilizer, that is almost indispensible in some kinds of soil. It is claimed for the Stanley patent that it will work in soil where a plow cannot be used; also, that holes can be dug with this tool suitable for bent cuttings, and in each case there is plenty of room left to tamp the cuttings air-tight without injury to the buds. The usefulness of the above patent does not end with the wine grower, but it is alike valuable to the gardener and the nurseryman. The blades are manufactured from the best saw steel, and the handles are of tubular iron. The device is secured by letters of patent.



THE STANLEY PATENT VINE-SETTER AND HOLE-DIGGER.

The Stanley vine-setter is being extensively used in the large vineyards now being planted around Mission San Jose, Alameda county. Further particulars about the invention may be found in the advertisement in another column.

A NEW SOURCE FOR GLUCOSE.—A company has been formed in Philadelphia to manufacture glucose from cassava, the plant from which tapioca is derived. Taking the average yield of corn—from which glucose is now made—at 35 bushels to the acre, the glucose product is only about 1,000 lbs. to the acre, while the average product from cassava, which yields 10 tons to the acre, would give a return of more than 5 tons of glucose. It is said that sometimes fully 20 tons of cassava is obtained from an acre of ground in Florida, which would double the above named yield, or give the large amount of 10 tons to the acre.

News in Brief.

SILVER ore has been found near San Luis Rey, San Diego county.

EMPEROR WILLIAM is anxious for Germany to participate in Arctic exploration.

MR. LORING, Commissioner of Agriculture intends visiting California in the early spring.

SMALLPOX is very prevalent among the colored population of Virginia and the Carolinas.

A BILL has been introduced in the House for the admission of Washington Territory as a State.

THE Cremation Society of New York has secured half of the $25,000 required to erect a furnace.

IN the first of the three matches between Dr. Carver and Bingham, the former killed 126 and the latter 123.

ONE hundred and fifty years ago London was famous for her roses, but to-day no rose will grow there. Cause, smoke.

IT is safe to say that the outward and inward tonnage of Puget sound for the year 1881 aggregated about 1,000,000 tons.

IT is stated that the De Lesseps Canal Co.'s second call of 25%, amounting to $15,000,000, has been paid in full at Paris.

A CHICO fruit-raiser has just leased 12 acres of orchard to Chinese for five years at a yearly rental of $800, or $66⅔ per acre.

ON Puget sound there are 42 steamers with an aggregate tonnage of 4,850 tons. These are all engaged in the Puget sound trade.

THE Mexican National railway has been completed across Tamaulipas, and is being laid at the rate of a mile a day in Nuevo Leon.

THE taxable property of Oregon, as per assessment just completed, is $59,256,175; total tax, $325,908. Multnomah county bears one-fourth of the tax.

MAJOR CATHCART, one of the principal members of Gen. Fremont's expedition, which, in 1848, made a winter journey across the plains to California, is dead.

DR. DRAPER'S death elicits fresh recognition in England of his works, which are among the most enduring and admired American contributions to the literature of science.

A MARSEILLES correspondent mentions that intense cold weather prevails on the Sahara frontier, and hundreds of camels and many soldiers have died from the cold.

A SURVEYING party, with a complete outfit, under the charge of the Atlantic and Pacific railroad, left Los Angeles last Sunday to run a new experimental line on the Mohave desert.

THE contempt proceedings in the Marysville courts against the Bloomfield and other mining companies, have been continued until February 6th. This is the fourth continuance of the proceedings.

THE next sailings of the Pacific Mail Steamship Co.'s steamers will be: *City of Peking*, for Yokohama and Hongkong, Feb. 11; *Australia*, Feb. 11, for Sydney and Auckland; for New York, via Panama, Feb. 4.

GOVERNOR SAFFORD is withdrawing his interests in Arizona Territory for the purpose of devoting himself entirely to the great Florida land reclamation scheme, in which he is largely interested.

THE exceedingly cold weather for the last few days has frozen ditches and flumes in Nevada county until mining has been somewhat suspended, owing to the water supply being choked off.

LAST Thursday of last week snow fell so deep in the San Gorgonio pass, on the border of the Colorado dessert, as to seriously hinder the trains of the Southern Pacific railroad, a circumstance never known before.

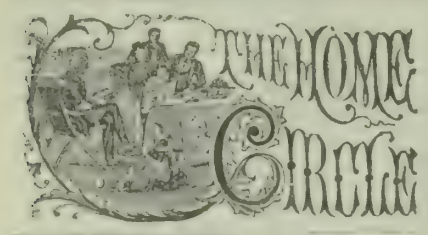
THE California Iron Company has recently purchased 4,600 acres of timber and mineral lands. The company now owns 7,620 acres near Hotaling. Clipper Gap made a successful run last year, producing 4,414 tons, and now takes its place as one of the permanent industries of the State, and is in strong hands.

A MINER named Scoot has arrived in Tombstone, A. T., from the Sierra Madre mountains of Mexico, where he has been living for the past seven months. He states that the Apaches are on the warpath in that region, and that himself and two companions barely escaped with their lives. They had a running fight with 35 Apaches.

TURNER has introduced in the House a joint resolution providing that Congress shall have no power to pass any act or resolution for the appropriation of any money or creation of any debt exceeding $10,000 at any one time, unless the same, on its final passage, shall be voted for by a majority of all members then elected to each branch, and the ayes and noes entered on the journal.

THE Supt. of the Senate folding room says he now has on hand, belonging to Senators, at least 500,000 volumes that have been printed by order of Congress for distribution. Some Senators and Representatives are very indifferent about sending out documents, while others not only send all they are entitled to, but get from other members all they can and send them to their constituents.

DEPREDATIONS upon the Government timber lands in the West have increased to such an extent that the Secretary of the Interior urges the Attorney-General to use all the means in his power to arrest and punish offenders. While they are about it, the idea would be a good one to arrest and punish offenders who commit depredations on Government funds in the East. That would make work at both ends of the line.



Make Your House a Poem.

[Written for the RURAL PRESS, by E. E.

Make your house a poem
Fitting and complete,
That your life may run in
Metre pure and sweet.
Court the willing sunshine,
Let its golden rays
Illuminate and gladden
All your household ways.

Let your house be cleanly
Ceiling unto sill:
Poverty may tread there,
But be cleanly still.
Adorn it here and there
With a plant or vine,
Just as poet's figures
In their verses twine.

Brighten it with color:
Woman's tasteful hand
Maketh grace and beauty
Blossom at command.
Ferns and woodland mosses,
Pebbles or a shell,
Take from lonely moments
Many a weary spell.

Fill your house with gladness,
Flowing through the days,
Like the inspiration
Of a song of praise.
Give each room a duty,
Every work a time,
That the hours may flow in
Melody and rhyme.

Make your house the haven
Of a peaceful soul;
Bringing storm-tossed fancies
To an anchored whole.
And your life's whole purpose,
Count its verses true,
Lest the palm of heaven
Be denied to you.

The Mountain.

Through time's dim vista looking down,
Perhaps frowning o'er some ancient sea,
Dark clouds then resting on thy crown,
And all around thee mystery.
Thou watchest the fiery craters flow,
And mountains heaving at their birth,
Amid the molten lava's glow;
Before mankind had touched the earth.

Still towering upward into space
A landmark when the morning breaks,
Yet men are delving at thy base,
And heeding not thy darksome peaks.
Time fades; yet ever rolling on
Men come and go and gaze on thee.
Like fleeting shadows they are gone,
But thou art for eternity.

—"*Sierra Butte*," in *Methodist Messenger*.

The Piece that was Lost.

There was promise of a capital hay day; so Silas Rogers decided as he stood in the back porch after milking, polishing his face with a coarse towel and noting the weather signs between the rubs.

A capital hay day; but a "spell of weather" might be expected soon; for did not the almanac say "About this time look out for storms!"

So all hands were warned to be in readiness to mow the lower intervale in the morning, and lose no time in getting at it, for the lower intervale was swampy after a rain.

The chores were done, the supper eaten; Silas, with his chair tilted against the wall, was sleeping the sleep of the just, while his good wife pattered about the kitchen setting her sponge, beating up some "riz" griddle cakes for breakfast, grinding the coffee, and, in a dozen provident ways, squeezing out of the tired day a little help for the morrow.

Reuben went to the store for a new scythe snath; Abner, the hired man, hung over the barnyard gate with the beloved pipe that tried the housewife's soul, and pretty Mistress Hetty wrinkled her forehead and pricked her fingers over the new dress she was trying to make in the few leisure minutes snatched from housework. She made a charming picture in the frame of the vine-wreathed window, her sleeves still rolled above her plump elbows, the bright hair drawn back from the rosy face which was turned full to the lamp as she threaded her needle, or paused to flirt some deluded moth away from the dangerous flame that fascinated him.

A charming picture, but no one to look at it; for the great Norway pine held up a screen of solid blackness between the window and the road, even if any belated traveler had chanced to walk that way, and only Hetty's white cat crept stealthily along the top of the garden fence with murderous designs upon an untimely brood of chirping birds in the currant bushes. Only this—ah, beware, Mistress Hetty! Evil eyes are looking at you; eyes from which a heathen mother would cover your face with her hands, and breathe a prayer to break the unholy spell they might cast upon you—a woman's eyes peering from a thick jungle of lilacs and syringas, so near it seems as if Hetty must feel them. But Hetty feels nothing, sees nothing but the troublesome dress; and, as the perplexing ruffles are conquered one by one, her heart grows light, the little frown smooths away and Hetty begins to sing. What a sweet voice she has! It reaches the tired mother and lightens her heart, too. It wakes her father, and then lulls him pleasantly to sleep again. Now Abner hears it, and draws his hickory shirtsleeve across his eyes, and that watcher in the green tangle—who can guess what she thinks or feels as she sinks down with her chin upon her hands, and her face quite in the dark, and listens to the pathetic story of "The Ninety and Nine?" Hetty herself is not half conscious of the pathos with which she bewails the lost one,

"Away on the mountains bleak and bare,
Away from the tender Shepherd's care."

and goes on through the tender story to the final rejoicing when the Shepherd brings back his own. She is still humming it fitfully over and over when her mother opens the door of the keeping room and bids her go to bed and not ruin her eyes with sewing by lamplight.

"Just a minute," says Hetty; "as soon as I finish this sleeve."

And the minutes glide on and on, the sleeve is finished, held up and admired, and Mistress Hetty takes off her shoes and slips softly up stairs to bed. She does not even close the window. What should come into the house unbidden, save the cat and the cool night air? Everything is silent. The mother bird broods her little ones securely, unconscious of the cruel eyes near by, until Reuben comes whistling along the road and, boy like, stops to shy a stone at the tempting white mark on the garden fence. The prowler leaps away with long bounds over the wet grass, and a tragedy is averted with nothing to show for it but dirty tracks upon the piece of "factory" spread out to bleach.

By and by there is a little stir in the lilac jungle; a woman comes cautiously out of her hiding place and steals away to the barn.

The cows are lying here and there under the long shed, sleeping, perhaps, in a cow's uneasy fashion, but with a certain air of motherliness and content about them. They do not even wonder at the later comer as she threads her way among them, enters the barn, mounts the scaffold already well filled with the sweet new hay, and is soon asleep, hearing now and then a broken twitter from the restless swallows under the eaves, or perchance a faint, sweet voice singing, with lingering pity in its tone,

"Sick and wounded, and ready to die."

Who can tell when the summer day begins? One instant a dusky silence, cool, moist and fragrant, hanging over the hill, the next, a burst of song from some tree-top, caught up from a hundred green coverts, swelled and repeated and prolonged in mad chorus that presently settles again into silence. Then the slow stir of life awakening, the bustle among the poultry, the lowing of some impatient cow, or the sound of her companions nipping the short juicy grass, the unwilling creak of a rheumatic pump handle, and here and there the dull thud of an improvident ax preparing the kindlings for the kitchen fire.

The day was well under way in Silas Rogers' household before a majority of his neighbors had reached this point. The cows were milked and turned into the green lane to make their own way to the pasture, the steady whirl of the grindstone, and the sharp ring of steel, told that the moments before breakfast were being made the most of, and even at the table there were few words spoken, and no useless lingering. But after breakfast Silas Rogers took down the leather-covered Bible that had been his old mother's daily companion for 80 years, and all the family sat reverently down to worship.

The golden moments might speed as they would, but no day in that household began without its portion from the Bible. It might have been a lingering recollection of Hetty's song, it might have been one of those celestial providences which we call chance, which led him to read from the gospels the story of the wandering sheep and the lost piece of silver. It is doubtful if any of them were very deeply touched by it. It was a familiar story to the good wife, and she could not keep her thoughts from straying anxiously to the loaves rising perilously in the pans, while Hetty glanced at the clock and secretly hoped her father had not chanced upon a long chapter. The reading came abruptly to an end with the heavenly rejoicing over one sinner that repenteth, and with an earnest though homely prayer, the service was ended.

Abner and Reuben almost stumbled over a woman sitting absorbed in the doorway. Silas looked at her but did not stay to question, and when they were gone she rose and said abruptly, "Will you give me some breakfast?"

Mrs. Rogers looked at her. She was a tall and not uncomely woman of about 30, but with something indefinably evil about her face. The hard mouth, the bold, defiant eyes repelled her, yet seemed as if at any instant they might break into scornful tears.

"Who are you?" asked the good wife, coming nearer with the pan of bread in her hand. Again the face lightened, grew hard, and then yielded with the sudden declaration:

"I am the piece that was lost."

Martha Rogers had not a particle of poetry in her nature, but she had the most profound reverence for the scripture, therefore the words both puzzled and shocked her. But she was a woman not to refuse bread to the hungry, so she placed food upon the table, and motioned the woman to a chair, with a brief "Set up and eat."

All the time that the woman was eating, and she did not hasten, her eyes followed the mistress and Hetty, until Martha Rogers grew nervous and sent Hetty to "right up the chambers."

As soon as she was gone, the woman turned abruptly from her breakfast.

"Will you give me work to do?" she demanded, rather than asked.

"Who are you?" asked Mrs. Rogers again, simply to gain time.

"I thought you knew. I am Moll Pritchett; they have turned me out of my house; burned it over my head," and the eyes grew lurid with evil.

"What can you do?" asked Mrs. Rogers, feebly.

"Anything that a woman can do, or a man. I can work in the field with the best of them; I have done it many a time; but I should like to do what—to be like other women."

"Are you a good woman?"

The question came straight and strong, without any faltering. She had heard of this Moll Pritchett, a woman who lived alone in an old tumble-down hut below the saw-mill, and won a meager living by weaving rag carpets, picking berries for sale, and it was suspected in less reputable ways, but Martha Rogers took no stock in idle rumors. If she had not divine compassion, she had something very like divine justice, which is altogether a sweeter thing in its remembering of our frame than the tender mercies of the wicked.

The woman looked at her curiously. At first with a mocking smile, then with a sullen, and at last with a defiant expression.

"Is it likely?" she said fiercely. "A good woman? How should I be a good woman? I tell you I'm 'the piece that was lost,' and nobody ever looked for me. If I was a good woman, do you suppose I should be where I be—only 28 years old, well and hearty, and every door in the world shut in my face? I tell ye the man that wrote that story didn't know women; they don't hunt for the piece that is lost; they just let it go. There's enough on 'em that don't get lost."

Poor Martha Rogers was sorely perplexed, all the more that her way had lain so smooth and plain before her that she might have walked in it blindfolded. If this was a lost piece of silver it was not she who lost it; but what if it were the Master's, precious to his heart, and a careless hand had dropped it, and left it to lie in the dust? And what if he bade her seek it, and find it for him? Should she dare to refuse? On this very day, when she needed so sorely the help which she had looked for in vain, had not this woman been sent to her very door, and was it not a plain leading of Providence? It is a blessed thing for us that we are usually driven to act first and theorize afterward, even though the afterthought sometimes brings repentance. The bread was ready for the oven and the woodbox was empty.

"You may fetch in some wood," said Martha Rogers; and the woman promptly obeyed, filling the box with one load of her sinewy arms, and then stood humbly waiting. Hetty came into the room and began to clear the table, but her mother took the dishes from her hands.

"Go up stairs and fetch a big apron and one of your sweeping caps, and then you may get at your sewing and see if you can finish up your dress."

Away went Hetty, her light heart bounding with unexpected release, and her mother turned to the woman, furnished her with a coarse towel and sent her to the wash-house for a thorough purification. Half an hour afterward, with her hair hidden in the muslin cap, her whole figure enveloped in the clean calico apron, a comely woman was silently engaged in the household tasks, doing her work with such rapid skill that the critical housewife drew a sigh of relief.

"There's a han'ful of towels and coarse clothes left from the ironing; you might put the iron on, Mary, and smooth 'em out."

The woman turned a startled face upon her, and then went quickly for the clothes, but something—was it a tear?—rolled down the swarthy cheek, and mingled with the bright drops she sprinkled over them. When had she ever been called Mary? When had she heard any name but Moll? Not since away among the hills of New Hampshire a pale woman had laid her hand upon the tangled curls of her little daughter and prayed that from the strange world to which she was speeding, she might be allowed to watch over these wayward feet, lest they should go astray. Had she watched? Did she know? Moll hoped not; it made her shudder to think of it. What would heaven be worth if she could see and know? And yet, what did she hear about joy in heaven over one sinner that repenteth? If there was, it must be that they knew; or perhaps only good news was carried there.

That night Hetty sang again at her sewing by the lamp, and from the attic window far above her head, the wanderer leaned out into the dark to listen. The little chamber was bare of ornament; there was not a picture on the cleanly whitewashed walls, and the straight curtain was for decency, not drapery; but it seemed to this one a very chamber of peace. The great Norway pine almost brushed her cheek with its resinous plumes, balmy with moist night air, and a bird, hidden somewhere among its branches, sent out a startled, half-awake cry, and then dropped off to sleep again. There was a pale young moon low in the western sky, with black clouds scudding across it, and the dull, steady sound of the river pouring over the great dam in the valley, seemed to come nearer and nearer, like the tramp of feet. Martha Rogers went out to the milk-room, and stood for a moment in the door, shading the flickering candle in her hand. She was only taking a housewifely observation upon the gathering storm; but it seemed to the wanderer that she might well be the woman who had lighted a candle to search for the lost piece of silver, and with a dim comprehension of love on earth and joy in heaven, she tried to pray, and fell asleep.

Silas Rogers listened to the day's story as he sat mending a bit of harness with clumsy fingers. He may be forgiven if his thoughts sometimes wandered to the hay so fortunately secured from the storm, or ran over the grist to be sent to the mill in the morning if it proved a wet day, or speculated curiously on the superhuman knowledge of almanac men; but on the whole, he was tolerably attentive, and certainly grasped the idea that his wife had secured a valuable and much needed helper.

"It seems a risk to run," said Martha, anxiously; "and I don't know but its presumptuous; there's Hetty, and there's Reuben—"

"And there's the Lord," said Silas, stopping to open his knife.

"Yes," said Martha, with a little start, "and I can't quite get rid of what she said about the piece that was lost; though to be sure, the woman that lost it ought to hunt for it."

"She never does; folks are always losing things for somebody else to find; 'tain't many of 'em can say, 'those that thou hast given me have I kept,' right straight along."

"But if you lose your own piece looking after other folks—"

Silas cut off his waxed end and gave the harness an experimental pull before he answered. "Well, there's risks, as you say, but I'd rather take a risk for the Lord than agin Him."

Martha Rogers took the risk for the Lord, and he abundantly justified and rewarded her faith. For the piece that was lost becomes peace to the heart that finds it and lays it again in the Master's hand; and locking the story of the wanderer in her own breast, it was only to the angels that she said, "rejoice with me."

And when, years afterward, the woman herself said, before the committee of the church, "I am a woman over whom there is great joy in heaven," there were not wanting those who thought she was presumptuously claiming to be a saint.

Death of the Old Wife.

She had lain all day in a stupor, breathing with heavily labored breath, but as the sun sank to rest in the far-off western sky and the red glow on the wall of the room faded into dense shadows, she awoke and called feebly to her aged partner who was sitting motionless by the bedside; he bent over his dying wife and took her wan, wrinkled hand in his.

"Is it night?" she asked in tremulous tones, looking at him with eyes that saw not.

"Yes," he answered softly. "It is growing dark."

"Where are the children?" she queried; "are they all in?"

Poor old man! how could he answer her?—the children who had slept for long years in the old churchyard—who had outlived childhood and borne the heat and burden of the day, and growing old, had laid down the cross and gone to wear the crown, before the old father and mother had finished their sojourn.

"The children are safe," answered the old man, tremulously; "don't think of them Janet, think of yourself; does the way seem dark?"

"My trust is in Thee; let me never be confounded. What does it matter if the way is dark?

"I'd rather walk with God in the dark, than walk alone in the light.

"I'd rather walk with Him by faith than walk alone by sight.

"John, where's little Charlie?" she asked. Her mind was again in the past. The grave dust of 20 years had lain on Charlie's golden hair, but the mother had never forgotten him! The old man patted her cold hands, hands that labored so hard that they were seamed and wrinkled and calloused with years of toil, and the wedding ring was worn to a mere thread of gold—and then he pressed his thin lips to them and cried. She had encouraged and strengthened him in every trial of life. Why, what a woman she had been! What a worker! What a leader in Israel! Always with the gift of prayer or service. They had stood at many a death-bed together—closed the eyes of loved ones, and then sat down with the Bible between them to read the promises. Now she was about to cross the dark river alone.

And it was strange and sad to the old man, and the yellow-haired granddaughter left them, to hear her babble of walks in the woods, of gathering May flowers and strolling with John, of petty household cares that she had always put down with a strong resolute hand; of wedding feasts and death-bed triumphs; and when, at midnight, she heard the bridegroom's voice, and the old man bending over her, cried pitifully, and the young granddaughter kissed her pale brow, there was a solemn joy in her voice as she spoke the name of her children one by one, as if she saw them with immortal eyes, and with one glad smile put on immortality. They led the old man sobbing away, and when he saw her again the glad morning sun was shining, the air jubilant with the song of birds, and she lay asleep on the couch under the north window where he had seen her so often lie down to rest while waiting for the Sabbath bell. And

she wore the same best black silk, and the string of gold beads about her thin neck, and the folds of white tulle. Only now the brooch with his miniature was wanting, and in its place was a white rose and a spray of cedar—she had loved cedar—she had loved to sing over her work:

"Oh, may I in His courts be seen,
Like a young cedar fresh and green"

But what strange transformation was there! The wrinkles were gone. The traces of age, and pain, and weariness were all smoothed out; the face had grown strangely young, and a placid smile was laid on the pale lips. The old man was awed by this likeness to the bride of his youth. He kissed the unresponsive lips and said softly:

"You've found Heaven first, Janet, but you'll come for me soon! It's our first parting in more than 70 years, but it won't be for long—it won't be for long!"

And it was not. The winter snows have not fallen, and there is another grave, and to-day would have been their diamond wedding! We had planned much for it, and I wonder—I wonder—but no! Where they are there is neither marriage nor giving in marriage.—*Detroit Free Press.*

Chaff.

"MADEMOISELLE," said a witty and gallant septuagenarian the other day, making his demand for the hand of a young lady still in her 'teens: "I am 70 and you are 17. Will you do me the honor of becoming my widow?"

A YOUNG man proposed for the hand of a beautiful girl. As she hesitated about replying, he said: "I await your answer with bated breath." The girl, who is a good deal of a humorist, said: "Well, Mr. Man, you will have to bait your breath with something besides high wines and Limburgher cheese to catch your humble servant. Good evening."

A YOUNG lady who graduated from a high school last July is teaching school up in New Hampshire. A bashful young gentleman visited the school the other day, and was asked by the teacher to say a few words to the pupils. This was his speech: "Scholars, I hope you will always love your school and your teacher as much as I do." Tableau—giggling boys and girls and a blushing school ma'am.

"WHAT did you do with that letter that was on my table?" asked Gus De Smith of the colored boy who cleans up his room. "I tuck it to the postoffice, sah, and put it the hole." "What did you do that for? Did you not see there was no address on the envelope?" "I saw dar was no writin' on de 'velope, but I 'lowed yer did dat ar on purpose, so I couldn't tell who ye was a writin' to. I'se an edicated negro, I is."

LIFE IS HARD IN GERMANY.—Hard alike to learned and simple, to those who labor in the fields or pent up in cities; but there are consolations. All who live among German folks must be struck by the manly dignity and resignation with which these daily problems are met. Proudest perhaps of all European nations, they bear their burdens uncomplainingly, and set an example which at least two neighboring States might do well to imitate. However much they may be apt to exaggerate the professional authority and arrogate for book learning beyond what is its due, they certainly exemplify in their lives a respect for things worthy of respect and a contempt for mere material advantage. Germans love a pedigree, and are not insensible to a noble name. But before all things they consider the man the intellectual being, and if he is merely a possessor of wealth—a gold sack as they call it—then it is little consideration he will receive at their hands.—*Pall Mall Gazette.*

FOR THE PRESERVATION OF BELTS.—*Wood and Iron* gives its readers a recipe for the preservation of belts: Resin oil and 10% of mica. Resin oil will make a belt grip for a little while, and then put a glaze on it, making it necessary for another dose of oil, etc. If it is a leather belt, resin oil will make it stiff and harsh, and cause it to slip and crack. Resin oil is not a "grease," as stated by *Wood and Iron.* It is more of a varnish. It is used to make cheap grades of printers' ink; being ground up with lamp-black in roller mills. Mica is recommended as a lubricant for heavy journals, and has no place on a belt. *Wood and Iron* says that a belt coated with resin oil and mica is not affected by "corrosion," whatever that is. Our Eastern belts never "corrode." Boilers sometimes do. We have known belts to *rot*, but never to "corrode."—*United States Miller.*

THE PENETRATING POWER OF LIGHT IN WATER.—The limiting depth to which light penetrates in water was some time ago stated to be 40 meters for Lake Leman, by Prof. Forel, who used albumenized paper in his experiments. M. Asper has recently made similar experiments on the Lake of Zurich by a slightly different method. He used the photographic plates called *emulsion plates* (more sensitive than albumenized paper), and immersed them during the night of August 3d, to depths of 40, 50, 60, 70, 80 and 90 meters. They were brought up after remaining 24 hours in the water, and treated with oxalate of iron. All the plates, without exception, were distinctly affected by the light. Thus the chemical rays penetrate in clear water to at least 90 meters deep.

YOUNG FOLKS' COLUMN.

Science Club.—No 1.

Introduction.

Our children say, "this is my own, my native land!" In wonder they linger over the beauties of their indigenous flora and the varied soil from which it springs, wishing to learn something more of their names and uses. So we open this corner to the pen, pencil, plant, mineral and shell contributions of all the boys and girls on the Pacific coast, and larger people, if they wish; for the more makes the merrier.

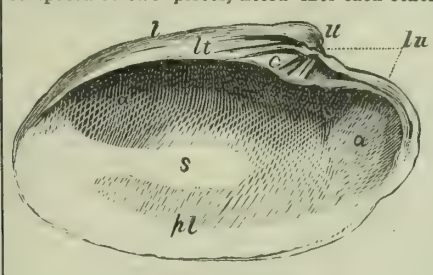
We ask you to send papers filled with leaves and flowers; small boxes of shells, rocks and fossils, all numbered and duplicated. We will submit them to some able specialists of botany and mineralogy, and report by letter, or by this paper.

In this number we will write about our

Shells.

The lakes and rivers abound in shells, which are often accounted more choice by collectors, than those of the ocean. In fact, that little shell, termed the snail or Helix, is on account of the rarity of certain species most eagerly sought. What would you think of two collectors searching for three days, near the Marine hospital, in San Francisco, and only finding three to reward their toil.

There are two great classes of shells, the bivalve and univalve. We will here speak of the bivalve. Taking it in our hands we notice it is composed of two pieces, fitted into each other



Bivalve Shell.

at the top and locked together by means of small projections, called teeth. The valves open and shut during the life of the clam, mussel or oyster, here represented, simply by a backward or forward movement, like the swinging af a door, hence the line of teeth is termed the hinge line. Above the hinge on the outside of the shell is found a dark elastic substance, called the ligament. Each valve is raised and rounded somewhat into a beak, and these beaks are known as the *umbones* of the shell. The hinge line is called the *dorsal* side; the open side, the *ventral.* The beaks or umbones mark the starting points in the growth of the shell, and many concentric lines are generally plainly marked on the outside of bivalves, denoting its many stages of growth. The inside of the shell is everywhere covered with a thin, but very beautiful layer of pearl.

This layer is very smooth, with the exception of two or three places, which look like scars. One scar is termed the *anterior adductor impression;* the other, the *posterior adductor impression.* They represent the position of strong muscles used by the animal in closing its shell. Between these two impressions, or scars, is a wavy line parallel to the lower margin of the shell, called the pallial line. The teeth in the hinge line are of two kinds—the short, which are near the back, and long, which run the whole length of the ligament. The short ones are *cardinal* teeth, and the long ones *lateral.* In some shells we have a *pedal muscular impression,* because muscles are attached to them, moving the foot of the animal. A peculiar heart-shaped depression found on some univalves, beneath and in front of the umbones, is called the *lunule.*

In the illustration of a bivalve, in this column, *u* is the umbo; *lu*, lunule; *a'*, *a*, adductor muscular impressions; *p*, pallial line; *p*, *s*, pallial sinus; *l*, *t*, lateral tooth; *c*, cardinal teeth; *l*, ligament.

In our next we will study the univalve shell.

Miss Ora Dibble, Berkeley, Cal., wishes to exchange *named* Californian sea-shells for minerals and beetles.

All letters, specimens, etc., must be addressed "RURAL PRESS Science Club," Berkeley, Cal.

PUZZLES.—One of our young readers, who signs himself "Good Templar," sends us some puzzles, but sends no answers. We cannot do anything with puzzles unless the answers are sent, so that we can judge whether it is a fair puzzle or not.

"MAMMA, do you know how I get into bed so quickly?" "No, my darling. How do you?" "Why, I put one foot on the bed, and then holler 'Rats!' and scare myself right in."

A QUAKER'S advice to his son on his wedding day: "When thee went a-courting, I told thee to keep thy eyes wide open. Now that thee is married, I tell thee to keep them half shut."

GOOD HEALTH.

How Our Busy Young Men Destroy Their Health.

There was an inquest held the other day on the body of a city clerk which is instructive, in that it shows the madness of the railway speed at which too many live, and points to a new disease that completely baffles modern medical science. The disease, with its innumerable affiliated branches, is commonly and inaccurately known as "overwork." It should, with more direct truth, be called the nineteenth century malady of fuss and flutter, and the almost incurable fault of forgetting to live. Overwork does not, as a rule, kill any man; in fact, more men die from sheer idleness than from steady application; but what does kill men is the anxiety to get a good start and keep the lead, the nervous strain of pressing forward in the race of life, the extreme tension of the vital power caused by worry and increased by noise, locomotion, restlessness, harshness and the occasional cruelty of the world. This city clerk was simply an exhausted machine. Not yet in the prime of life, he paid the penalty of high-pressure at the early age of 36. He worked his brains and he worked his hands, he neglected sleep and nourishment as well, he was forever exhausting the system and never supplying the deficit, and at last, without any apparent warning, nature closed the account, and the career of the city clerk was over.—*Herald of Health.*

WARM BED CLOTHING FOR CHILDREN.—It is fully as important that children should be warmly clad at night as during the day. Nor is it sufficient that the bed-clothing should be warm. Indeed, we are apt to err in using too many blankets rather than too few. Then the restless child kicks off the cover, and from a warm perspiration becomes chilled through, and a severe cold is the consequence. Delicate children should sleep in flannel, while for more robust constitutions Canton flannel in the lighter grades is heavy enough. Night-drawers are to be preferred to night-gowns, and the legs of the drawers should be long enough to reach the feet. Indeed, the style which covers the foot also, like a stocking, is an excellent one for children who are restless sleepers. Night-gowns for babies should be long enough to come down well over the feet, and flannels should be worn in cold weather, the pinning blankets which are furnished with all layettes. In every household where there is a baby, there should be at least one open fire where its feet may be occasionally toasted. No one can sleep healthily when cold, and the baby will rest much better if laid to sleep upon a warm blanket than between cold sheets.

PRESCRIBING BY TELEPHONE.—A few evenings ago a physician of North Adams, Massachusetts, was called by telephone about one o'clock at night. The call came from Briggsville, about two miles away. A child was there suffering with the croup and in a critical condition. The night was dark and stormy, and the doctor found nothing pleasant in the contemplation of the trip which he was asked to make. When preparing to go out into the darkness and rain, his mind conceived a bright thought, which was immediately followed by acts. He called the Briggsville house in which the little sufferer lay, and requested the parents to bring it to the telephone transmitter. This was done. The child coughed its croupy cough, and the doctor listened intently to every sound which came from his patient. He prescribed a remedy, and one of the members of the family prepared and administered it. The relief was immediate and the recovery rapid. The doctor waited at the telephone until he heard of the favorable results of his prescription, and then sought again the repose of his couch, pronouncing blessings on the inventor of telephones.—*Hartford Post.*

A HARD STRUGGLE.—There are many men who kill themselves in their attempts to keep themselves alive. They work because they must eat. With their tasks come worry, overwork, death. In these days it is difficult to live—that is, for some men. They are handicapped in their struggle. A portion of society has become possessed of the wealth that should be in the hands of their fellows. A glance around forces home to one's mind with power the fact that the man who has knowledge of himself—who knows how to maintain health of body, mind and morals, possesses a great advantage over other men in the struggle for life.

TO MAKE A GOOD COLOGNE.—Take alcohol 95%, 1 quart; oil of cedrat, 9 drams; oil of thyme, 2 drams; oils of bergamot and lemon, 6 drams; oil of Portugal, 4 drams; oils of neroli, vervain and rosemary, 2 drams; oil of mint, 2½ drams; eau de melisse, 2 drams; tincture of musk, 24 drops. Mix, and after standing 24 hours, filter till clear.

REMOVAL OF STRONG ODORS.—It is said that ground mustard is an excellent agent for cleansing the hands after handling odorous substances, such as cod-liver oil, musk, valerianic acid and its salts. Scale pans and vessels of various kinds, may also be readily freed from odor by the same substance.

DOMESTIC ECONOMY.

STONGE PUDDING.—Rub six ounces of butter or beef dripping into a pound of dry flour, in which a level dessert-spoonful of ground ginger and six ounces of brown sugar have been mixed; dissolve two level teaspoonfuls of carbonate of soda in half a pint of milk, mixing it smooth and free from lumps before adding to the flour. Beat all together into a soft batter, and pour into a buttered basin. Allow the pudding plenty of room to swell in the cloth, which it does considerably; plunge into very fast boiling water and keep boiling two hours and a half. Turn it out, and serve with wine sauce; some prefer to eat it dry.

CANVAS-BACK DUCKS.—Select young, fat ducks; pick them nicely; singe and draw them carefully without washing them, so as to preserve the blood and consequently the full flavor of the bird; then truss it and place it on the spit before a brisk fire, or in a pan in a hot oven for at least fifteen or twenty minutes; then serve it hot with its own gravy, which is formed by its own blood and juices, on a hot dish. It may also be a little less cooked, and then carved and placed on a chafing-dish with red currant jelly, port wine and a little butter.

CIDER JELLY.—Soak two ounces of gelatine in a quart of cold water for an hour; then add to it a stick of cinnamon, broken into pieces, a blade of mace and a few cloves, also the juice of a lemon, the beaten white of an egg, one pound of white sugar and a quart and a pint of cider. Let it come slowly to a boil, and boil 15 minutes. Pass through a jelly bag into molds which you have rubbed with butter. You may put in only one quart of cider, and not boil it at all, but strain it after you have let it stand for half an hour in a warm room.

ALMOND CAKE.—One pound of sugar, half pound of flour, ten eggs, ounce of bitter almonds, a glass of kase water; beat the yolks till they are quite a batter, then add the sugar and beat it well; having previously pounded the almonds fine in the kase water, add them to the yolks; the whites must be beaten very light and then add the flour just stirred into the other ingredients. Bake an hour and ten minutes in rather a quick oven.

ALMOND JUMBLES.—Beat half a pound of butter to a cream, with half a pound of loaf sugar, pounded fine; mix with a pound of flour, and a quarter of a pound of almonds, blanched and shred fine, or beaten to a paste with the juice of a lemon; work it well together, roll it out, then cut it into small round cakes, and bake them in a quick oven.

CLEANING PAINT.—Frequent scrubbing with soap and water will invariably destroy the freshness and brilliancy of paint. Whiting will remove spots and clean paint much better than soap, and with no injury to the most delicate colors. Make a paste of whiting and hot water, rub it on well with a flannel cloth and rinse off with tepid water and a clean flannel.

COCOANUT CAKE.—Take the whites of eight eggs beaten to a stiff froth, one-half cup of butter stirred to a cream, half cup sugar, half cup sweet milk, two and a half cups sifted flour, teaspoonful cream of tartar, half a teaspoonful of soda. Make of this three flat cakes, bake on pie tins, and while warm, spread with icing, and grate on cocoanut between each cake.

CHOCOLATE CAKE.—Take the yolks of 10 eggs, and use just the same quantity of everything as you did for the cocoanut cake, grating the chocolate upon the icing between each cake. The whites of two eggs beaten till they will not slide from the plate, and enough pulverized white sugar to make it very thick, will make enough icing for one cake.

CIDER CAKE.—Rub to a cream a scant cupful of butter and two cupfuls of sugar; add to this one cupful of cider, three cupfuls of flour and four eggs, with two cupfuls of raisins and currants, mixed. The raisins you may buy seedless, but the currants must be rubbed in Indian meal to clean them.

GINGERBREAD.—Three cups of flour, one of sugar, one of butter, and one of molasses; three eggs beaten light, one tablespoonful of ginger, one teaspoonful of pearl-ash and some cloves. Beat the butter in sugar as for pound cake, then add the other ingredients, putting in the pearl-ash last. Bake them in cake tins.

SOFT GINGERBREAD.—Six cups of flour, two of sugar, two of butter, two of molasses, two of milk, four eggs, a tablespoonful of ginger and a little allspice; beat the butter, sugar and eggs light; then stir in the other ingredients. Add a teaspoonful of pearl-ash dissolved in vinegar.

ENGLISH BUNS.—One pound of flour, half pound of sugar, quarter pound butter, same of cinnamon, half pint of raisins; rub them all together and mix with milk and four or five drops of pearl-ash. Wash them after they are baked with sugar and water.

ROCK CAKE.—The whites of four eggs beaten very light, one pound of loaf sugar added to them, three-fourths of a pound of sweet almonds slightly bruised. Bake on paper in tins.

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TABLE OF CONTENTS.

GENERAL EDITORIALS.—Situation and Surroundings of Portland; Birds and Worms, 37. Stanley's Vine-Setter, 41. The Week; Removing the Barriers; Preparations for Drouth; National Agricultural Exhibition, 44. Horse Power for Pumping; Evaporation and Seepage, 45. Naturalists Directory; Our Alaska Territory; What Readers say of Us; Immigration Bureau, 49. Patents and Inventions, 52

ILLUSTRATIONS.—View of Portland, 37. The Stanley Patent Vine-Setter and Hole Digger, 41. The Beebee Horse Power and Rotary Pump, 45.

ENTOMOLOGICAL.—The Ant and the Aphis; The Weird "Bug;" Bug Smellers; Lye; What I Know About Bugs, 45.

QUERIES AND REPLIES.—The Filbert Weevil and Filbert Grafting, 46

CORRESPONDENCE.—Fresno Notes; Lessons of a Dry Year, 38.

THE VINEYARD.—A Portuguese System of Long Pruning; Grape Cuttings, 38

THE FIELD.—Irrigation Ditches in Colorado; Bluestoning Seed Grain, 39.

PATRONS OF HUSBANDRY.—Grange Elections; A Day at Haywards; Installations at Placerville Grange, 40.

AGRICULTURAL NOTES, from the various Counties of California 40-41.

NEWS IN BRIEF on page 41, and other pages.

HOME CIRCLE.—Make Your House a Poem; The Mountain (poetry); The Piece that was Lost; Death of the Old Wife, 43. Chaff. Life is Hard in Germany, 42

YOUNG FOLKS' COLUMN.—Science Club, 43

GOOD HEALTH.—How Our Busy Young Men Destroy their Health; Warm Bed Clothing for Children; Prescribing by Telephone; A Hard Struggle. 43.

DOMESTIC ECONOMY.—Sponge Pudding; Canvas-Back Ducks; Cider Jelly; Almond Cake; Almond Jumbles; Cleaning Paint, Cocoanut Cake, 43.

SHEEP AND WOOL. The Boston Wool Market Wool Trade of 1881; California Wools in Boston, 46 Mechanic's Capitol, 49.

PUBLIC LANDS.—How to Make Known Our Vacant Lands, 47

HORTICULTURE. Killing the Pests; Answer to the "Other Side," 49.

MISCELLANEOUS.—Ebonized Wood; White Lead; The French Wheat Crop, 46. Wind Pressures; The

Business Announcements.

Apricot and Peach Pits For Sale, J. Rock, San Jose, Cal.
Plants, Trees, Etc., J. Rock's Nurseries, San Jose, Cal.
Seeds, Innisfallen Greenhouses, Springfield, Ohio.
John Bergstrom, Organ Builder, S. F.
Raisin Vine Cuttings For Sale, California Raisin Co.
Orange and Lemon Trees, T. J. Swayne, National City, Cal.
Fence Treatise, Seeds, Etc., W. F. Brown, Oxford, O.
Poultry, T. D. Morris, Sonoma, Cal.

The Week.

We have had another seven days of meteorological wonders with but little water, excepting the heavy downpour of nearly four inches in San Diego. This rain was well placed, and the San Diego river ran as it only does after a prolonged rain. Just above, in the country guarded by old Mt. San Bernardino, there was a sight fit to bring amazement to the dwellers there—a heavy snowfall reaching to a depth of 10 inches; the white masses clustering in the branches of the orange-laden trees, making a sight of great beauty, and transforming the face of the country into a portrait of the Arctic. Snowballs, sleigh rides and slush in the garden of Hesperides! It is not an unusual thing for an orange region of the south of Europe to be taken into the account, but the comparatively short history of California records nothing of the kind prior to 1882. Flurries there have been. Snow-covered mountains are among the regular delights of a southern California winter, but never a sleigh bell or a snow ball before. Fortunately, the snow was rather a warm article and the air temperate, so that injuries are reported exceedingly slight.

And the regions which had not the snow or the rain had a roaring wind. And the Ojai! We had a lovely poem about the Ojai last week. For further particulars, see Ventura county, on page 41 of this issue. And still we look for rain. Signs are thick for it as we write, but a wicked and perverse generation has not made much from them thus far.

Removing the Barriers.

Many who have fenced in government lands in California have profited by the bullock's-hide style of measurement of ancient history. They have enclosed all which their own selections surrounded, and thus have gained an apparent right to inlying tracts of good land which should be left open for the use of settlers, under the different laws. Sometimes these land-surrounders get into trouble from the fact that some of their laborers who have an inside view of their operations, make a bold turn and get the grabbers into a corner. We heard the other day of a large firm of land-encirclers in San Joaquin valley who desired to discharge a carpenter who was in their employ. The carpenter disliked his treatment, so he hired teams, bought lumber and hauled it into the interior of the princely domain of the firm aforesaid and began the erection of a house, announcing that he proposed to acquire the land from the government. When the firm heard of his operation, and knowing that he had them upon the hip, so to speak, they had a parley with him, which resulted in their paying him a bonus of $300, and restoring him to his old place on the pay-roll as carpenter, but with increased wages. The firm knew very well that they had no title to the land they had corralled with their fences, and as they did not wish to lose the use of it, they paid Aleck for his smartness, and thus retained their occupancy.

There are other land fencers who do not have such tribulation as this, but who are holding land which does not belong to them. This would not matter were it not for the fact that those who desire the land, and have a right to it, are kept away by the semblance of proprietorship which the enclosing fence carries. Of course, by looking up the records of the land office, it would appear that the land was still open; but such examinations are not easy to make, except by experts, and so the land lies in the possession of the fencer indefinitely.

It is very desirable that the shutting of good land from entry by this method of operation should be broken up. As it is, the holders resist occupancy by others, and sometimes resort to more audacious means to repel intruders than by firing coin at them. Those who have studied our land questions have long been aware of the evil of excessive inclosure, and have proposed methods to overcome it. The Surveyor-General of the State mentions it in his last report, and proposes a new enactment by Congress to restrain the present occupants from controlling more than the areas to which they have a legal right. The Board of Immigration recently organized in this city, finds that their placing of immigrants on public lands will be interfered with by the fact that such large areas are locked up by illegal enclosure, and they propose to gain access to such lands. At the meeting of the Board last week, a report was made on this subject by Capt. Blanding, which was printed in last week's PRESS. On Tuesday of this week, the matter was carried farther by the submission of a draft of a proposed law on the subject, as follows:

An Act to prevent the unlawful occupation of the public lands.

Be it enacted by the Senate and the House of Representatives of the United States of America, in Congress assembled:

First—The occupation or enclosure of any tract of the surveyed or unsurveyed public lands, in larger quantities than authorized by law, shall not prevent the entry thereon by any one duly qualified and intending in good faith to acquire title under the pre-emption or homestead laws. But where such tract has been enclosed or is occupied for the purpose of acquiring title thereto, under any of the laws of the United States, the occupation shall be held valid for such lesser quantity as the occupant is authorized by law to acquire title to.

Provided, That the occupant or several occupants, if more than one, shall, within ten days after written demand, designate the metes and bounds of such lesser quantity by well-defined marks. In case of neglect or refusal to do so, such occupant or occupants shall be deemed trespassers, and the whole tract may be entered on by persons duly qualified and intending in good faith to acquire title under the pre-emption or homestead laws, and such demand and neglect or refusal shall be held to bar a recovery in any action brought against any person so entering.

Second—Any person who by force or threats shall prevent any entry on such enclosed tract after such demand and neglect or refusal, shall be deemed guilty of a misdemeanor, and be punished by a fine of not more than $500, or by imprisonment of not more than six months, or by both such fine and imprisonment.

This bill is to be forwarded to the California delegation at Washington, with the request that it be enacted by Congess. As we have remarked above, it is not just that an occupier should hold parts of the public domain which are in excess of his right. If he can make use of land which is not called for, it will do, for it will add to his comfort and that of his family and will increase the productions and wealth of the State, by turning to account that which would go to waste. But such occupation as this is not like that which aims to create an idea of ownership, and holds it by menace or threat to anyone who comes to exercise his right of homestead or pre-emption. The barriers to the occupancy of land by those who have a legal right to it should be swept away.

Preparations for Drouth.

Our friends in the doubtful parts of the State are doing a great deal of thinking, and not a little in the way of deeds, in preparation for the drouth which threatens, but may yet be averted. The first to feel the pinch of the long dead season are the animals, which, before this time of the year, are usually cropping the new, rich growth of alfilerilla and the clovers. In the lower counties, the wintry storms came upon flocks which had already been weakened by short rations, and there has been some loss and much suffering. There is now a movement to take the sheep out of the country, and the way seems opening for them all along the new railway, from Arizona to Texas. It is reported that the railway will give special rates favoring shippers, and thus facilitate the carriage of the animals to fields where they can obtain pasturage. If the present weather continues for a few days, the sheep census of the lower counties will be considerably reduced, and it will be reasonable to expect good wool rates in spring, because of the reduced production.

There is much being done toward the utilization of all land which can be brought under ditch or which is naturally moist. In this way there can be considerable amounts of produce gathered, and the year can be worried over until a better one comes. H. M. Johnson sketches a plan for Los Angeles county as follows:

The sheep having been disposed of, if every farmer owning irrigable or moist land will immediately sow it to small grain, either for grain or hay, and after harvesting put it into corn, every cow, horse and hog in the county will go through the season in good plight, and we will have a surplus of both grain and hay to sell to our neighbors, thereby showing to our Eastern friends that a drouth in Los Angeles county has none of the terrors it has in any other country, and that one acre of irrigable land is easily worth double what it can be bought for at present.

I believe that if everybody will recognize the fact that we are in the midst of the worst drouth ever known in Southern California, and act accordingly; *i. e.*, go to work and irrigate and plant every available piece of land and let dry lands alone this year, that we will make such a showing that all our lands will double their present value by next spring. It is safe to say we can raise a crop of small grain on our dry land five times out of six. I doubt whether the best farmed lands east of the Rocky mountains can make as safe a showing. When our drouth comes, all we have to do is to irrigate in winter as well as summer, raise a crop of hay and harvest it; in May or June irrigate the same land again, seed it to corn and pumpkins, and we have a double crop, reimbursing us to a great extent for the failure of the grass and small grain.

Much the same practice can be employed in many other parts of the State than Los Angeles county, though to a less extent, for Los Angeles has wonderful water resources in streams and artesian wells. But there are many parts where a thorough soaking of some amount of land can be had this winter, even if it only be such an area as can be reached from a well. Land thus thoroughly soaked and then mellowed on the top to retain the moisture will prove productive even if the rain is wanting, and by planting crops on it which will minister directly to the support of the farm stock and for household use, the family will be well prepared to pass the year comfortably, and not draw very heavily upon the storekeeper for the year's support.

The State certainly was never in better condition for a dry year than at present. The irrigable area has been constantly increasing in all parts of the State, and the old sad picture of wide sear wastes during a dry year in California will not be seen again. The great San Joaquin valley, which used to be a yellow ocean of barrenness when the rains failed, will now be a patchwork of yellow and green, for the irrigated fields will show a delightful verdure. The counties below have also made wonderful progress in irrigation enterprises, and are to a certain extent independent of the elements, so long as the snow reservoirs of the mountains are filled.

Another reason why a dry year would now work but little of its old-time havoc is because of the progress which our farmers have made during the last two or three years in clearing their lands of incumbrances and the wiping out of the interest fiend, who is a merciless monster in a dry year. The agricultural producers of the State have done comfortably well for several years; they have made good use of their savings; their credit is good, and they can take a year's rest, if they cannot help it, with better grace than they could in former years. The greatest pinch promises to come upon the newly-planted trees and vines, and it is to be deeply regretted that an unfavorable year will to some degree arrest the notable progress of horticulture which it has beed expected the year would show.

But, whatever comes, there must be no loss of heart or courage. All writers are pointing to the disadvantages of other lands, and showing that California's misfortunes are lighter. It is doubtless true. Why then should one grow restless and lose what he has already gained by forced movement and sacrifice of property? A season of economy and of effort to meet deprivations with courage, will enable nearly all to hold on and enjoy the benefits which no doubt another year will bring.

MR. J. F. OSBORNE, who has been successfully connected with the business of this office during the past two and a half years, will hereafter act as assistant business manager, and we bespeak for him the favorable attention of our many friends and patrons.

A National Agricultural Exhibition.

At the July meeting of the Board of Directors of the American Agricultural Association, a resolution was unanimously adopted in faver of holding a National Agricultural Fair during the year 1882 at some central point in the United States.

Prior to the war, the United States Society held large and successful fairs in the principal cities of the country. From that time until the Centennial Exhibition nothing was done in this direction more than through State and inter-State fairs. The Agricultural Department of the Centennial was, however, one of the most attractive and interesting features of the enterprise, but even there, agriculture did not do full credit to itself on account of the division of interest. Since then, nothing has been done towards a national display of agricultural products, except at the Atlanta Cotton exposition of the present year.

That a national show of agricultural products should be held annually, or at least biennially, scarcely needs statement. The importance of the industry to every other interest of the country and the increasing attention that must be given it to meet the new demands that will be made upon it, require that those most valuable of all practical educators, competitive exhibitions, should be properly considered. If agriculture has advanced to the high condition in this country which it now occupies without these agencies, what will be its position and the position of the farmers when these fairs are held? Then, indeed, will England and the nations of Europe have reason to fear competition from American farmers; then will agriculture be recognized and respected in the United States as it is in England and France, and then will the best results be obtained more generally by our farmers, their profits increased and their care and labor lessened. This country stands already in the fore-front in agricultural productions, raising the largest quantity of corn, wheat, cotton, butter, cheese and pork, and producing the finest grades of cattle and the best stock in general, employing the best class of agricultural machinery.

Periodical agricultural exhibitions in the leading cities of the United States would be the most interesting and instructive institutions for the general good that could be organized. They would attract such an attendance as no gathering of their kind, outside of the Centennial, has secured since 1860. They would afford an opportunity for the display of stock such as the country has never enjoyed, not excepting the Centennial, where the facilities in this direction were inferior. What would be of greater interest than herds of Jersey, Short Horn, Ayrshire, Holstein, Hereford and other breeds of cattle, thoroughbred horses, sheep, swine, and poultry, dairy products, cereals, cotton, wool, woods, agricultural machinery and implements, and the vast wealth of this great industry? The railroad facilities of the present time would enable the safe shipment of stock from all sections of the country as it could never be done before. Such an exhibition would attract a million visitors, and not only accomplish vast good for the agriculturalists of the country, but prove of the greatest benefit to the city in which it was held.

The Royal Agricultural Society of England holds annual fairs at different points, and they are recognized as the most interesting and valuable of her public enterprises. The St. Louis fair in this country is largely patronized. On one day last year over 100,000 people were in attendance. The fair is held annually. The American Agricultural Association is now waiting to ascertain which city will do the most for the encouragement of a fair. Philadelphia, Baltimore, Cincinnati, Chicago and New York are each of them desirous of having it held within their limits. Thus far, Baltimore has offered the best inducements. New York is suggested because of its connections with the Old World. At this point the representatives of all nations would witness it. There is an opportunity for the establishment of a permanent fair here. Wherever it is held, $100,000 in premiums will probably be offered, thus insuring the largest and best agricultural and stock exhibition ever held. The Committee on Exhibitions, of which ex-Gov. George A. Crawford of Kansas, who was instrumental in the superior representation of Kansas and Colorado at the Centennial, is Chairman, is ready for immediate action. The other members are Capt. Burnett Landreth, who was Chief of the Agricultural Department at the Centennial; Hon. Thos. A. Galt, of Illinois, a leading manufacturer of agricultural implements; ex-Gov. Smythe, of New Hampshire, Col. Edward Richardson, of Mississippi, the largest cotton planter in the United States, and Col. Robt. Beverly, one of the largest stock men and representative agriculturists of Virginia.

An auxilliary committee will be formed of the representatives of the different industries concerned, and of the place in which the fair may be held.

COL. LAWSON, Agent for the Mission Indians, is furnishing the Indians in the northern part of San Diego county with tools for farming. He lately sent out a large stock of plows, harness, hoes and other agricultural implements to the Indians at San Jacinto and Warner's ranch, and they are preparing to put in a large area of grain.

ENTOMOLOGICAL.

The Ant and the Aphis.

EDITORS PRESS:—I take a sinful satisfaction in reading the Bible. I generally go after it in King James' version; though once in awhile I take a dive into the Douay. There is a good deal about bugs and things in the Bible, translate how you will. Moses was hefty on grasshoppers, crickets, etc., while he was just old lightening on lice, locusts and frogs. Solomon, also, beside being a good judge of women, was the most profound buggist of his era. What pious person has not read his beautiful apostrophetic remarks on the ant, where he opens on you by saying: "Go to the ant, etc."

Well, I took his order and went to the ant. I was in Nevada at that time; in which country you do not have to go far, when you go to the ant. In fact, all that vast area of sage-brush country that leads from the highlands of Mexico to the hyperborean solitudes, and spreads from Laramie to Los Angeles, is one swarm of ants. In all that country, save where the alkali flat shimmers in the noonday heat, or the perpetual snows glitter, ghost-light, along the moon-lit horizon, there is not a tree, bush, stone or clod, crag, crack, cranny or crevice but has been surveyed, a thousand times, by the nimble-footed forager upon whose industrious ancestors Solomon gazed with philosophic admiration 2890 years ago; nay, even 478 years earlier than that, when Moses beheld a vision in the burning bush, the ants, no doubt, scurried out of the bush to keep from getting scorched in the fire. Oh, the ant is an old settler.

Well! As I said, I went to the ant. I staid with him and I studied him, and gave to the public my observations on his ways and works through the columns of the San Francisco *Argonaut*, the California *Horticulturist*, and other media less renowned. In the *Horticulturist* I ventured to guess that the woolly aphis (or "apple-tree louse") wintered in the ground in the houses of the ants. That the ants protected and nursed the aphides in the ground, as we do cows in the stables, in order to milk them. The idea of the ant as a milker of the aphis is old; but my guess as to the ant wintering and housing the aphis I thought was new and original. Imagine my disapointment when I read in the Albany, N. Y., newspaper, dated March, 1844, the following from the pen of Mr. Noyes Darling, of New Haven, Conn., to wit:

"It is quite probable that the aphis, (of the cherry tree in particular) is domiciled with the ants in the winter, and, in the spring, as soon as the leaves are unfolded, is carried by the ants to the trees, where it finds its pastures in the summer. I have not, by any direct observation of my own, been able to verify this fact. Mrs. Darling, on one occasion, had the good fortune, on raising a flat stone, in the spring, to see the ants pick up and carry off the aphides which had been housed for the winter in the same habitation."

So much for the Darlings on ants and aphides. My own observation is, that the aphis is found around the roots of apple trees *in the holes made by the ants*. I have found the aphis and the ant together in the holes bored by the ants around the tree roots—found them so many a time. Now, I know that an ant can bore a hole in the ground, but I have little reason to think that the aphis can. Yet, have grubbed out old apple trees and found the aphis on the roots thereof, as far down as there were any roots. If the aphis is not a dirt-worker, how does it get down so deep into the earth? Echo answers "how?" If you want any other answer take Solomon's advice and "go to the ant, thou sluggard!"

I bequeath this matter to my fellow countrymen, of the apple-sass variety. If it shall be found, by general inspection, that the ant and the aphis are in cahoots, then the way to cure the aphis will be to stop the ant ere he climbs the tree. And, my dear brethren, (likewise sisters), I can tell you beforehand, that stopping ants is diligent business. When I reflect on the ways of the ant I feel free to say that Solomon was no slouch as a bug inspector.

Mr. Shinn is reported to have said that the woolly aphis does not work in sandy land. I differ with him on this matter, and have been differing with him on it for several years. It would be easier to get clearer ideas in the case if we knew exactly what that word "sandy" is meant to mean. If it means pure sand—pure silicious grit, or disintegrated free-stone—then, of course, the aphis would not live in it; neither would the tree. But if it means what we common clod-hoppers call "sandy land," then I grieve to say that I can show the whole State Horticultural Society plenty of woolly aphides on apple trees in sandy land in full pursuit of their constitutional rights, including the "unalienable," "life, liberty, and the pursuit of happiness." I am of the opinion, on information and belief, that, in a humid atmosphere of the temperate climes, a woolly aphis will work on an apple tree wherever there are ants.

The Word "Bug."

In the British Empire, outside of the Canadas, the word "bug" is not an elegant expression, as it is there confined to that vulgar *cimex*, the chinch of the bed-chamber; but in the free United States of America, anything with more than four legs, which is not a bee, a wasp, a hornet, a fly, or a five legged dining table, is liable to be a bug. There are known to be several hundred species of bug in our world; with the *Jeannette* voyage, yet to hear from. If there are any wooly aphides or scale bugs on the north pole, they are not yet classified.

When Shakespeare makes one of his characters say—

"Sir, spare your threats; the *bug* that you would fright me with, I seek.

He must not be understood as referring to an insect so much as to that Celtic monster, the "bug-a-boo," which is a full cousin to the "bug-bear," all of which belong to the Anglo-Saxon family of "hobgoblins." This is an interesting family, particularly to children, but has no entomological significance. The humbug belongs to the family of shoo-fly, being indigenous to the United States, and is an authochthon of the political arena.

[NOTE.—A portion of this is scientific information, which you will not get anywhere but right here.]

Bug Smellers.

Bugs have the sense of smell accutely developed, or implanted. Flies, ants, roaches, bees and nearly all insects, like Job's war-horse, smell "the battle afar off." Ants, guided by the faint odor of wheat, will make long journeys, in single file, to pack it home. Multitudes of insects journey across fields, following the odor of blossoms and flowers. This sense of smell is perhaps keenest in orchard insects, about the time the trees begin to blossom; therefore, if some, to them, poisonous odor can be fed to their sensitive noses at blossoming time it is liable to prove discouraging and depressing in their case. With this idea in view I have smoked my blossoming Winter Nelis pear trees with the heavy smoke of coal tar or asphalt. When trees are smoked with coal tar on a clear, still day in blossom time, the winged insects can be seen getting out in a hurry. The heavy tar smoke, beside driving out the winged insects, perhaps leaves some slight condensed sulphuric soot, or other matter, on the cool twigs and branches as a poisonous benefit for the wingless bugs. Under this smoke treatment my Winter Nelis pears were this year comparatively clear of that bug, blight, commonly called "mildew." I used no other treatment to the pears, yet the Sclavonians who bought largely of such fruits pronounced my Nelis the cleanest in the valley. I am not yet prepared to swear that the tar smoke cleaned the pears, but I do aver that I know of no other cleansing cause. The experiment is not costly. Coal tar, or liquid asphalt can be had at the "tar-springs" for the asking. Mix it with dry manure or old straw; place it where it will roll smoke into the tree-top; fire it, and let it smudge. I offer this coal tar racket, not as a complete success, but as an easy and, as I find it, safe experiment to try. If it will work, its application is far easier and cheaper than

Lye.

To spray large trees with concentrated lye, one pound to one gallon or one gallon and a half of water, is no child's play. On our large apple and pear trees, in Pajaro, the lye business is a disagreeable job; though when such lye is well and wisely applied it will, no doubt, kill the scale bugs and clean off the mosses.

To apply lye of the above strength to an orchard, you want a wagon, span of horses, big barrel, brass force-pump with other than leather valves, 30 ft. of rubber hose, a spray-nozzle and two men. The men must be gloved and masked, or else well greased with "axle-greese" or some other heavy "dope;" the horses must be draped to the ground with barley-sacking or other fabric, and nose-bagged; otherwise the men will be scalded and the horses will "raise Cain." Also, goggles are indispensible to a man who squirts lye up a tree. Those of my readers who like something solemn can put this, about goggles, down as a solemn fact.

Every printer knows,]
I suppose,
That an eye
Full of lye
Is very nearly—well
It hurts for a spell;
And printer's lye is not
Near as hot
As the stuff the farmer throws,
Through his hose,
On the trees.

J. W. GALLY.

Watsonville, Cal.

What I Know About Bugs.

EDS. PRESS:—All the fruit men are writing on bugology, so *we* will give you a chapter. To begin with, I have been humbugged for about twenty years by writers who created bugbears to frighten the fruit growers. First, came the lady-bug. Some wise Dr. about Oakland or Alameda wrote terrifying descriptions of its ravages, and made us all believe that it and the spider would ultimately eat all the fruit in the country and smother the trees. But the years came and went and so did the lady-bugs and spiders, until we learned not to fear them.

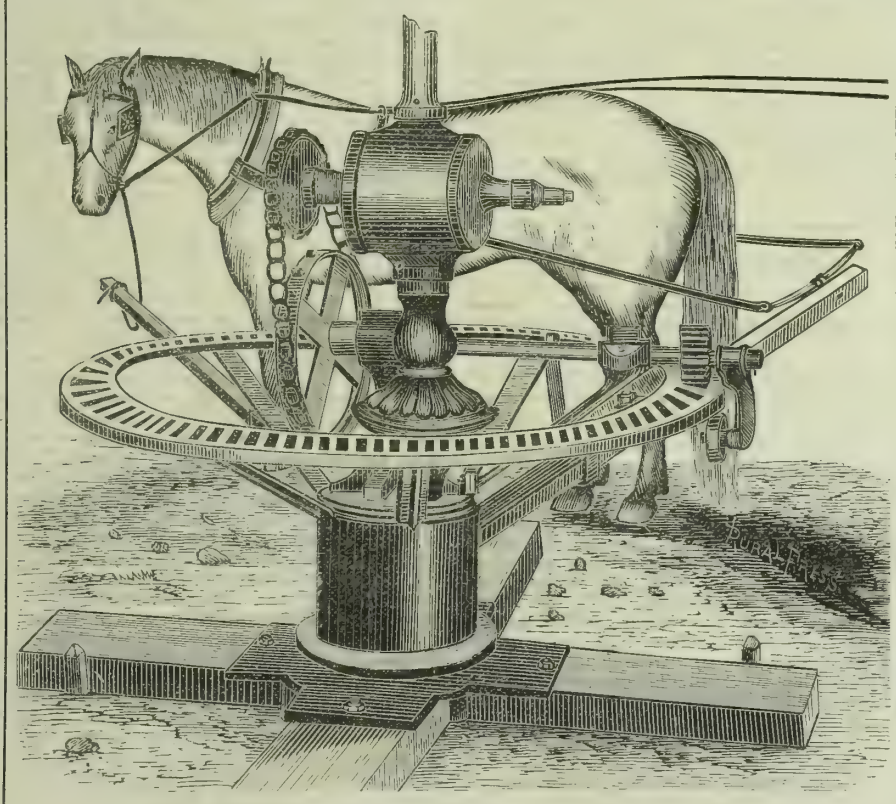
Then came the woolly aphis scare. The articles written were learned and able. I had a nursery of apple trees. I saw the dreaded pest on a few of the trees. I obeyed the injunction of the writers and dug up my nursery and burned the trees, rather than run the risk of spreading the pest. A friend persuaded me to let him take a few of the trees to Los Angeles county. I put them in strong vinegar, and then into concentrated lye. My friend has told me that no woolly aphis has ever appeared on those trees, although they are large and bearing abundant crops. Soon I found that the woolly terror had spread all over my orchard, and I settled down into a desponding condition, and consoled myself with the melancholy language of the poet—"I've seen my fondest hopes decay; I never loved a tree or flower, but 'twas the first to fade away."

One day I discovered the spiders and lady-bugs feasting on the woolly aphis, and I reflected on the wise provisions of nature and providence, and was consoled.

For a long time I have had great composure of mind. Not until this legalized bug boom has come up, have I been in the least disturbed. But Matthew Cook's treatise, the Sacramento convention and the Bug commissioners, flitting about like moths over the country, at last roused me up to look into this matter. I began to think, perhaps, the fruit business will yet be ruined by the codlin moth, the scale bug, the red spider, which have ruined the orchards at San Jose. So I went to John Rock, a man of great experience both in Germany and California, a thoroughly educated nurseryman. I said, "what is this about all the orchards in your country having been ruined by scale bug, red spider, codlin moth, and all these new pests?" "New," said he, "why I was working for old man Lick 19 years ago, and he had some sickly trees which were covered with the scale. He wound straw around the trees and set fire to it, saying, 'I'll destroy the rascals;' it is not new." Mr. Rock went on to say that some orchards round San Jose had been bought up by real estate speculators and laid off into town lots. The land had been rented out, and the ground sown to grain for hay, and the trees rendered sickly, hence these pests. He said the codlin moth was the worst, but it could be killed out by destroying the drop fruit promptly. Now, Mr. Editor, I see that I must write another chapter in order to set forth the moonshine of this bug commission business, and the absurdity of supposing that the fruit interests of the State are to be destroyed.

W. W. BRIER.

Centerville, Cal.



THE BEEBEE HORSE POWER AND ROTARY PUMP.

Horse Power for Pumping.

We give an engraving on this page of a recent California invention, patented through Dewey & Co., by R. M. Beebee, of Gridley, Butte Co. It is a horse power which may be used for pumping or other light work, and is very simple in design, light and portable, and has been used with satisfaction by farmers in Butte county.

The king post is mounted on a firm bed and is made stationary, not being intended to revolve. The master wheel has a cylindrical base, to which it is connected by means of arms, this base slipping over the king post, and revolving around it as the wheel revolves. In a journal at the top of the king post is placed the horizontal driving shaft; a brace carrying a journal bearing, for the outer end of said shaft, so that it will be properly supported and the pinion held down, as shown. On the outer end of this shaft is a pinion or toothed wheel which engages with the teeth perforations in the edge of the master wheel. On the under end of this shaft is a driving wheel from which runs a chain to the pulley on the shaft of the rotary pump mounted upon the top of the power as shown in the engraving.

It is an important point that all the bearing and wearing parts of this power are in sight. It will also be seen that the driving shaft with its bearings, crank, pulley and pinion are all inside the circumference of the master wheel so that the power is very compact. By extending the arms of the master wheels upward from the rotating base the face of the wheel is raised up to the proper level to engage with the pinion, and all the working parts are inside. There are, therefore, no tumbling rods or shafts to form obstructions for the horse in walking around his circle, and he passes under the chain and beam. The whole power with its driving apparatus is in a very compact form and both light and strong.

This arrangement will, we are told, raise from 1,800 to 2,000 gallons of water per hour with very little labor for the horse. It throws a constant stream without jerk or jar. It is up out of the dirt, not liable to get out of repair—can be set in operation in a few minutes. It is quite portable as it only weighs about 600 lbs. It has been used fastened to a sled, and moved from one well to another. As compared with pumping with windmills it may be said that the horse power does not stand idle when water is most wanted, cannot blow down, etc., and in its use it is not necessary to have such large tanks to store up water for a time when there is no wind. The rotary pump, as shown in the engraving, will draw water from a depth of 30 ft., but will force it any reasonable distance above the pump. The inventor is now having his apparatus arranged to pump water out of deep wells. The Beebee pump was shown only at the Stockton fair, and there it took a premium.

Evaporation and Seepage.

These two somewhat intangible consumers of moisture are of the greatest importance to the irrigator, and all matters tending to throw light upon the amounts of water they use up under stated conditions are of interest. The Anaheim *Gazette* recently secured a statement from Mr. Griffin, a civil engineer, which, although it does not give fixed formulas for determining seepage and evaporation, which indeed would be impossible, it does present considerations which should be generally understood. Mr. Griffin shows that the data on evaporation and leakage and filtration (seepage) are necessarily slight and imperfect. As evaporation occurs only at the surface of a fluid, it of course depends to a great extent on the area of that surface exposed. Still, it is greater in shallow water than in deep water, for the sun's heat also affects the water in the bottom of a shallow pool. It also varies with the state of the atmosphere, and with the seasons, being affected with greater rapidity in *dry* weather—even when the temperature be low. So it is more rapid also during the prevalence of a wind than in a calm. It is less in stagnant than in running water. Evaporation from reservoirs of like dimensions and construction would be greater in Anaheim than at Bakersfield, and greater on the Mohave than at Anaheim—because of the different degrees of humidity at these places.

At Medellin, a place 5,200 ft. above the level of the sea and in latitude 5° north, in the dry season—the mean temperature being above 60° and the humidity very slight—I found that the evaporation, filtration and leakage (these two factors being small because the reservoir was almost a natural one), in a deep, narrow reservoir in the hills, amounted to 0.12 inches daily during a period of 72 days. At Cartagena (in the same country), Mr. Trautwine noted 2 inches in 16 days, the thermometer rising daily to 120° in the sun, the dews being heavy and the atmosphere highly charged with moisture. Annual evaporation in Great Britain is from 22 to 38 inches; at Paris 34 inches; at Boston, U. S., 32 inches; at various points in U. S. from 30 to 36 inches. In the usual calculations for reservoirs, filtration, leakage (these make "seepage") and evaporation are treated together. Leakage

is not always very apparent; filtration (the sinking of water into the earth) never—nor is it easy to calculate it, for different soils have different powers of absorption. There may be crevices in rock near the surface of the earth, embankments may be improperly constructed, and the like. This undetected loss is not infrequently greater than that caused by evaporation and leakage combined. Evaporation alone is sometimes greater than rainfall—in a given district, or country—sometimes less. In new reservoirs the loss is apt to be greater than in old, for in the former case embankments have not had time to settle, nor to become as water-tight as they will be later. Actual experiment in every case is the only *safe* method of determining loss by evaporation, leakage and filtration.

Queries and Replies.

The Filbert Weevil and Filbert Grafting.

EDITORS PRESS:—Sometime ago I gave your readers a somewhat detailed article on the "Filbert and its Culture;" but it seems that my paper was not so complete as I imagined it was, for since its publication in the PRESS two enquiries have come already; one from Los Angeles county addressed to you, the other from Santa Cruz directed to me.

Your correspondent from Los Angeles writes as follows:

"I have nearly 100 filbert bushes from 8 to 12 ft. in hight and as far as I have been able to ascertain, they are the only ones in this locality, with one exception. Some of the filbert bushes I have allowed to grow as they liked, while others I have deprived of all but from six to ten of the central shoots. Last year the bushes bloomed about the first of March, and in August had quite a quantity of full-sized nuts, or rather nut shells, for upon cracking the shells nothing was found within except a pulpy substance. I would be very glad if Mr. Gillet would state how this defect in the formation of the nut may be overcome. After April of each year the bushes have been irrigated about once in six weeks. They are planted between rows of eleven-year-old orange trees and get but little sun. Could they be transplanted, and, if so, when should the transplanting be done?"

The Filbert Weevil,

Or *Curculio nucum*, is very likely the cause of the trouble with your correspondent from Los Angeles, and I expect that this enemy of the filbert, if I guess right in your correspondent's case, will prove another nut to crack for the Horticultural Board of that county, and our chief executive Horticultural Officer. In Europe the fruit of the filbert is attacked by three kinds of insects, viz:

First, the *Curculio nucum* or filbert's weevil, a coleopterous insect of the size of a good-sized fly, with a long snout that permits him to puncture filberts, hazels and walnuts, when green and tender.

Second, the *Corylus Attelabus*, another beetle, but four times as large as the *Curculio nucum;* armed, too, with a long snout. This kind, however, is found more on the wild hazel than the filberts of our gardens.

Third, Mites, a class of insects that belong to the genus *acarus*, and which do some damage to the young fruit.

The nuts that have been punctured by the *Curculio nucum* or *Corylus Attelabus*, are very easy to recognize; for, though they keep on growing almost to a full size, still they drop off prematurely, and with their husks, to which they hold fast, so much so, that it is sometimes very hard to take the husk off, while all good filberts come off easy from the husk. All such affected nuts are always rejected when gathering in the crop. On my own place, I have had such nuts every year, so punctured by the *Curculio nucum;* but they have always been so few, that I never paid any attention to it, and never looked after those little weevils either.

Your correspondent does not say whether the nuts drop off with their husks on, which is a certain sign of having been attacked by the weevils, though in breaking the shells nothing is found within, except a pulpy substance. I would infer that this curculio is the cause of the truble, if not mites. Anyhow, the first thing your correspondent has to do is to ascertain whether I am right in my supposition. When that is found out, I would then advise him to try solutions—codlin moth, tobacco, or even poisonous solutions—which he might apply on his bushes at the time the nuts are getting formed, as a spray, by means of a pump and nozzle, as is used now-a-days for such purposes.

Air and sun, as I stated in my former article on the filbert, are as beneficial to the filbert as to any other class of trees that we are cultivating for their fruit; but your correspondent, from the fact that he has his trees planted between rows of eleven-year-old orange trees, therefore getting little air and sun, thinks that may be the cause why his nuts have nothing inside. I will say that this has nothing to do with the trouble he complains of, and I would not advise him, anyhow, to transplant such heavy bushes.

In the course of his letter, your correspondent says: "Last year, the bushes bloomed about the first of March," etc. I believe he is mistaken about that, as filberts usually get in bloom right in the middle of winter. Right now, for instance, I have the Grosse of Piedmont and the Aveline in full bloom, and that in despite of the severe freezing every night—an inch of ice in my tanks; and to convince your correspondent, should he doubt my statement, I send you by mail, a twig or two of filberts with catkins or staminate blossoms in full bloom, and pistillate blossoms fully out; the pistils are those little bunches of minute, hair-like on the top of some leaf buds, and of a beautiful crimson color.

Filbert Grafting.

Now about that other query from your Santa Cruz subscriber. Says he:

"I am a reader of the PRESS; I noticed in the last number a statement from you in regard to filbert culture. It is natural for hazel to grow wild in this locality; so I thought it would be well for me to try your advice, to graft on the hazel. How close to the ground would you graft, and how many would you graft as a bunch? Could I transplant hazel and graft right on it? The idea was entirely new to me, until reading your remarks in the last number of the PRESS. Accordingly, I will be governed by your advice."

I will tell your correspondent from Santa Cruz that the best way to bud or graft filberts on hazel stock is to plant the latter in nursery row, grafting in the spring or budding in the fall; annular budding would, I should think, be preferable in all respects; (for that mode of budding, see back numbers of the PRESS). The grafting or budding should be done a foot above the ground and be allowed to grow five to eight shoots; the suckers or shoots below the grafting or budding being removed as fast as they shoot up. This taking off of suckers is absolutely necessary for the first two or three years, so as to give the graft a good start. It may be well in budding by the annular method, to use a ring of bark with at least two buds on, since it is desirable to have more than one shoot to grow from the bud. But I will here state again, that whenever suckers or layers can be obtained, nothing precisely is gained by grafting filberts on hazel stock.

Any of your readers that have young filberts from which they desire to procure suckers, I will tell them how to make their bushes grow more suckers. In the middle of summer, take off all side branches of the main shoot or shoots and give your bushes a good soaking. This will force out lots of suckers right below the collar of the root, and which will attain a good size before the winter sets in. This method of getting three or four times as many suckers as the bushes would otherwise give has very well succeeded with me.—FELIX GILLET, Nevada City, Cal.

Sheep and Wool.

The Boston Wool Trade of 1881.

As the wool trade of last year was peculiar, in many respects, and as all matters pertaining thereto are of interest, we take the following concerning the Boston trade for the year, from Walter Brown & Co.'s annual wool circular:

In reviewing the course of the wool market during the past year, it is necessary for us to go back a little farther, and call the attention of our readers to a few points which characterized the closing months of 1880. Immediately after the last presidential election, in November of that year, it seemed as though a fresh impetus was given to all branches of trade. The movement in woolen goods increased, with a feeling of confidence on the part of manufacturers that there would be a ready disposition of their production. Wool, which had been drooping almost continually since the previous spring, was not slow to join in the improvement and an active demand sprung up for the raw material, accompanied by a slight advance in values. This favorable turn was very acceptable to speculators in wool, most of whom had been operating for several months at a loss, and many took advantage of the opportunity to dispose of their unprofitable stocks. There were others, however, probably the majority, who argued, (and perhaps "the wish was rather to the thought"), that with the new year, a further improvement must come, and a rise in prices that would enable them to recover from the losses that had seemed inevitable. Hence a large amount of wool was carried over which might have been closed out during the activity early in December, and the stock on hand in Boston, as reported Dec. 31st, of both domestic and foreign wools, was almost 25,000,000 lbs., or 7,000,000 lbs. more than at any similar time for 10 years previous.

The year opened with a strong feeling among those interested in the staple, although they were somewhat staggered by the large amount on hand; however, they held on tenaciously, hoping against hope. The woolen goods market was more quiet than was expected, and manufacturers showing a disposition to act cautiously, would only purchase as their necessities required, which resulted in a much smaller aggregate of sales during the first quarter of the year than was commensurate with the large supply of wool and the near approach of a new clip.

In March, this state of affairs was too much for the patience of the wool trade, and to relieve themselves of the burden, a break was made in prices, which by the first of May, showed a decline from the beginning of the year of eight cents per pound on Ohio fine washed fleeces, or 16⅔%.

The backward spring had much to do with the slow movement of woolens during the early part of the year, transportation throughout the West and Northwest was almost impracticable, and the accumulation of goods in the hands of mill agents was very great. At the points of consumption, the supplies of clothing were much reduced, hence by the approach of warmer weather, and the opening of the channels of distribution, new life was given to this branch of industry, and manufacturers, encouraged by large orders on their latest productions, could look forward with considerable satisfaction to the prospect of a safe and reasonably profitable business during the summer and fall months. As a natural sequence, they became more liberal in their purchases of the raw material and holders being desirous to close out their old stocks before the new wools appeared on the markets, met the views of buyers, although a slight hardening in values was noticeable toward the end of the month of May.

Before the first week in June had passed the improved state of trade, with the hardening prices, was heralded throughout the wool-growing districts; wool dealers, hoping to recover some of their recent losses, promptly sent their buyers into the field, each endeavoring to be the first to secure wools at the low figure which wool growers were prepared to accept. Local operators immediately joined issues with them, and the competition, which seems to be inevitable under such circumstances, rapidly forced prices in the interior to a point that made profits a question of speculation in the future value of the staple. Manufacturers would buy freely at previous rates, but they had taken large orders for goods, based upon the quotations of a month previous, with only a small margin for remuneration, and they were slow in paying any advance. This course had a salutary influence, checking the excitement which prevailed in the country, and many dealers fearing to overload themselves at high cost, recalled their buyers, preferring to await the course of future events before stocking up for the season.

During July and August, the transactions were large, amounting to over 20,000,000 lbs., of which, however, but 3,000,000 lbs. were fine washed clothing fleeces. This was a source of much disappointment to dealers, whose lofts had become crowded with wool during that period, and, toward the end of the latter month, a desire to sell induced many of them to make concessions. At the same time there was a strong undercurrent in the general opinion, that wools could not decline very materially, based upon the healthy condition of almost every branch of industry, particularly that of woolen goods; also upon the high values that prevailed abroad for all classes of wool, precluding the possibility of any heavy importations during the present season. The correctness of this theory was clearly demonstrated early in the following month, when a period of almost unprecedented activity suddenly sprang upon the market, bringing the values of these neglected wools back to the highest range since June 1st, and showing an aggregate of sales for September equal to that of the two previous months and fully 6,000,000 lbs. more than for any one month during the past two years. The large purchases naturally furnished manufacturers with ample supplies for several weeks, and the last quarter of the year has been noticeable for a quiet market, but generally steady and firm, in the belief that consumers will be obliged to depend mainly upon our home-grown staple for their supplies, and that all the wools will be wanted before another clip is available. The closing fortnight has developed renewed activity, and the old year goes out leaving a hopeful aspect for the future in strong contrast to the preceding one. The transactions for the past week are large for the holiday season, and are evidence of the opinion among consumers, that wool is not likely to be any lower during the next two months.

One prominent characteristic throughout the entire season, has been the comparative consumption of the finer grades of wool. In our weekly reports we have frequently alluded to this subject, and have called attention to the different demand for medium and low wools. This is probably, in a great measure, due to the generally prosperous condition of the country, which has created a call for a better class of clothing among the masses than they could afford a few years ago, when all were suffering from a long period of disaster and depression. Coarse wools have for a long time past been almost entirely neglected for clothing purposes, and we would advise the growers of such wools to take prompt action toward improving the grade of their flocks, if they would look to any profit accuring from the production of the fleece.

California Wools in Boston.

Ex-Gov. Downey, who is one of the largest wool growers of San Diego county, writes a letter to the Los Angeles *Express* as follows: In your article on the comparative prices ruling in Boston wool at this particular juncture, you draw rather desponding conclusions as regards our California wool. Now, the truth is, there is hardly any California wool in the Boston market save the fall clip. This is dignified with the term wool, when, in fact, it appears more like the sweepings of a well-conducted shearing floor. The staple is so short that you cannot keep it together in distinctive fleeces. It is full of seed, burrs, dust and alkali, and I am certain that the Boston manufacturer is paying for it all it is worth. I sent my spring clip to Boston and I sold it at 26 cents per pound. This was unwashed fleece, not entirely free from seed and burr. There was no delay, I got my returns at once, and the charges were moderate. In the fall I sheared only my lambs, I had, as a matter of necessity, to go to San Francisco, and some of the warehouses were filled with what was called fall wool and I felt satisfied my wool would have to stand the ill favor attached to southern fall wool; so, without delay, I got Mr. Wentacher, of San Diego, to ship it to Dewey, Rice & Co., Boston, and in a few weeks I was informed that my fall wool was sold at 22½ cents per pound. I have always contended that our sheep men would find it to their advantage to put up their wool with care. There is, I think, poor economy in shearing in the fall. One good clip is better and more satisfactory than two short ones. The only difference is, perhaps, that there is less trouble in keeping the sheep clear of the scab by fall shearing, and but a little more labor and more cleanliness. With a good sized field for night folds instead of narrow and unclean corrals [where each animal is compelled to come in close contact with its neighbor and breathe an unhealthy atmosphere largely deprived of its oxygen by five or six thousand pairs of lungs, which is nearly always the case], there would be no scab and there would be clean fleeces. The fiber of the merino will never degenerate in our California climate. As far as this is concerned, the manufacturer is well satisfied with it, and he only objects to the shrinkage, and he will only pay for wool and not for dirt.

Miscellaneous.

EBONIZED WOOD.—A very simple process for ebonizing wood is given in the *Art Interchange*, as follows: "The wood is first stained with a decoction of logwood, which may be purchased from any druggist. It is dissolved in warm water until all has been taken up that the water will hold. Application to the wood is made freely with a large, soft bristle brush, and the surface is rubbed with a cloth to prevent the formation of a gummy coat thereon. After the article has been left to dry for a few hours, the second application, which consists of vinegar in which a quantity of nails or clean filings have been soaked for several days, is also freely laid on with a brush. The moment the vinegar touches the wood it combines with the logwood solution in the pores, making an ink which is a permanent jet black stain. The influence of the iron in the vinegar is all-important. If any tendency to grayness is noticed, a second treatment is necessary; but this seldoms happens. When perfectly dry, the article is varnished and rubbed down, or finished with furniture oil well rubbed in. Cherry is considered the best wood for ebonizing. Whitewood, maple and beech are used with good effect. Any close grained, dense wood will answer—ash, chestnut and oak are not suitable. This process, it is said, is used for fine ebony and gold furniture."

WHITE LEAD.—Mr. G. J. Lewis, of Philadelphia, proposes to obtain white lead by heating the fumes of lead resulting from smelting processes, and then passing it into a cooling retort. Finely powdered sulphuret of lead (galena) is introduced into a funnel, whence it is forced by a bellows into the retort. This retort is heated to a red heat, which causes the sulphuret of lead to sublime and to deposit itself on the cooler surfaces. The fumes of lead then pass into a cooling chamber, and finally into a reservoir where the product is collected. Another method of obtaining white lead is to introduce sheet lead into a chamber containing jars of acetic acid, the atmosphere being heated by steam to a temperature of from 30° to 50°, besides being strongly impregnated with carbonic acid.

THE FRENCH WHEAT CROP.—So France will also want more wheat before she can get another crop. The official estimate of the yield of wheat was published in the *Journal Official* Dec. 15th. It appears that the area under wheat was 355,680 acres more than in 1880, but the return was 14,750,000 bushels less, being 263,000,000, as against 277,750,000. The yield per acre was on the average, 15 bushels, as compared with 16½ bushels, and the weight per hectoliter, 76½ kilos, as against 77¾ kilos. From all points of view, therefore, and with a considerable increase in the acreage, the harvest of 1881 is inferior to that of 1880. And it must be remembered, that in 1880 France took a great deal of American wheat, some cargoes going directly from San Francisco.

THE BELGIAN GEOGRAPHICAL PRIZE FOR 1885. The King of Belgium has decreed a prize, to be offered in 1885, for the best system of popularizing the study of geography. The competition for the prize is to be international. Competitors may send their works, either printed or in manuscript, and either in the French, Flemish, English, German, Italian, or Spanish language, to the Minister of the Interior, at Brussels, before January 11, 1885. It is necessary that the prize manuscript shall be published in the course of the year following that in which the prize shall have been awarded.

INOCCULATION FOR PHYLLOXERA.—Dr. Mandon, Professor at the Medical School, at Limoges, claims to have discovered an effectual remedy for the phylloxera, his plan being to inoculate the stocks of the vines with a solution of carbolic acid, applied by means of a funnel inserted in an incision made for the purpose. This, he states, poisons the insect and destroys the eggs. This method has been put into practice at Argenton.

The Public Lands.

How to Make Known Our Vacant Lands.

Hon. B. B. Redding has in the January *Californian* a very valuable article on "Immigration, and How to Promote It." It is a straightforward letter of advice from one who has had almost a score of years' experience in public land matters in this State, as to the way to give practical aid to new comers who are in search of lands for homes. We are obliged to content ourselves with extracts from the article, having chosen them with an idea of showing our readers the steps which are necessary to take to find out what land is still open for settlement in any part of the State which they may wish to examine. We quote from the *Californian* as follows:

The man who comes to find a piece of public land for a farm, that he can pre-empt or homestead, wants definite information. He wants to know where he can find, at first cost, a piece of land of 80 or 160 acres, upon which he can raise wheat, grapes, or other crops, and thereby support himself and family. Any bureau of immigration that fails to furnish this information has no reason for living; is not worthy of support, and should die. It is popularly supposed that this kind of information can be obtained at the United States or State land offices. This is only true in a general sense. The basis of the information is to be found there; but it is distributed through perhaps 50 volumes of 400 pages each; and the United States does not find clerks to collate and classify this information. It surveys the land, furnishes a record of the quality of so much of it as is passed over by the surveyor—whether level, timbered or rocky—and opens these books to public inspection, and says, *caveat emptor*. If the immigrant goes to the land office, and says he desires to pre-empt a piece of land, the clerk immediately answers, where? It is not the clerk's business to find him the land, or to direct him to land he, the clerk, has never seen. The clerk will show him the books and maps, and allow him to make a selection; but, unless more than ordinarily intelligent, can only answer generally as to the climate, rainfall, or productions of the region in which the immigrant proposes to make a selection. If California was similar to Kansas and Nebraska, with thousands of square miles of prairie of almost uniform character and climate, the clerk could hardly direct the immigrant amiss; but California is peculiar. Generally, the most valuable agricultural portion of it may be described as a series of large valleys, running northwest and southeast, between two ranges of mountains. Some places at the north end receive nearly 100 inches of rain annually; other places in the same valley, not to exceed five inches. There is also a great difference in the rainfall between the east and west sides of the valleys, at the same elevation. There are also local differences; as for illustration: There are vacant Government lands in the San Francisco land district, in township four south, of ranges three and five east. If the immigrant selected his pre-emption in four south, three east, his land would receive an annual average of 18 inches of rain. If he selected it 15 miles farther east, in four south, and five east, his farm would receive not to exceed eight inches, and his crops of wheat would be failures four years out of five. He would find, by practical experience, that the Mt. Diablo range of hills, lying west of his farm, stripped the moisture from the clouds before they passed over his land. It is not the business of the clerks in the Government land offices to devote their evenings to the study of the meteorology of the State; nor to expend their salaries of $100 a month in examining lands, and estimating their agricultural possibilities, for the benefit of immigrants or the public. This is the work of the State, through a geological survey; and is not, in new States, usually undertaken and completed until public schools and universities have not only been planted, but have grown and borne fruit.

All the information necessary for the immigrant or settler can be procured, and can be exhibited to him, with such certainty and clearness, that, if he has positive ideas as to the kind of agriculture in which he proposes to engage, he can be directed to particular townships, containing public lands from which to make his selection. The business of obtaining and collating this class of information is in the hands of men who, from natural aptitude and opportunity, have been compelled to make the subject a study. A very excellent clerk or book-keeper might make a very poor searcher of records.

The gathering and publication of this information, as the only practical means of promoting a healthy immigration of agriculturists, should be under the direction of a bureau created by the State. This bureau should act under authority of law, not because the State, as a rule, does work as well or as economically as individuals, but because what is published by the State goes out as official, and has a weight and unquestioned influence in the countries from whence our immigrants come that are not accorded to the publications of individuals or corporations.

To direct and aid this class of immigrants, the Board of Trade of San Francisco has appointed a committee of gentlemen, who, without doubt, are unselfish, sincere, and earnest. It is very desirable that the work of this committee should result in fruition. Many of the members have possibly no more than a general knowledge of the laws of the United States and the rules and regulations of the United States Land Department, governing the survey and disposal of the public lands. It is not therefore, improper to show plainly what is necessary or requisite before this or any other committee or bureau could do effective and practical work in directing the farming immigrant where he may find desirable public land on which to make a home. It may also be added, that the system here proposed is not theoretical, but founded upon practical experience during the past 18 years.

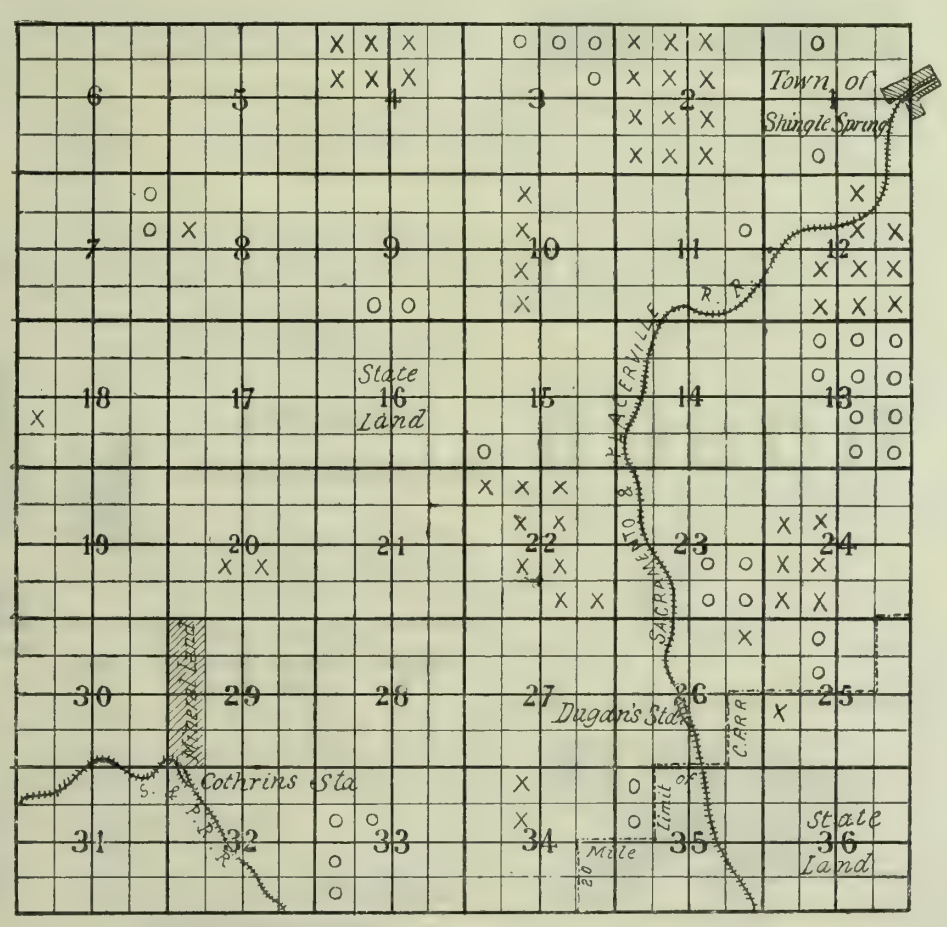
The public lands of the United States are first surveyed into blocks six miles square; these are called townships. These townships are numbered north, south, east, and west, from some prominent central point. In the northern part of the State this point is the summit of Mt. Diablo. The city of Sacramento is in township eight north, of range four east, therefore, it is in that particular township which is 48 miles north, and 24 miles east, of Mt. Diablo. These townships are subdivided into 36 sections, each a mile square, and systematically numbered. Each section again into quarter-sections of 160 acres each; and theoretically, these again into 40-acre tracts, which is practically the smallest subdivision with which the Government deals. This system is definite, and avoids any confusion. It enables the intending settler to find a given piece of land, and assures positiveness and clearness of description in patents and deeds. A conveyance of the southeast quarter of the northeast quarter of section 17, township 10 north, of range eight east, Mt. Diablo base and meridian, gives a clear and positive description of a certain and particular 40 acres of the earth's surface, which cannot be made to apply to any other 40 acres on this planet.

When a township is surveyed and subdivided, a map of it is made, and filed in the local United States land office. Any settler who may be living on the land in this township has now the preferred right, for 90 days, to file, in this land office, his claims of pre-emption or homestead for 160 acres, which must embrace the land where his house and other improvements are situated. The cost of filing a pre-emption claim is $3. The Government requires the settler to occupy and improve the land, and gives him a credit of two years and nine months within which to make his payment. He should, before the expiration of this period, appear at the land office, with two witnesses, and prove to the officers that he has lived on and cultivated the land, when he is allowed to pay for it, at the rate of $1.25 per acre, if outside of the limits of the grant of odd-numbered sections made by the Government to aid in building a railroad; or $2.50 cents per acre, if within those limits. After this is done, the Government issues to him a patent for the land. If the settler so elects, he may file a homestead for 160 acres. The fees in this case, if without the limits of a grant to a railroad company, are $16; or $22, if within such limits. The settler in this case is required to reside upon and cultivate the land for at least five years, after which he can appear, at any time within two years thereafter, with two witnesses, before the land office, and prove the facts of his residence and cultivation, when the United States Government will give him a patent without further cost, except an additional fee of $6, if the land is beyond railroad limits; or $12, if within such limits. There are other means of obtaining lands from the Government, such as State selections, university locations, etc.; but these do not interest the immigrant bureau, or the intending settler.

All of the land in the township not thus appropriated by the settlers who were living upon it at the time of the survey is subject to pre-emption and homestead, in 160 acre tracts, by the first settler who will occupy it, file upon it in the land office, and put it to use. If the township is within the limits of a grant to a railroad company, then only the vacant quarter-sections of even numbered sections are thus subject to pre-emption and homestead. The odd numbered sections can only be obtained by purchase from the railroad company.

The practical business of a bureau of committee on immigration is: First, to obtain the information where, in this State, may be found public land of the Government, of average quality, that is subject to pre-emption and homestead. Second, to have this information put upon maps, and kept in charge of an intelligent clerk, who has a sufficient knowledge of the State, its climate, and productions, to enable him to explain to an immigrant how it may be found and examined; and generally, the productions, climate, rainfall, and market facilities of each particular region. Third, the publication and distribution of a pamphlet, giving the obtainable statistics of the productions of the State, and its exports; the character of country; its peculiarities of climate; its rivers and railroad system; its common school system; and generally, such other facts as would give a stranger a correct view of California and its people. The publication should also state that there remained, of public lands, on the day of the publication of the pamphlet, as many millions of acres as may be found; that these lands are unappropriated, and are subject to pre-emption and homestead, in tracts of 160 acres, by any immigrant who desires them. It should further state that the immigrant bureau will have on exhibition maps showing these lands, and a person in daily attendance to explain to the immigrant how they may be found; and further, that no fee will be charged for giving this information. If possible, the correctness of the facts stated in the pamphlet should be indorsed by the British, German, Swedish, Norwegian, and other Consuls, as well as by the Governor of the State. If these three things were done, in a very short time the question of immigration would be solved. We need but show the members of the desirable classes of the East and Europe where they can obtain fair lands, at Government prices, or practically without cost, and they will find the way to come and take them.

If the bureau obtains this information, and simply gives public notice that it will, without cost, direct agricultural immigrants where they may find public land suitable for cultivation, and supply skeleton maps, showing these lands in a given township in detail, it may, in my opinion, cease further work or expenditure. The various transportation companies will, in their own interest, take the necessary measures to bring people to the State. To illustrate how simply and easily this information can be gathered by the bureau, and with what clearness and directness it can be exhibited to the immigrant, I have selected a township at random—township 9 north, of range 9 east, Mt. Diablo base and meridian; that is, that township which is 54 miles north and 54 miles east of Mt. Diablo. A map of the State shows it to be in the Sacramento United States land district, a part within and a part without the limits of the grant to the Central Pacific Railroad company; and that all of it is in the "foothills" of the Sierra, and within the county of El Dorado. The State map also shows that the Sacramento and Placerville railroad passes through it. A letter to the land office at Sacramento, asking what lands had been filed on by settlers, or disposed of by the United States in this township, and an inquiry at the railroad land office as to the patented and unsold lands belonging to the company in the same township, were both promptly answered. From these answers, the accompanying map has been constructed, showing all of the land in this township subject to homestead and pre-emption on the 14th of November, 1881; and also showing the lands which the railroad company, in the same township, had for sale on the same day.



This map shows that there are, to-day, in this township 2,120 acres of United States land undisposed of, and subject to pre-emption and homestead; and also, 1,320 acres belonging to the railroad company and for sale. To ascertain the general quality of this land, the office of the U. S. Surveyor-General was visited, and from the field notes of the United States deputy surveyor I made the following extract:

"The land in this township is generally hilly; it is intersected by several streams, toward the heads of which are fertile valleys. There are several vineyards in different parts of the township, which produce a good quality of wine. Toward the northern part are hills, destitute of timber and covered with chemisal and manzanita brush, which are capable of being converted into good vineyards. This township formerly contained rich deposits of gold; and the numerous creeks and ravines have been thoroughly mined. At present, there are, with few exceptions, no mines which are remunerative to white labor. Copper has been sought after in different parts of this township, but with no encouraging results. The Boston Copper M. Co. has worked for three years, and has sunk several shafts in the center of the township, but without much success. In the southwest quarter of section eight, and northwest quarter of section seventeen, are limekilns and marble quarries, from which a good quality of lime and marble are procured. The timber is generally white and live oak, and pine, with undergrowth of chaparal, chemisal, liveoak, manzanita, and buckeye. The township is well watered, and has good facilities for communication afforded by the different toll roads and the Sacramento and Placerville railroad."

The survey of the Sacramento and Placerville railroad shows that the land in this township has an elevation above the sea of an average of nine hundred feet. The lowest portion of the township, over which the railroad passes, is 453 ft.; and the highest, 1,425 ft. It is, therefore, within what is known as the warm belt of the "foothills." The meteorological records kept by the Central Pacific railroad company show that for the past seven years this township has received an annual average rainfall of 32.61 inches.

With a copy of this map, and the information here detailed, an immigrant could have no trouble in visiting this township, and making an examination of the vacant lands. He would, without doubt, find many tracts within the inclosure of people who, having exhausted their own free pre-emption and homestead rights, are desirous of retaining the use of adjoining valuable public land as long as possible; but they will generally yield possession when a filing is made in the United States land office.

From personal knowledge and cursory examination of the records, I am convinced there are, on the plains east of the Sacramento and San Joaquin rivers, and in the "foothills" of the Sierra, below an elevation of 2,000 ft., more than 2,000,000 acres of wheat, orchard and vineyard land subject to pre-emption and homestead.

In taking this township to use for the purpose of illustrating how the vacant lands are to be found and exhibited to the immigrant, I happened upon one quite thickly settled, where there are schools and places of worship, wheat farms, orchards and vineyards—in fact, one of the most noted vineyards in the State is in this township. If I had taken, for purpose of illustration, a township farther away from a railroad, it would have disclosed larger bodies of public land.

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Washingtonville, Ohio, June 17th, 1880.

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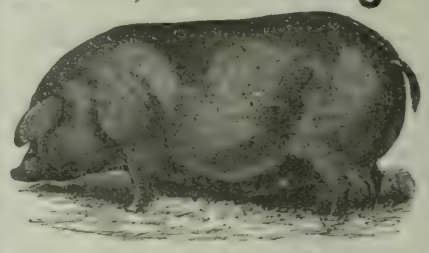

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SEMI-ANNUAL STATEMENT

OF THE

Grangers' Bank of California,

JANUARY, 1882.

Amount of Capital Actually Paid in U. S. Gold Coin, Surplus Paid Up and Reserve Fund - - $534,101.99

State of California, City and County of San Francisco. John Lewelling and A. Montpellier being duly sworn, severally depose and say that they are respectively the Vice-President and Cashier of the Grangers' Bank of California above mentioned, and that the foregoing statement is true.

(Signed) JOHN LEWELLING, Vice-President.
(Signed) A. MONTPELLIER, Cashier.

Subscribed and sworn to before me this 4th day of January, 1882.

(Signed) GEO. T. KNOX, Notary Public.

ASSETS:

Loans on Wheat, Real Estate and other securities	$1,681,259 69
Due from Banks and Bankers	21,082 68
Real Estate—(Bank's interest in Grangers' building)	77 200.00
Other Real Estate	27,772.94
Office furniture, fixtures and safe	3,000.00
Interest accrued	23,830.99
Cash on hand	83,430.76
Total	$1,917,577.06

And the said assets are situated in the following counties, to-wit: Alameda, Butte, Contra Costa, Colusa, Fresno, Merced, Monterey, Inyo, Kern, Placer, Stanislaus, Sutter, Solano, Sonoma, San Francisco, Tehama, Tulare and Yolo.

LIABILITIES:

Capital Stock paid in gold coin	$ 500,000.00
Surplus paid up, and reserve fund	34,101.99
Due Depositors—Banks and Bankers	1,282,896.31
Bills payable—Mortg'e assumed on real estate	40,000 00
Undivided net profit (1881)	60,578.96
Total	$1,917,577.06

State of California, City and County of San Francisco. John Lewelling and A. Montpellier being each duly sworn, severally depose and say that they are respectively the Vice-President and Cashier of the Grangers' Bank of California above mentioned, and the foregoing statement is true.

(Signed) JOHN LEWELLING, Vice-President.
(Signed) A. MONTPELLIER, Cashier.

Subscribed and sworn to before me, this 4th day of January, 1882.

(Signed) GEO. T. KNOX, Notary.

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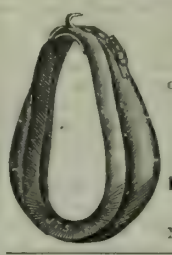

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HORTICULTURE.

Killing the Pests.

EDITORS PRESS:—Having lately spent a day in and about San Jose, observing the operations of orchardists and others in their fight with scale insects, I can but wish that others should know of the good work that is going forward. Dr. S. F. Chapin and Mr. D. C. Vestal, whose careful experiments with insecticides have attracted so much attention throughout the State' are showing that they have faith in their own recommendations. The former is the fortunate owner of a young and vigorous orchard. A few trees last year showed the presence of scale insects, but they were exterminated by the use of lye, so that no trace of them can now be found.

No harm was done to dormant deciduous trees by spraying all over with one lb. of concentrated commercial lye to the gallon of water. The potash in the lye seemed to act as a fertilizer to the trees. The doctor is so convinced that he can completely control the pests that he is setting out a large addition to his orchard. He is decidedly in favor of lye as compared with kerosene. The latter has no fertilizing qualities, and he fears that it may eventually injure the trees.

Mr. Vestal, on the other hand, after trying kerosene last year, feels safe in its use, if of sufficient purity, say from 115° to 150° fire test. His large orchard has suffered much from scale insects, but will probably recover during the next year, as he was finishing the work of spraying it from one end to the other. He has also cut back the tall poplars which were found to harbor the scale *Aspidiotus perniciosus*.

Mr. Rutherford has also done admirable work in spraying his large orchard. In some cases he had tried two lbs. of lye to the gallon, without apparent injury to the trees. In most cases he used one and quarter lbs. to the gallon, giving a solution registering about 16° by a common hydrometer. This is full strong. Not a live scale insect or red spider could be found on the trees treated, although in many cases they had concealed the bark by their numbers before. Several large apple trees were shown as melancholy monuments to an experiment last year with crude petroleum, which had destroyed them. The impure oil does not evaporate, but soaks into the bark.

Visiting John Rock's nursery, we found him complying with the quarantine rules, in disinfecting the large quantities of fruit trees which he is shipping, although we saw no scale insects upon them.

The work is done in a long tank containing the lye solution. After dipping, they are placed on a sloping platform, and more of the liquid is poured over them from a dipper.

The spraying of orchards has certainly been reduced to a science. I thought that I knew something of that kind of work years ago, when fighting the curculio in western New York, but I never before saw such perfect apparatus as is turned out at San Jose. The Merigot force pump, throwing two streams, to supply the "bug-sprays," and Chapin's light bamboo extension nozzle, of any length up to 15 ft., make the slaughter of insects easy and economical to a degree which must be seen to be appreciated.

It now looks as though the neighborhood of San Jose would soon be noted as a clean place in which to set out an orchard. It will be, if her citizens appreciate the importance of disinfecting all infested trees—the ornamental as well as useful. C. H. DWINELLE.

Berkeley, Jan. 16th, 1882.

Answer to "The Other Side."

EDITORS PRESS:—H. P., of Winters, would have us believe that the fruit business is going to the dogs in 2 or 3 years. He reminds me of the old man in the "Hoosier School Master," who ended up every conversation with "We'll all have the fever, and the Injuns are coming." Now, Mr. Editor, it is not because I wish to sell those peach trees I advertise in the RURAL, for they will sell as did the pear and apricot trees, because I advertise in your extensively read paper, but for the sake of truth, that I answer H. P., and to encourage new beginners in the fruit business.

More than 10 years ago I predicted that the time would come when the fruit crop of California would pay more than all the wheat and gold mines combined. Now I believe the time is at hand, when my prediction will be fulfilled. In 1853, I sent to Rochester for fruit trees, which cost me 50 cents each, and they were not a foot long. I borrowed money at 3% per month to pay for them. I had faith in trees; have been in the business ever since, and have more faith than ever before. I sold $630 worth of peaches from each acre of six-year-old trees last year. It strengthens a man's faith to do this. The year before, I sold $24.40 worth of apricots from each one of those trees I planted in 1853; was East when the last crop was harvested.

But, says "H. P.," the bugs are coming, and the fruit men are going to be sick; the man is "doomed to disappointment" who thinks he can get rich at selling apricots and peaches for two cents per pound. I have been in the fruit business and have made it pay, and think two cents for peaches is good enough. Let us see: A medium-sized peach tree will bear 200 lbs. I plant 160 trees on an acre; thus we have 32,000 lbs. at two cents, equal to $640 per acre. A man can take care of 10 acres of peach trees and not work much either. While the trees are growing he can raise corn and beans on the ground. I encourage tree planting and do not fear competition, although I have just bought 310 acres of land for tree culture. Let all the boys plant trees, for the youngest will not live to see the culmination of this business in California. We are going to have cheap freights before the trees your are planting begin to bear. Even now our home market would not take all, but the world opens its mouth to taste California fruit. If H. P. is discouraged up at Winters, tell him to come over to me in Alameda Co., and I will show him land where trees will pay and no bugs near it. The land is for sale near what I have bought. W. W. BRIER.

Centerville, Alameda Co., Cal.

Naturalists' Directory.

Collectors in the various departments of natural history find that they can aid each other greatly by exchange of material. One who is interested in the work, asks the PRESS to copy from Casino's Directory a list of the names of California collectors, not claiming that it is complete, but stating that those mentioned are willing to correspond and exchange material with others in the same line of study. We publish the list to facilitate correspondence and exchange, and thus serve our readers who have leaning toward studies in natural history:

California Collectors Who Will Exchange.

Geo. W. Warren, Ferndale, Humboldt Co., botany, ferns, etc.
Mary E. P. Ames, Auburn, botany.
Rev. F. H. Wales, Dutch Flat, Placer Co., mineralogy.
Charles L. Anderson, M. D., Santa Cruz, botany, algæ.
Melville Atwood, Saucelito, geology. Special branch, inclosing, or wall rocks of metalliferous veins. Exchanges in specialty.
Mrs. R. F. Bingham, Santa Barbara, botany.
Frank E. Blaisdell, Poway, San Diego Co., entomology (local). Exchanges in oology and coleoptera.
Mrs. S. G. Blaisdell, Poway, San Diego Co., ferns.
S. Bluthner, Lockeford, San Joaquin Co., coleoptera.
S. D. Brastow, care Wells, Fargo & Co., S. F., paleontology, mineralogy.
Elisha Brooks, 1725 Sutter St., S. F., ferns.
Mrs. A. E. Bush, Curator State Normal School Museum, San Jose, conchology, mineralogy, algæ.
Miss Jennie R. Bush, San Jose, entomology.
George D. Butler, Fort Jones, Siskiyou Co., botany.
J. W. Calkins, Santa Barbara, conchology, algæ
A. W. Crawford, Oakland, botany, paleontology, geology, mineralogy.
Andrew T. McCreery, 519 Jones St., S. F., coleoptera.
Roscoe P. Chandler, Riverside, San Bernardino Co., oology.
Miss Kate O. Sessions, 1427 7th Ave., East Oakland, ferns, mineralogy, entomology, molluska.
Daniel Cleveland, San Diego, botany, ferns, marine algæ.
Mrs. Elwood Cooper, Santa Barbara, botany.
J. A. Edman, Meadow Valley, Plumas Co., geology, mineralogy, meteorites.
Gustav Eisen, Fresno, annelida, oligochæta. Exchanges types of oligochæta.
William C. Flint, 210 Sansome St., S. F., mineralogy, shells, ornithology, oology. Exchanges in oology.
H. C. Ford, Santa Barbara, ferns, algæ, paleontology, archeology, conchology
F. G. Hall, Greenville, Plumas Co., chemistry, mineralogy, geology.
D. W. Hambly, Spanish Ranch, Plumas Co., geology, mineralogy, meteorites, general biology.
Laura J. F. Hecox, Santa Cruz, conchology. California shells in exchange for land and fresh-water shells, fossils, etc.
E. K. Hill, Brownsville, Yuba Co., botany, ornithology, entomology.
A. W. Jackson, University of California, Berkeley, mineralogy, microscopy, lithology.
G. Walter Johnston, Sacramento, botany, glumaceous plants, fungi.
Prof. Josiah Keep, Alameda, conchology. Fine Pacific in exchange for Atlantic and foreign shells.
Prof. George R. Kleeberger, San Diego, botany, zoology, embryology, arachnida.
Edgar L. Ricksecker, P. O. box 2211, S. F., coleoptera.
S. B. P. Knox, A. M., M. D., Santa Barbara, algæ, microscopy, entomology.
Miss Helen Lennebacker, Santa Cruz, algæ.
George W. Michael, Jr., Moro Bay, San Luis Obispo, geology, mineralogy.
S. M. Mouser, M. D., 235 Kearny St., S. F., microscopy, general botany, vertebrate embryology.
William Norris, 516 California St., S. F., microscopy.
Mary E. B. Norton, San Jose, botany.
Carrie A. Wheelan, 311 Fourth St., Oakland, coleoptera.
John H. Orcutt, San Diego, conchology, oology.
George H. Peck, El Monte, Los Angeles Co., lepidoptera.
Miss Emily O. Pelton, Brownsville, phænogamic botany, ferns.
W. S. Phelps, Ferndale, Humboldt Co., botany.
J. B. Pownall, Berkeley, coleoptera.
George H. Ready, Santa Cruz, oology.
J. Edward Reed, Wright's Station, Santa Clara Co., mineralogy, mound builders and Indian relics.
O. N. Sanford, San Diego, general natural history (local). Exchanges in coleoptera and conchology (general).
Frank M. Stone, 216 Sansome St., S. F., shells, ornithology, oology.
F. L. Button, 859 Broadway, Oakland, conchology, mollusks.
James A. Hall, Watsonville, Santa Cruz Co., general exchange.
Ferdinand McCann, Santa Cruz, oology. Exchanges eggs in sets.
Miss Emma Swain, 1354 8th Ave., East Oakland, minerals, mollusks.
Miss Cornelia Walker, San Jose, marine zoology.
Miss Mary E. Wilson, ferns, algæ.
Chas. T. Winslow, S. F., conchology, ornithology, oology. Exchanges shells, birds, skins, nests and eggs.
Mrs. Lizzie Wright, Monterey, ferns.
W. G. Wright, San Bernardino, botany, palms, cacti, ferns, seeds, etc. Exchanges for rare ferns.
Dr. Lorenzo G. Yates, Centerville, Alameda Co., conchology, geology, mineralogy. Many specimens for exchange. Send list.
Lucien A. Blochman, San Diego, conchology, algæ. Offers all specimens found in San Diego.
Philip Sidney Carlton, corner 19th and Brush Sts., Oakland, coleoptera.
Laura G. Feely, Patchen, Santa Clara Co., shells and curiositics.
Moses L. Frick, San Diego, conchology.
Prof. Milo H. Gates, Green Valley, El Dorado Co., botany.
John H. Russell, San Jose, Santa Clara Co., exchanges Pacific coast shells for those from any part of the world.
James E. Wadham, San Diego, conchology, algæ. Offers all specimens found in San Diego or northern part of Lower California.
F. V. Hopkins, M. D., East Lake, Lake Co., mineralogy, geology.
Lewis Locke, 926 Jackson St., S. F., ornithology.

IN SOME parts of Yorkshire, Eng., hundreds of farmers' laborers are out of work, many of whom will probably emigrate in the spring.

What Readers Think of the Rural.

A subscriber in Santa Clara county writes: I proposed to my wife to stop the RURAL, as money was scarce, but she said, "No; I will sell eggs enough to pay for it," so I send you the cash for the subscription.

Another reader in Stanislaus county writes: "The RURAL PRESS is appreciated by the people in this section. It is never spoken of but with praise, and now on New Year's, I will wish both the paper and its publishers many happy returns of the day."

Still another in Ventura county writes, "that the prosperity of the RURAL may be wide and lasting, is my sincere wish."

Kind words, showing the appreciation of our work, are most encouraging and have contributed greatly to our progress hitherto. We are duly thankful for such expressions of confidence.

OUR ALASKA TERRITORY.—Paymaster King and Master Hames, of the United States Navy, published in the Washington *Post* an article taking issue with Prof. Elliott, of the Smithsonian Institute, in regard to the population and resources of Alaska. They say they have been stationed in Alaska for 26 months ending last August, and have personally traversed the whole of the southeastern section, and instead of the total number of white inhabitants of Alaska being only 392, as Elliott asserts, they confidently declare that there are about 500 whites at Harrisburg, 250 at Wrangel, 200 more at Sitka, not including the 250 Russians creoles there who are entitled to be classed as whites, and numbers of others at more than half a dozen smaller settlements where whites are found in companies ranging from 3 to 4 up to 15 and 20. They also say it is the greatest mistake to assert that nothing of value in minerals has been discovered in southeastern Alaska, and add that from Harrisburg settlement, not yet a year old, over $50,000 in gold dust has been sent below, and sales of quartz veins have been made at high figures, with a view of working them next season. Enough has been done to show the great value of the placer ground and exceeding richness of mining of the ledges, and it is certain there will be a large addition to the population next spring. They add: "Further, we know that the agricultural prosperity of that section is rapidly developing, and that the climatic difficulties in the way of it are far from insuperable. Further still, there are now measures on foot to develop the timber interests in one kind, of which the yellow cedar is so valuable and so abundant in Alaska. Neither Washington Ter., Oregon nor British Columbia can compete with Alaska."

IMMIGRATION BUREAU.—The first monthly meeting of the Immigration Bureau was held Tuesday, Jan. 17th, when the monthly reports of the Secretary and the Land Officer were read and filed. The report of the Secretary shows that 89 persons have called at the office in regard to land; that $272 50 have been collected from subscribers, and $250 borrowed from the Board of Trade, making the total receipts $522.50, against which there had been drawn $371.55, leaving a balance of $150.95, against which there are debts amounting to $294.18. The report of the Land Officer states that 142 townships, containing 350,000 acres of unappropriated lands, have been examined and platted; that nine townships, containing 150,000 acres, have been examined for character and designated, and that during the month 14 persons have been sent to look at land. The report of Capt. Blanding, in regard to the pre-emption of lands, made at a previous meeting, was read. Capt. Blanding then stated that, since making the report, he had seen the bill prepared by State Surveyor-General Shanklin, and spoken of it in his report, but that it did not meet the case. He had prepared a bill, and would suggest that it be engrossed and forwarded to the California delegation at Washington. The bill will be found in another column.

JOHN ROCK'S NURSERIES.—Tree-planters and tree-growers will be interested in the advertisements of John Rock, of San Jose, in this issue of the PRESS. He makes a special announcement of apicot and peach pits and Bartlet pears in dormant bud. Mr. Rock's general catalogue of trees, shrubs and plants, should be consulted by all planters and gardeners.

FILBERT BLOSSOMS.—We receive from Mr. Gillet some staminate and pistillate blossoms of the filbert, plucked from his trees in Nevada City. They are courageous blooms to come out in the present cold spell and in the face of such a northeast wind as has prevailed this month. An interesting article on filbert-growing will be found in another column of this issue.

WHY GRASS WILL NOT GROW UNDER TREES. M. Paul Bert has shown that green light hinders the development of plants. Plants inclosed in a green glass frame wither and die as though they were in darkness. M. Regnard finds that plants specially require the red rays. If sunlight is deprived of the red rays, the plants soon cease to thrive.

MISCELLANEOUS.

Wind Pressures.

The wind pressures experienced in India are remarkable. On October 5th, 1864, on the Eastern Bengal railway, two trains were upset during a violent storm. One of these was a train of eight passenger vehicles, and was upset near Ednapore. The other was a train of twelve passenger vehicles, and was upset near Arrunghatta. In both cases all the passenger vehicles were blown over on their sides. Besides these carriages, four wagons were blown from a siding at Buggoolalo, and capsized about half a mile north of that station on the same day, from collisions caused by wagons which were started from sidings from the force of the wind. On Sept. 21, 1878, a long train of wagons traveling at about eight miles an hour, on the Eastern Bengal railway, was brought to a standstill by a heavy storm, and was then forced back about a mile with full steam and brake against it; 18 wagons were then detached, but even with half the train it was found difficult to continue the journey. On Nov. 20, 1880, at Negapatano, on the South Indian railway, an empty covered goods wagon was upset by the wind while standing at rest in a siding. Numerous instances have occurred on the Indian railways of trains being stopped, or nearly so, by the force of the wind.

The wind pressures above alluded to are certainly very remarkable for continuous pressures; but in the exceptional cases of tornadoes, such as those which passed over portions of Kansas and other States in that vicinity during the two last seasons, the pressures were far in excess of anything related of India. If the accounts are reliable large animals, such as horses, were lifted completely from the ground and carried long distances in the air; human beings were lifted in the same way and dashed to death. Houses were utterly destroyed to their foundations and their timbers and boards scattered far and wide over the adjacent fields. Electricity doubtless has much to do with the violence of such tornadoes.

The Mechanic's Capital.

The mechanic is sometimes looked upon, says the *American Machinist*, as a man without capital. Sometimes he looks upon himself in this light. This is all a mistake. The man who earns $1,000 a year has not only capital, but in these times of low interest he has considerable capital.

The manufacturer and the merchant aim to increase their capital by a judicious handling of present means. The mechanic does, or should try to, increase his in the same way. Knowledge to the mechanic is capital, because it enables him to command more for his services. If he possesses simply the skill of the workman, he can make that skill earn him a certain sum per year, which sum is the exponent of the capital he has invested in his business. If to the skill of the workman he adds the knowledge of the man who thinks beyond present purposes, he earns more, or, in other words, he increases his capital. The young machinist, for instance, who learns machine drawing, is morally certain at some time to find use for it where it will stand exactly to him as the money of the capitalist stands to its possessor, although this is hardly a *fair* statement, because he will at once find use for it. When the man who earned $1,000 a year, by virtue of his skill as a workman, adds such a knowledge of his business as to earn $2,000 a year, he has as surely doubled his capital as the man who has twice as much money to invest in his business as he formerly had.

It is earnestly advised that every apprentice to the machine business shall do a little calculation for himself on this subject, always remembering that capital, which is the result of skill and knowledge, is seldom at a discount and never lost. It is just at this time in their lives when habits are formed that, to a great extent, determine the working capital with which they are to go through life.

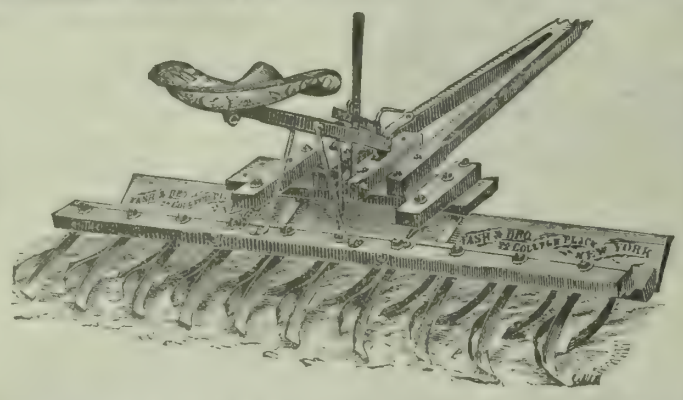
SEPARATE SOUNDS ON ONE WIRE. — M. Maiche has found by experiment that sounds of different characters produced from two separate sources can be sent simultaneously on one wire and received separately. He used at the receiving station two telephones of different resistances, and at the transmitting station caused a musical box to be set going on a microphone of small resistance, while an induction telephone transmitter was spoken into at the same time. The musical sounds were reproduced in the telephone which had the least resistance, and the vocal sounds in the other, so that with the two telephones to the ears the music could be heard by one ear and the speech by the other.

A GREEN METEOR.—The Griffin, Geo., *News*, of a late issue, says: "Some evenings since we saw one of the most wonderful meteors that ever brightened the surrounding hills. It was some time between the hours of 11 and 12 o'clock; we were quietly meandering home from the sanctum, when suddenly a bright rosy light loomed up directly from the southern horizon, and shot with a flash toward the northeast, at an angle of about 70°. When about midway of the heavens the color suddenly changed to a rich green."

"ACME"

PULVERIZING HARROW, CLOD CRUSHER AND LEVELER.

For the Orchard, Vineyard, Nursery and Grain Field.



Send for Pamphlet giving Testimonials from the Pacific Coast.

The "ACME" subjects the soil to the action of a Crusher and Leveler, and at the same time to the Cutting Lifting, Turning process of double rows of STEEL COULTERS, the peculiar shape and arrangement of which give Immense Cutting Power. The entire absence of Spikes or Spring Teeth avoids pulling up rubbish. It is especially adapted to inverted sod, hard clay and "slough land" where other Harrows utterly fail, and also works perfectly on light soil.

NASH & BRO., Sole Manufacturers,
22 College Place, New York City.

SOLD IN CALIFORNIA BY: G. B. Adams & Son, San Gabriel; Oliver Holden, San Jose, Jonn Tuoby, Visalia.

C. I HUTCHINSON. H. R. MANN.

HUTCHINSON & MANN,

INSURANCE AGENCY

322 and 324 California St., and 302 and 304 Sansome St.,

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CAPT. A. M. BURNS, Marine Surveyor. F. T. HOYT, City Surveyor.

HUTCHINSON & MANN, Agents for Pacific Coast.

Cash Assets Represented, $23,610,723.

Girard Insurance Company (Of Philadelphia), Assets, July 1, 1881, $1,155,809.
St. Paul Insurance Company (Of St Paul) Assets, July 1, 1881, $854,305.
Watertown Fire Insurance Company (Of N Y.) Assets, July 1, 1881, $995,437.
New Orleans Ins. Association (Of New Orleans). Assets, July 1, 1881, $773,216.
Peoples' Insurance Company (Of Newark), Assets, July 1, 1881, $47,[illegible]78.
Teutonia Insurance Company (Of New Orleans), Assets, July 1, 1881, $375,291.
Dwelling House Underwriters (Of New York). Assets, July 1, 1881, $2,358,068.
La Confiance Insurance Company (Of Paris), Assets, January 1, 1881, $6,679,[illegible]65
Fire Insurance Association (Of London), Assets, January 1, 1881, $1,349,943.

MARINE.

London Provincial Marine Ins. Co. (Of London,) Capital and Assets, Jan. 1, 1881, $6,278,362.
La Foneiere Marine Insurance Co. (Of Paris), Assets, January 1, 1881, $2,090,4[illegible]8.

JOHN CAINE,

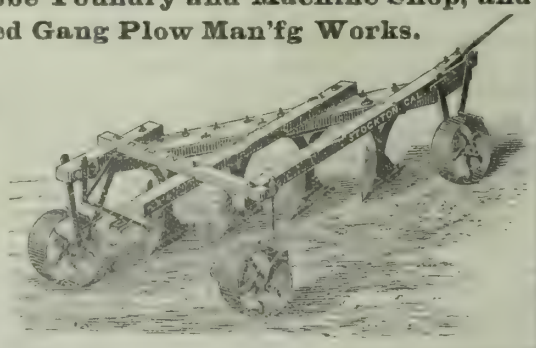
Proprietor of the Globe Foundry and Machine Shop, and Stockton Improved Gang Plow Man'fg Works.

AGENT FOR

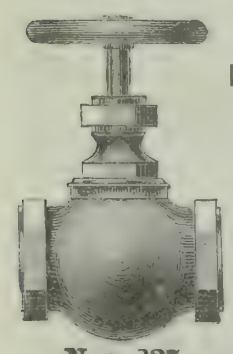
Studebaker Farm and Spring Wagons, Header Trucks with wide and narrow tires, Rakes, Derricks, Belting, Cordage, Oils, Forks, Hardware, etc.

☞ Steam Engines, and general repairing, with large assortment of extras for Agricultural Implements, and the STOCKTON GANG Plows, Reversible Molds and Land Sides. Address

JOHN CAINE, Stockton, Cal.
GLOBE IRON WORKS.
P. O. Box, 95.



W. R. ALLEN & CO.,



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Iron Pipe and Fittings,

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For Steam, Water and Gas,

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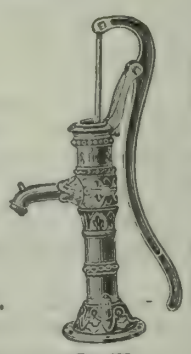

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MUSICAL BOXES.

M. J. PAILLARD & CO.,

Manufacturers and Importers of all Kinds of

MUSICAL BOXES

Of Standard Reputation. The largest and finest assortment in the city. Musical Boxes with changeable cylinders always on hand at low figures. The latest style patented, "THE INTERCHANGEABLE," patented February 11, 1879.

Repairing Musical Boxes and Furnishing Material a Specially.

23 DUPONT STREET, SAN FRANCISCO.

E. JUILLERAT, Sole Agent for Pacific Coast. (Branch House of 680 Broadway, N. Y

IMPERIAL EGG FOOD.

Will make your Hens Lay, keep them in the best possible condition and ward off disease. When fed according to directions, sick and drooping fowls are never seen. It furnishes the needed material for forming bone, muscle and feathers, and is

Invaluable for Young Chicks and Moulting Fowls. It comes packed in various sized packages, and being a powder, is easily mixed with the customary feed. Give it a trial. Send Stamp for Circular and Testimonials.

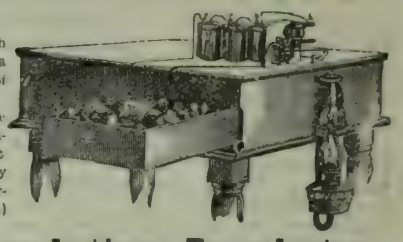
Price.—Single pound, 50 cents; Two and a half pounds, $1.00; Six pounds, $2.00; 25 pound keg $6.25. Address,

G. G WICKSON,
General Pacific Coast Agt.
No. 319 Market St.,
San Francisco,
California.

MONEY IN CHICKENS AND EGGS.

—The— Eclipse Self Regulating Incubators are now in actual use in most parts of this State, and giving general satisfaction. They are a success, and being such are invaluable to all who attempt to raise chickens; are easy to manage, and cost merely a trifle to keep in operation, and will do much better work than can be done with hens, with a small portion of the labor and risk.

☞ The "ECLIPSE" is the only entirely self-regulating incubator known; is the only one that will bear investigating, so it is the only safe one to purchase. Send stamp for Circular of California Testimonials (not Eastern.)



The Eclipse Self-Regulating Incubator.

The Merigot Pump and Spraying Nozzle.

Largely used for Applying Insecticides in Orchards around San Jose.

FAVORABLY MENTIONED AS SERVICEABLE AND REASONABLE IN PRICE BY THE SPEAKERS AT THE SACRAMENTO CONVENTION.

☞ The Merigot Spray-Tip Nozzle is the best known.—*Dr. Chapin's Address.*

The pump is Well Made with Metal Valves. Price, $12.

WESLEY FANNING, Co-Operative Workshop.

277 to 281 St. John Street, San Jose, Cal.

CHEAPEST. BEST.

BOOTH'S SURE DEATH

To Squirrels, Gophers, Birds, Mice, Etc.

☞ Endorsed by the Grange and all others who have used it.

INFALLIBLE SQUIRREL and GOPHER EXTERMINATOR.

STRENGTH INCREASED. PRICE REDUCED.

Put up in 1 lb., 5 lb., and 5 gallon tins. Manufactured by

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FOR SALE BY ALL WHOLESALE AND RETAIL DEALERS.

Tubbs Hotel,

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An elegant family residence in charming grounds. Two hundred rooms Near steam and street cars. Forty minutes to or from San Francisco. Trains every half hour. Five-cent fare. Table d'Hote or Restaurant. Splendid suites of sunny apartments or single rooms with or without bathrooms. The most HEALTHY and agreeable location on the Pacific Coast. Mean yearly temperature 55 Sun unobscured from March to November. A HOME for tourist or invalid. Good cuisine under a celebrated Chef. Prices more reasonable than any hotel of its character in California. Livery stable, laundry, billiard room, telegraphic communication, etc., in connection with the hotel. Special terms made. All applications answered.

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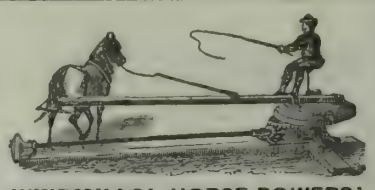
PURE BRED POULTRY.

Langshans, Cochins, Brahmas, Leghorns, Plymouth Rocks, Dorkings, Pekin and Rouen Ducks, Bronze Turkeys, Etc.

I have a large stock of the above varieties for Sale Cheap, considering the quality of stock. For further information, send 3 cent stamp for new circular and price list to **R. C. HEAD, Napa, Cal.**



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TANKS AND ALL KINDS OF PUMPING MACHINERY BUILT TO ORDER.

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Send for Circulars.

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Beautiful Illustrated Catalogue Free.

The best list of new, rare and beautiful flowers ever sent out. New Gladiolus, Tuberoses, Amaryllis, Roses, Carnations, 100 varieties of Lilies, choice Flower and Vegetable Seeds, Seeds of House Plants, &c. All seeds except rare kinds are sold in FIVE CENT PAPERS. Everything warranted true to name. See Catalogue; prices are low. The following sent by us postpaid. 10 Gladiolus, 10 sorts named 50c. 12 Pearl Tuberoses, 35c. 10 Lilies, 10 sorts named, $1.50. All fine sorts and large bulbs. Remit currency or postage stamps. My goods have an established reputation and go to all parts of the world.

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THE NEW IMPROVED VANELESS

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S. H. Kiler, of San Rafael, has the Agency for all Counties North of the Bay. Having them in stock orders for any size can be filled at once.

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Six lines or less in this Directory at 50 cts a line per month.

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PAGE BROTHERS, 213 Clay street, San Francisco, (or Cotate Ranch, near Petaluma, Sonoma Co.) Breeders of Short Horns and Spanish Merino Sheep.

MRS M. E. BRADLEY, San Jose, Cal. Breeder of recorded thoroughbred Short Horn cattle and Berkshire hogs. A choice lot of young stock for sale.

R. J. MERKELEY, Sacramento, Cal. Breeder of Short-Horn Durhams and Norman-Percheron horses.

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R. NOELL, Grass Valley, Nevada Co., Cal. Breeder and Importer of Thoroughbred Jerseys.

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HENRY PIERCE, 728 Montgomery Street, S. F. Breeder of Jersey, Guernsey and Ayrshire Cattle. Has them for sale.

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JAS. A. PERRY, of River View Stock Farm, Wilmington, Ill., has in Petaluma, Sonoma county, several fine Norman Stallions of his last importation direct from France. Catalogues on application to Jas. A. Perry, Fashion Stables, Petaluma, Cal.

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E. W. WOOLSEY & SON, Fulton, Sonoma Co., Cal. Importers and Breeders of choice Thoroughbred Spanish Merino Sheep. City office, No. 418 California St., S F.

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The American Driven WELL WATER SUPPLY SYSTEM

FOR MINING, IRRIGATION, MECHANICAL DOMESTIC & MUNICIPAL PURPOSES

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The Fresno Colony,

On the line of the Southern Pacific Railroad and adjoining Fresno City and the Central Colony. Has the most favoroble location of any Colony, as well as other superior advantages. Abundant water secured. Land unsurpassed for Vine Raising and Fruit Culture. Send for Map and Circular, or come and examine. Address

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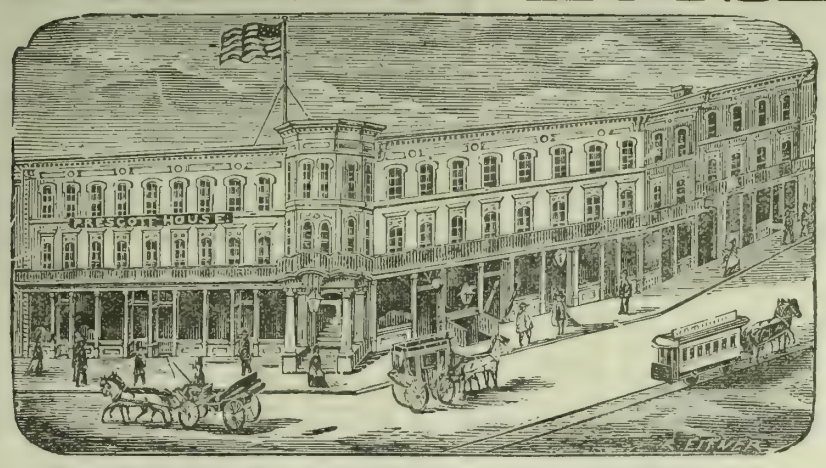
PRESCOTT HOUSE.



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Lace Curtains, Window Shades and Draperies,

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That the public should know that for the past ELEVEN years our SOLE BUSINESS has been, and now is, importing (OVER 100 CARLOADS) and breeding improved Live Stock Horses, Jacks, Short Horns, Ayrshires and Jerseys (or Alderneys) and their grades: also ALL THE VARIETIES of breeding Sheep and Hogs We an supply any and all good animals that may be wanted, and at VERY REASONABLE PRICES and on CONVENIENT TERMS. Write or call on us. LICK HOUSE, San Francisco, Cal., October 22, 1881 PETER SAXE & HOMER P. SAXE.

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THE MYERS PLOWS.

All extras for Patent

Slip-share Gang Plows,

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SINGLE PLOWS,

Constantly on hand and for sale at

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MANUFACTURER OF ALL KINDS OF

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Of all kinds and sizes.

Keeps a good supply of well seasoned wood on hand. Blacksmithing and painting departments in connection.

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LITTLE'S CHEMICAL FLUID.

The New Non-Poisonous Sheep Dip and Disinfectant. Price reduced to $1.60 per gallon. For directions and testimonials apply to FALKNER, BELL & CO.,

Sole Agents, 430 California Street, S. F.

Calvert's Carbolic

SHEEP WASH.

$2 per Gallon.

After dipping the Sheep, is useful for preserving wet hides, destroying the vine pest, and for wheat dressings and disinfecting purposes, etc. T. W. JACKSON. S. F., Sole Agent for Pacific Coast.

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Goods Crops every Season without Irrigation

Farms, Stock Ranches, Dairy Farms, Fruit Farms, Vineyards, Chicken Ranches and homesteads of every class and description in this and adjoining counties for sale or rent on reasonable terms. State requirements and obtain suitable particulars from the Real Estate

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Reference—Dewey & Co, Rural Press.

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This House is the Leading Hotel of the City, containing all the modern improvements. General Ticket Office for the Big Trees, Yosemite Valley, Bodie, and General Stage Office for all the Southern Mountain Towns. The Yosemite Coach will convey guests from the boats and all trains, free of charge

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ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1881.

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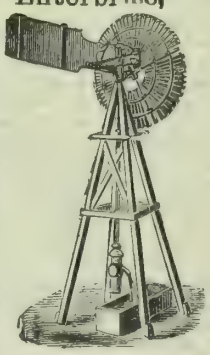

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Positively self regulating with no coil spring or springs of any kind. No little rods, joints, levers or balls to get out of order, as such things do. Mills in use six to nine years in good order now, that have never cost one cent for repairs.

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Iron Founders, Machinists and Manufacturers of Improved Agricultural Implements. General Jobbing and repairing done in the best manner at most reasonable rates. Send for circular to MATTESON & WILLIAMSON, Stockton, Cal.

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The largest and deepest milking herd of Holsteins in the world. 225 head, pure bred, mostly imported, males and females of different ages.

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Hambletonian Stallions and Mares of superior breeding Personal inspection invited. Separate catalogues of each class, and milk records of cows mailed free on application. All inquiries promptly answered. State that you saw this advertisement in the PACIFIC RURAL PRESS.

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Hunter's Eccentric Patent Coupling.

For carriages, pumps and whiffletrees and other couplings. No bolts, no rattling and no unhitching. State and County rights for sale. Address HUNTER & FRANCIS, Merced, Cal.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co.'s SCIENTIFIC PRESS PATENT AGENCY, No. 252 Market St., S. F.

FOR THE WEEK ENDING JANUARY 3, 1882.

251,819.—SELF-CLOSING STOPPER FOR BOTTLES—David Berry, Bolinas, Cal.

251,849.—HYDRO-CARBON BURNER—E. A. Edwards, San Buenaventura, Cal.

251,857.—STOVE PIPE—A. Flohr, Sacramento, Cal.

251,715.—HAND LEVER ATTACHMENT FOR STEAM PUMPS—Wm. D. Hooker, Oakland, Cal.

251,902.—BOTTLE COOLER—C. H. Laufketter, Sac'mento.

251,909.—SOLDERING APPARATUS—Albert Lusk, S. F.

251,786.—BASIN PLUG—J. C. Luding, S. F.

251,799.—SELF-FEEDER FOR THRESHERS—John Scholl, Elk Grove, Cal.

251,966.—TICKET HOLDER—Jas. G. Tait, Stockton, Cal.

251,984.—GRAIN CLEANER—Wm. Williamson, Rio Vista.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast Inventors transacted with perfect security and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of special mention:

SHACKLE.—James T. Rogers, Westport, Mendocino county, Cal. No. 251,464. Dated Dec. 27, 1881. This invention relates to a new and useful device for uniting cables; and it consists of an open link, the shanks of which are perforated, and have extended slots connecting therewith, through which a bolt passes, said bolt bearing a tug or projection at the end opposite the head and a rib to fit between the shanks at the link. The bolt passes through the adjacent closed link, so that the bolt after being introduced through it, will be turned by it so that its tug and rib will turn away from the slots in the shanks of the open link, whereby it will be locked in place and retained. The object is to provide a convenient and easy connection for chains or cables which are fastened to buoys. In the ordinary method the bolt is fastened with a key, which is separate therefrom and is liable to be lost or misplaced at a critical moment. In this invention this is obviated by having the bolt fastened by the extended rib, which, being connected therewith, cannot be lost and is operated by the cable itself.

HYDROCARBON BURNERS.—Evan A. Edwards, San Buenaventura, Ventura Co., Cal. Dated, Jan. 3d, 1882. No. 251,849. This hydrocarbon burner is in the class adapted to burn liquid fuels and to be attached to steam boilers. It consists in a peculiar and novel construction o parts, whereby the steam, oil and air open out separately from the end of the burner. The steam is conducted in a separate passage around the oil passage, and allowed to mix with and atomize the oil only after said oil has passed its valve and is beyond the end of the burner—a point of advantage being herein considered. The air is drawn in through a passage made through the valve stem, so that the oil, steam and air come together beyond the mouth of the burner, and within the combustion chamber of the furnace.

SELF CLOSING STOPPER FOR BOTTLES.—David Berry, Bolinas, Marin Co., Cal. Dated Jan. 3, 1881. No. 251,819. This invention relates to a novel means for closing the mouths of bottles without the use of corks or other stoppers; and it consists in the employment of a supplemental cap, which may be fitted to the mouth or neck of any bottle by suitable means, and is provided with transversely moving slides, which close across the mouth and are operated by closing springs and levers, by which they may be opened. The device may easily be placed upon any bottle or transferred from one bottle to another.

GRAIN CLEANER.—Wm. Williamson, Rio Vista, Solano Co., Cal. Dated Jan. 3, 1882. No. 251,994. This invention relates to that class of agricultural implements known as grain cleaners, in which the grain is received upon shaking screens and subjected to the action of a blast of air from a revolving fan. It consists in such a construction of the screen-containing shoe and the means for operating it as will impart to the screen a peculiar movement, very effective for the purpose.

BOX FASTENER.—Charles Martell, Vacaville. Dated Dec. 27, 1881. No. 251, 449. The object of this box fastener is to make an easy and secure fastening for the lid. It consists in providing the ends of the lid with bent clips, which fit down in grooves or notches, in the ends of the box, and are secured therein by a strap and the action of a spring clip. The invention, though applicable to every form of box, is especially intended for fruit boxes, as commerce demands in that case an easy means for securing or removing the lid.

Amounts of Grain on Hand.

We give below statements of the amounts of grain on hand in California at the beginning of the year, as published by the S. F. Produce Exchange. We give also the result of a special inquiry as to the amount of wheat by A. Montpellier, of the Grangers' Bank. It will be seen that Mr. Montpellier makes the amount of wheat somewhat less than the report by the exchange:

Report of Flour and Grain in California on Jan. 1st, 1882, as taken by the S. F. Produce Exchange.

	Flour. Bbls.	Wheat. Ctls.	Barley. Ctls.	Oats. Ctls.	Beans. Ctls.	Corn. Ctls.	Rye. Ctls.
San Francisco and Oakland Wharf, including wheat afloat in harbor	51,905	1,903,267	114,969	58,751	55,009	14,997	3,934
Marin, Sonoma, Lake, Mendocino and Humboldt Counties	8,155	292,723	16,150	17,360	755	4,034	...
Napa, Solano, Yuba and Colusa Counties	15,991	4,519,588	8,315	......	......	2,20[illegible]	...
Sacramento, Yuba, Sutter, Butte, Tehama and Placer Counties	17,150	1,201,091	70,080	10	......	2,210	15
Contra Costa and Alameda Counties	5,050	1,963,029	232,680	4,250	100	3,300	181
San Joaquin, Stanislaus, Merced, Fresno, Tulare and Kern Counties	10,800	3,358,440	19,100	......	......	2,000	27,000
San Mateo, Santa Clara, San Benito, Santa Cruz and Monterey Counties	6,800	1,510,056	237,418	2,748	6,150	50	......
San Luis Obispo, Santa Barbara, Ventura, Los Angeles, San Bernardino and San Diego Counties	8,300	512,826	124,690	2,021	32,733	128,935	925
Totals	123,151	15,191,020	821,322	85,143	95,843	157,716	32,153

COMPARATIVE STATEMENT.

	Flour. Bbls.	Wheat. Ctls.	Barley. Ctls.	Oats. Ctls.	Beans. Ctls.	Corn. Ctls.	Rye. Ctls.
July 1st, 1881	135,694	12,444,278	595,[illegible]28	15,744	70,780	94,210	3,820
January 1st, 1881	78,253	19,8[illegible]5,466	1,651,787	95,220	113,708	228,017	17,742
July 1st, 1880	30,934	323,821	908,294	18,357	52,217	88,572	5,989
January 1st, 1880	83,[illegible]38	4,096,895	2,013,930	112,351	48,904	129,715	38,712
July 1st, 1879	37,786	593,251	806,665	26,484	......	148,002	22,237
January 1st, 1879	75,1[illegible]0	5,781,168	2,2[illegible]7,142	137,042	......	233,534	64,384
July 1st, 1878	20,2[illegible]1	284,424	147,598	29,564	......	11,066	280
January 1st, 1878	67,187	2,646,811	882,046	104,998	......	110,434	3,991

Wheat on Hand January 1, 1882.

First Division—Shipping points and central counties, San Francisco warehouses, Oakland wharf, and on board ships, Port Costa warehouses, Vallejo warehouses, Alameda county warehouses	225,639
Second Division—Northern counties, including Sacramento valley east and west, Solano (Vallejo not included), Napa, Sonoma, Yolo, Colusa, Tehama, Butte, Sutter, Yuba, Placer, Sacramento counties	232,832
Third Division—San Joaquin valley counties, Stockton and San Joaquin county, Stanislaus, Merced, Fresno, Tulare	171,438
Fourth Division—Southern Pacific Road counties, Santa Clara, San Benito and Monterey counties	61,102
Fifth Division—Coast counties not included above	18,684
Total tons	709,695

Other counties producing hardly enough for home consumption, have been omitted.

ALBERT MONTPELLIER,
Cashier and Manager Grangers' Bank.

Pacific Coast Weather for the Week.

[Furnished for publication in the PRESS by NELSON GEROM, Sergt. Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending Wednesday, Jan. 18th, at noon, for the stations named:

Date.	Olympia.	Portland.	Roseburg	Red Bluff	Sacram'to	San Francisco	Visalia.	Los Angeles.	San Diego
Thursday	.00	.00	.00	.00	.00	.00	.00	.02	1.53
Friday	.00	.00	.00	.00	.00	.00	.00	.04	*
Saturday	–	–	.00	.00	.00	.00	.00	.00	*
Sunday	.02	.–	.00	.00	.00	.00	.00	.02	*
Monday	.00	.00	.00	.00	.00	.00	.00	.00	.01
Tuesday	.00	.00	.00	.00	.00	.00	.00	.00	.00
Wed'sday	.05	.03	.03	.00	.00	.00	.00	.00	.00
Totals	.07	0 03	0.03	0.00	0.00	0.00	.00	.08	

*Reports missing.
Dash (–) signifies too small to measure.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired), be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents

REMITTANCES to this office should be made by postal order or registered letter, when practicable; cost of postal order, for $15 or less, 10 cts.; for registered letter, in addition to regular postage (at 3 cts. per half-ounce), 10 cts

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The Pacific Rural Press.

[Established in San Francisco in 1870.]

This is the leading farming journal on the western half of the continent, and second to none in America. It is well printed and illustrated, weekly. Contains an unusual amount of fresh, original farm, household and family circle literature. Careful attention is paid to giving full and reliable weekly market reports. The following are among its ably conducted departments: Editorials on agricultural and other timely and important subjects of live interest to farmers and their families; agricultural, and other useful and ornamental illustrations; correspondence from various quarters of our new and rich developing fields of agriculture on the Pacific coast, embracing new hints and ideas from progressive men and women in all branches of rural industry; Horticulture; Floriculture; The Garden; The Home Circle; The Grange; Young Folks; Domestic Economy; Good Health; Entomological; Sheep and Wool; The Dairy; The Stock Yard; Poultry Yard; The Swine Yard; The Apiary; The Vineyard; Queries and Replies; New Inventions (and illustrations of new and improved machinery); Agricultural Notes; Items of General News, etc. Its columns are studiously filled with chaste, interesting, fresh and useful reading, devoid of questionable literature for old or young and fancifully alluring clap-trap advertisements. Send for sample copies.

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No. 252 Market St., S. F., Cal.

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M P OWEN—Santa Cruz county.
J. W. A. WRIGHT—Merced, Tulare and Kern counties.
JARED C. HOAG—California.
B. W. CROWELL—Humboldt and Trinity counties.
D. W. KELLEHER—Merced, Fresno and San Benito.
A. C. KNOX—State of Nevada.
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Volunteer Testimonials of Those Who Have Used Booth's Exterminator.

CAMBRIA, Cal., August 5, 1879.

A R BOOTH.—*Dear Sir:* The case of your Squirrel Poison you sent us is good, and have given entire satisfaction. Our customers prefer it to any other. Will order more as soon as this is sold GRANT, LULL & Co.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James TYLER BEACH, Proprietor.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Jan. 18, 1882.

Trade is quiet. Wheat has held its own here, although the foreign market showed signs of weakness. The chance of a dry year now holds Wheat against all influences. Wheat charters are low. There is, however, but very little doing owing to the doubt which overhangs the market. The latest from abroad is as follows:

LIVERPOOL, Jan. 17.—Wheat: California spot lots are heavy, at 10s 5d@10s 9d. Cargo lots are easier, at 49s 6d for just shipped, and 50s 6d for off coast and nearly due. Arrivals of off coast are small. Weather in England is cool.

Freights and Charters.

British ship *Royal George*, 1,459 tons, wheat or flour to Liverpool or Dublin direct, £3 5s.

The Foreign Review.

LONDON, Jan. 17.—The Mark Lane *Express* in its review of the British grain trade for the past week, says: Trade is sluggish, farmers' deliveries are diminishing, and prices are likely to continue relatively good for round samples. The mildness of the season restricts the demand. Flour is firm; and the provincial markets have toned down and trade everywhere very quiet. Of foreign Breadstuffs on spot, sales were low and supply ample, while prices for fine qualities were fully maintained. There was a slight decline Friday in other sorts, but Flour was in sufficient quantity to meet the demand, and values were unchanged. Maize is quiet and values unchanged at 30s. Foreign Barley was unchanged; fine parcels sell readily. Oats, dull. The off-coast trade was quiet, nine cargoes having arrived, of which three were sold. The floating bulk is considerably increased, two-thirds of it from America. The sales of English wheat for the week amounted to 47 260 quarters, at 45s 5d per quarter, against 29,010 quarters at 42s 1d per quarter, for the corresponding week of last year.

Eastern Grain and Provision Market.

CHICAGO, Jan. 14.—Money flows into the city more rapid than it goes out, despite the increased drain for cattle and grain. Business generally maintains an even and pretty active tenor. The staples sold well with no ripple or noteworthy change in any article. On 'Change trading has dropped off to almost the minimum. The dealings are almost exclusively of a scalping nature, and prices varied only 1½c in Wheat all the week, 1½c in Corn, ⅞ in Oats, 47½ in Pork, and 20c in Lard. These fluctuations are small, even for the ordinary daily business, and no speculation can be expected so long as such steadiness prevails. Sales during the week for the February option were: Wheat, $1 28@$1 29½; Corn, 21½@25½c; Oats, 43⅞@44½c; Pork, $17.15@$17⅞; Lard, $11 10@$11.35. The closing was generally pretty weak.

CHICAGO, Jan. 17.—Wheat, active, firm and higher, at $1 28¼ cash, $1 28½@$1.28⅞ for Feb. Corn, easy, at 62½ cash, 60⅞ for Feb. Pork, firm and higher, at $17.87½ cash, $20 for Feb. Lard, firmer, at $11 cash, $11.05 for Feb. Short ribs, $8 70@$8 72½ cash, $8 72½@$8 75 for Feb.

Eastern Wool Markets.

BOSTON, Jan. 14.—There is a steady demand, and the market continues to sustain full prices. Business is largely in fine wools, and for them very extreme prices continue to be obtained. Sales of the week have been 2,275,000 lbs. of all kinds, and include X and XX fleeces at 43@45c, choice XX, 46@47½c, the latter an extreme price, although the tendency of all fine wools is upward; Michigan and Wisconsin X, 42@43c, and quite firm; No. 1 Michigan, Wisconsin and Ohio has been sold at 46@48c, with a steady demand. Combing and delaine fleeces are firm, with sales of selections at 46@50c. A lot of 20,000 lbs. Australia cross-bred sold at 47c. New wool and fine grade delaine and combing are firm. Coarse grades are neglected. Unwashed fleeces have been in demand at from 19@24c for coarse and low; 25@33c for fine; 25@37c for medium, including choice selections California Wool has been in fair demand. The most noticeable sale was a lot of 100,000 lbs. choice fall at 27c. Pulled Wools are firm, and supers range for 30@52½c, including No. 1 Texas, very choice, 50@52c. Foreign Wool has been quiet.

Eastern Wool Markets.

BOSTON, Jan. 17.—The market for wool is steady and firm, with a fair demand for all desirable grades. Holders are very indifferent about selling, unless full current rates are obtained. Sales of Ohio and Pennsylvania fleeces have been made at 43@45c for X, 44@46c for XX and XXX and above. Michigan and Wisconsin fleeces 42@46c for X, and firm. No. 1 washed fleeces have been sold for 46@48c. Michigan, Wisconsin and Ohio unwashed Wools are in steady demand, and prices firm. We quote low and coarse at 19@24c; fine, 15@33c; medium grades, 25@36c ₩ lb., with choice selections at higher prices. Combing and delaine selections are firm at 45@50c. Fine delaine and fine combing, coarse and medium and unwashed combing are quiet. California Wool is in demand at unchanged prices. Pulled Wools are firm, and prices have been well sustained. We quote choice supers at 45@52½c fair to good, 42@43c, and common 35@37c ₩ lb. Foreign Wool is firm, but has been quiet.

BAGS—There is nothing new in the Bag market.

BEANS—There has been some trade but prices have not changed excepting a rise in Pea and White to $4 to $4.05 ₩ ctl.

BARLEY—Barley has gone forward again. It is plain that all on hand will be called for, and holders are firm. We note sales: 200 sks coast brewing, $1 70, and 1,700 do dark coast feed at $1 62½.

CORN—Corn is strong and quiet, there being no immediate demand. Sales of Round Yellow have been made at $1.75 ₩ ctl.

DAIRY PRODUCE.—Butter is more abundant and lower, nothing but the fancy lots bringing 32½c. Cheese has gone to 18@20c, and there is little of it.

EGGS—Eggs are still cheaper as hens are getting down to business again. Prices 30@31c at present.

FEED—Hay begins to feel the chance of drouth and has advanced to $15 for the best. Ground Feeds are also sympathetic, the millers having advanced Cornmeal, Bran and Middlings, as shown in our list.

FRUIT—Choice Apples are scarce. Oranges are about the same as last week. California Lemons are doing better and some choice Limes are selling well.

FRESH MEAT—The Mutton corner is working. Prices are now higher for this meat than for years, having gone to 8½@9½c; the latter for "spring lamb." Beef is unchanged.

HOPS—There is no change here. The latest from New York by mail is the *Producers' Price Current* of Jan. 7:

The market has been quiet for a few days. Stocks here are light, and holders have generally strengthened their views, but the sales reported are still within range of last quotations. Brewers do not materially raise their bids, and the lots which have been offering at prices within their limits have been pretty much all taken off the market. Dealers will pay quotations where quality runs high for the price asked. Exporters are still forwarding goods moderately, though we hear of few sales to them here. The interior markets are reported quiet, with prices rather weak for actual business. Last London advices report a slow trade in medium and choice Hops, but a fair inquiry for lower grades.

OATS—Oats are still firmly held and rates are high, as shown in our list.

ONIONS—Unchanged.

POTATOES—Potatoes have been the sensation of the week, and are now way up; Petaluma and Tomales having gone to $2. Some Oregons came but are all sold. The report is that the country is short of "spuds."

PROVISIONS—The trade is quiet and steady, with a firm feeling, owing to the high price of hogs. Prices are unchanged.

POULTRY AND GAME—Turkeys are again down to 10@12½c per lb. Young Roosters sell well, but Fowls generally are a little easier.

VEGETABLES—There is no change.

WHEAT—Prices are the same as last week. About 1,000 tons No. 1 sold at $1.67½. There is but little doing

WOOL—There is nothing new in the market. Everything of fancy quality is said to have gone forward. Talk of a short spring clip, owing to the drouth, is now the chief work of the Wool dealers.

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., January 18, 1882.

FRUIT MARKET.		Peaches	— 11 @— 11½
Apples, bx	— 75 @ 2 00	do pared	— 14 @— 18
Bananas, bnch	2 50 @ 4 00	Pears, sliced	— 9 @— 9½
Cocoanuts, 100	6 00 @ 7 00	do whole	— 7 @— 8
Cranberries, bbl.	14 00 @16 00	Plums	— 5 @— 6
Limes, Mex	10 00 @12 00	Pitted	— 13 @— 14
do, Cal, box	— 75 @ 3 50	Prunes	— 9 @— 12½
Lemons, Cal, bx	1 50 @ 3 50	Raisins, Cal, bx.	— — @ 2 75
Sicily, box	6 50 @ 7 50	do, Halves	— — @ 3 00
Australian	— — @— —	do, Quarters	— — @ 3 25
Oranges, Cal, bx.	1 50 @ 5 00	Eighths	— — @ 3 50
do, Tahiti M	— — @— —	Zante Currants	— 8 @— 10
do, Mexican.	15 00 @20 00	**VEGETABLES.**	
do, Loreto	— — @— —	Artichokes, doz	— — @— 50
Pears, bx	— 75 @ 2 00	Beets, ctl	— — @— 65
Pineapples, doz	7 00 @ 8 00	Cabbage, 100 lbs	— 75 @ 1 00
DRIED FRUIT.		Carrots, sk	— 30 @— 50
Apples, sliced, lb	— 6 @— 6½	Cauliflower, doz	— 85 @ 1 00
do, quartered	— 5 @— 5½	Garlic, lb	— 1½@— 2
Apricots	— 15 @ — 17	Lettuce, doz	— 10 @— —
Blackberries	— 14 @— 16	Mushrooms, lb	— — @— 15
Citron	— 28 @— 30	Okra, lb	— 5 @— 8
Dates	— 9 @— 10	Parsnips, lb	— — @— [illegible]
Figs, pressed	— 4 @— 6	Squash, Marrow	
do, loose	— 3½@— 5	fat, ton	10 00 @12 00
Nectarines	— 14 @— 15	Turnips, ctl	— — @— 75

General Merchandise.

WHOLESALE.

WEDNESDAY M., January 18, 1882.

CANDLES.
Crystal Wax.....16 @18
Paraffine.....20 @—
Patent Sperm.....25 —28

CANNED GOODS.
Assrtd Pie Fruits.
2½ lb cans.....2 25
Table do.....3 50 @ —
Jams and Jellies.3 75 @ —
Pickles, hf gal....3 25 @ —
Sardines, qr box..1 67 @ —
Hf Boxes.....2 50½@1 90
Merry, Faull & Co.s
Preserved Beef
2lb, doz.....3 25 @3 —
do 4 lb doz.....6 50 @6 —
Preserved Mutton
2 lb. doz.....3 25 @3 50
Beef Tongue.....5 75 @6 00
Preserved Ham,
2 lb. doz.....5 50 @5 60
Deviled Ham, 1 lb.
doz.....3 00 @3 50
do Ham ½ lb doz 2 50 @ —
Boneless Pigs Feet
3lbs.....3 50 @3 75
2 lbs.....2 75 @ —
Spiced Fillets 2 lbs3 50 @ —
Head Cheese3 lbs.3 50 @ —

COAL—Jobbing.
Australian, ton. — @ 8 50
Coos Bay..... 6 50 @ 7 50
Bellingham Bay — @ —
Seattle ..... 7 00 @ —
Cumberland.... — @13 00
Mt Diablo..... — @ —
Lehigh ..... — @ —
Liverpool..... — @ —
West Hartley.. — @ 9 00
Scotch..... — @ 8 50
Scranton..... — @ —
Vancouver Id.... — @ —
Wellington..... — @ 9 00
Charcoal, sack.. — @ —
Coke, bush ..... — @ —

COFFEE.
Sandwich Id lb. — @ —
Costa Rica ..... 12 @ 14
Guatemala..... 12 @ 14
Java..... 18 @ 20
Manilla..... 15 @ —
Ground, in cs.... — @ 22½

FISH.
Sac'to Dry Cod.— — @ — 5
do in cases..— — @ — 5½
Eastern Cod...— 7 @ — 7½
Salmon, bbls... 7 00 @ 7 50
Hf bbls..... 3 50 @ 4 00
1 lb cans..... 1 12½@ 1 22½
Pkld Cod, bbls.— — @ — —
Hf bbls..... — — @ — —
Mackerel, No. 1
Hf bbls..... 9 50 @ 10 00
In Kits..... 1 75 @ 1 85
Ex Mess..... 3 50 @ 4 00
Pickled Herring,
box..... 3 00 @ 3 50
Boston Smoked
Herring..... 65 @ — 70

LIME, etc.
Plaster, Golden
Gate Mills.... 3 00 @ 3 25
Land Plaster,
ton.....10 00 @ 12 50
Lime, Santa Cruz
bbl..... 1 25 @ 1 50
Cement, Rosendale..... 1 75 @ 2 00
Portland..... 3 75 @ 4 00

NAILS.
Assrtd sizes, keg.3 75 @ 4 00

OILS.
Pacific Glue Co's
Neatsfoot, No.1.1 00 @1 00
Castor, No. 1..... — @1 05
do, No. 2..... — @ 95
Baker's A A ..... — @1 30
Olive, Plagnoll...5 25 @5 75
Possel.....4 75 @5 25
Palm, lb ..... 9 @ —
Linseed, Raw, bbl — @ 60
Boiled..... — @ 65
Cocoanut..... 60 @ —
China nut, cs..... 68 @ 69
Sperm.....1 40 @ —
Coast Whales..... 35 @ —
Polar..... — @ —
Lard..... — @1 00
Petroleum (110°).. 18 @ 22
Petroleum (150°).. 28 @ 35

PAINTS.
Pure White Lead. 7¾@ 8
Whiting..... 1½@ —
Putty..... 4 @ 5
Chalk..... 1½@ —
Paris White..... 2½@ —
Ochre..... 3½@ —
Venetian Red.... 3½@ —
Averil mixd Paint
gal
White & Tints..2 00 @2 00
Green, Blue and
Ch Yellow.....3 00 @3 50
Light Red.....3 00 @3 50
Metallic Roof ..1 30 @1 60

RICE.
China Mixed, lb.. 4¾@ 5
Hawaiian..... 4⅝@ 5

SALT.
Cal. Bay, ton...14 00 @22 00
Common..... 6 50 @14 00
Carmen Id.....14 00 @22 00
Liverpool fine...14 00 @20 00

SOAP.
Castile, lb..... 9 @ 10
Common brands.. 4½@ 6
Fancy Brands.... 7 @ 8

SPICES.
Cloves, lb ..... 37½@ 40
Cassia..... 19 @ 20
Nutmegs ..... 85 @ 90
Pepper Grain..... 15 @ 16
Pimento ..... 16 @ 17
Mustard, Cal ½ lb
Glass..... — @1 25

SUGAR, ETC.
Cal. Cube lb ..... — @ 12½
Powdered..... — @ 12¾
Fine Crushed..... — @ 12½
Granulated..... — @ 11¾
Golden C..... — @ 11½
Cal Syrup, kgs.... 65 @ —
Hawaiian Mol'sses 25 @ 30

TEA.
Young Hyson,
Moyune, etc.... 40 @ 65
Country pkd Gunpowder & Imperial..... 35 @ 75
Hyson ..... 30 @ 35½
Fooo-Chow O..... 27½@ 32
Japan, medium... 35 @ 37½

Leather.

[WHOLESALE.]

WEDNESDAY, M., January 18, 1882.

Sole Leather, heavy, lb..... 30 @ 32
Light..... 25 @ 28
Jodot, 8 to 10 Kil., doz.....36 00 @48 00
11 to 13 Kil.....50 00 @60 00
14 to 16 Kil.....65 00 @72 00
Second Choice, 11 to 16 Kil.....40 00 @65 00
Simon Ullmo, Females, 12 to 13 Kil.....52 00 @56 00
11 to 15 Kil.....60 00 @64 00
16 to 17 Kil.....66 00 @68 00
Simon, 18 Kil..... — — @57 00
20 Kil..... — — @60 00
24 Kil..... — — @65 00
Kips, French, lb..... — 85 @ 1 20
Cal, doz..... 55 00 @60 00
French Sheep, all colors.....12 00 @15 00
Eastern Calf for Backs, lb..... 1 00 @ 1 25
Sheep Roans for Topping, all colors, doz..... 9 00 @10 00
For linings..... 6 50 @10 00
Cal. Russet Sheep Linings..... 3 00 @ 5 50
Boot Legs, French Calf, pair..... — — @ 4 50
Good French Calf..... — — @ 4 00
Best Jodot Calf..... 4 75 @ 5 00
Leather, Harness, lb..... 35 @ 40
Fair Bridle, doz.....45 00 @66 00
Skirting, lb..... 33 @ 37
Welt, doz.....30 00 @36 00
Buff, ft..... 17 @ 20
Wax Side..... 19 @ 20

Retail Groceries, Etc.

WEDNESDAY M. January 18, 1882.

Butter, California
Choice, lb..... 45 @ 55
Cheese..... 17 @ 25
Eastern ..... 25 @ 30
Lard, Cal..... — @ 18
Eastern ..... 20 @ 25
Flour, ex.fm,bbl..8 00 @9 00
Corn Meal, lb .... 2½@ 3
Sugar, wh crushd. 12½@ 13½
Light Brown... 8 @ 9½
Coffee, Green .... 23 @ 35
Tea, Fine Black.. 50 @1 00
Finest Japan... 55 @1 00
Candles, Adm'te.. 15 @ 25
Soap, Cal..... 7 @ 10
Rice..... 8 @ 10
Yeast Powdr, doz.1 50 @2 00
Can Oysters, doz.2 00 @3 00
Syrup S F &old'n. 75 @1 10
Dried Apples, lb.. 10 @ 15
Ger. Prunes.... 12½@ 20
Figs, Cal..... 9 @ 10
Peaches ..... 15 @ 25
Oils, Kerosene.... 50 @ 60
Wines, Old Port..3 50 @5 00
French Claret....1 00 @2 50
Cal. doz bot....2 00 @4 50
Whisky, O K, gal 3 50 @5 00
French Brandy...4 00 @8 00

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., January 18, 1882.

Eng Standrd Wheat.. 8¾@ 9
Cal Manufacture.....
Hand Sewed, 22x36. 8¾@ 9
20x36..... 8½@ 8¾
23x10.....12 @13
24x10.....12½@13½
Machine Swd 22x36. 8¼@ 9
Flour Sks, halves..... 9½@10¾
Quarters..... 6 @ 6¾
Eighths..... 4½@ 4½
Hessian, 60 inch.....— @12
45 inch..... 9½@ 9½
40 inch..... 8¼@ 8¾
Wool Sks Hand Swd
3½ lb.....— @47
4 lb do.....52½@55
Machine Sewed.....— @49½
Standard Gunnies....18½@19
Bean Bags..... 6½@ 7
Twine, Detrick's A...32½@35
" " AA.35 @37

Signal Service Meteorological Report.

SAN FRANCISCO.—Week ending January 17, 1882.

HIGHEST AND LOWEST BAROMETER.

Jan. 11	Jan. 12	Jan. 13	Jan. 14	Jan. 15	Jan. 16	Jan. 17
30.319	30.037	30.009	30.087	30.030	30.328	30 380
30.037	29.953	29.894	29 923	29 840	29 930	30.249

MAXIMUM AND MINIMUM THERMOMETER.

50	48	51	50	50	55	52
43	41.5	40	41	39.5	45	42

MEAN DAILY HUMIDITY.

M	30	35	43	78.7	43	81.3

PREVAILING WIND.

NW	N	N	N	N	SE	W

WIND—MILES TRAVELED.

376	490	415	139	98	207	139

STATE OF WEATHER.

Fair.	Clear.	Clear.	Clear.	Clear.	Clear.	Clear.

RAINFALL IN TWENTY-FOUR HOURS.

Total rain during the season, from July 1, 1881, 7.01 inches.

Domestic Produce.

WHOLESALE.

WEDNESDAY M., January 18, 1882.

BEANS & PEAS.
Bayo, ctl.....1 75 @2 25
Butter.....3 00 @3 25
Castor.....3 50 @4 00
Pea .....4 00 @4 05
Red .....1 75 @1 85
Pink .....1 75 @1 85
Large White.....3 00 @3 25
Small White.....4 00 @4 05
Lima..... — @4 00
Field Peas,b'lk eyel 50 @1 75
do, green..2 00 @2 25

BROOM CORN.
Southern..... 3 @ 3½
Northern..... 4 @ 6

CHICCORY.
California..... 4 @ 4½
German..... 6½@ 7

DAIRY PRODUCE, ETC.
BUTTER.
Cal. Fresh Roll, lb. 29 @ 30
do Fancy Brands. — @ 32½
Pickle Roll..... 25 @ 27½
Firkin, new..... 25 @ 26
Eastern..... 20 @ 25
New York..... — @ —
CHEESE.
Cheese, Cal., lb... 18 @ 20
EGGS.
Cal. Fresh, doz... 31 @ 33
Ducks ..... — @ 30
Oregon ..... — @ 30
Eastern, by expr'ss — @ 27½
Pickled here..... — @ —
Utah ..... — @ 30

FEED.
Bran, ton..... — — @18 00
Corn Meal..... — — @37 00
Hay.....10 00 @15 00
Middlings ..... — — @27 00
Oil Cake Meal.. — — @25 00
Straw, bale..... — 62½@— 67½

FLOUR.
Extra, City Mills..5 25 @5 62½
do, Co'ntry Mills.4 75 @5 00
do, Oregon .....4 75 @5 12½
do, Walla Walla.4 50 @5 00
Superfine.....3 50 @4 25

FRESH MEAT.
Beef, 1st qual'y, lb. 6½@ 8
Second ..... 5½@ 6¾
Third..... 4 @ 4½
Mutton..... 8 @ 8½
Spring Lamb..... 9 @ 9½
Pork, undressed.. 5¾@ 6⅞
Dressed..... 9 @ 9½
Veal..... 6½@ 7½
Milk Calves..... 7½@ 8
do, choice..... — @ 8½

GRAIN, ETC.
Barley, feed, ctl..1 65 @1 67½
do, Brewing..1 70 @1 75
Chevalier.....1 65 @1 70
do, Coast ..1 50 @1 60
Buckwheat..... — @1 50
Corn, White.....1 65 @1 75
Yellow.....1 65 @1 75
Small Round....1 65 @1 75
Oats.....1 70 @1 77½
Milling.....1 80 @1 90
Rye .....2 00 @2 12½
Wheat, No. 1.....1 67½@1 70
do, No. 2.....1 60 @1 65
do, No. 3.....1 45 @1 50
Choice Milling.. — @1 70

HIDES.
Hides, dry..... — @ 18
Wet salted..... 9½@ 11

HONEY, ETC.
Beeswax, lb..... 23 @ 25
Honey in comb... 15 @ 20
Extracted, light.. 9 @ 10
do, dark .. 7½@ 9

HOPS.
Oregon..... 20 @ 21
California, new... 25 @ 27½
Wash. Ter..... 23 @ 24
Old Hops..... — @ —

NUTS—Jobbing.
Walnuts, Cal..... 10 @ 11
do, Chile .... 7½@ 8
Almonds, hd shl lb 8 @ 10
Soft shell..... 14 @ 15
Brazil ..... 10 @ 11
Pecans ..... 13 @ 15
Peanuts..... 6 @ 6½
Filberts..... 14 @ 15

ONIONS.
Red..... — @ —
Silver skin..... 60 @ 85
Oregon..... — @ —

POTATOES.
Early Rose.....1 35 @1 50
Petaluma, ctl.....1 75 @2 00
Tomales.....1 67 @2 00
Humboldt..... — @ —
" Kidney..... — @ —
" Peachblow.. — @ —
Jersey Blue ..... — @ —
Cuffey Cove..... — @ —
River, red..... — @1 50
Chile..... — @ —
do, Oregon..... — @ —
Sweet .....1 00 @1 25

POULTRY & GAME.
Hens, doz.....5 00 @ 7 00
Roosters.....4 00 @ 7 50
Broilers .....4 00 @ 6 50
Ducks, tame, doz.6 00 @ 7 50
Mallard ..... — @ 3 00
Sprig .....1 50 @ 1 75
Teal..... 75 @ 1 00
Widgeon.....1 00 @1 12½
Geese, pair.....1 75 @2 00
Wild Gray, doz.2 00 @2 50
White do..... — @1 50
Turkeys..... 10 @ 12
do, Dressed.... 10 @ 12½
Turkey Feathers,
tail and wing, lb. 10 @ 20
Snipe, Eng.....2 00 @2 25
do, Common.. 50 @ 75
Quail, doz.....1 00 @1 25
Rabbits.....1 00 @1 50
Hare .....2 00 @2 25
Venison..... 5 @ 7

PROVISIONS.
Cal. Bacon, extra
clear, lb..... 13 @ 13½
Medium..... 12 @ 13½
Light..... 13 @ 14
Lard..... 13 @ 17
Cal. Smoked Beef. 11½@ 12½
Shoulders ..... 9½@ 10½
Hams, Cal..... 12½@ 13½
Dupee's ..... 16 @ 16½
Whittaker..... 16 @ 16½
Royal ..... 16 @ 16½
Stewart..... 16 @ 16½
Eastlake..... 16 @ 16½

SEEDS.
Alfalfa ..... 12 @ 13
do Chile..... — @ —
Canary..... 3½@ 4
Clover, Red..... 14 @ 15
White..... 45 @ 50
Cotton..... — @ 20
Flaxseed ..... 2½@ 3½
Hemp ..... — @ 5
Italian Rye Grass.. 25 @ —
Perennial..... 25 @ —
Millet, German.... 10 @ 12
do, Common... 7 @ 10
Mustard, White... 1½@ 2¾
Brown..... 2½@ 3
Rape..... 2½@ 2¾
Ky Blue Grass..... 20 @ 25
2d quality..... 16 @ 18
Sweet V Grass..... — @ 75
Orchard ..... 20 @ 25
Red Top..... — @ 15
Hungarian..... 8 @ 10
Lawn..... 30 @ 40
Mesquit..... 10 @ 12
Timothy..... 9 @ 10

TALLOW.
Crude, lb..... 6 @ 6½
Refined..... 9½@ 10

WOOL, ETC.
FALL—1881.
San Joaquin..... 9 @ 14
do, Lamb.... 13 @ 15
Southern Fall..... 9 @ 12
do lambs'.... 13 @ 14
Northern, free.... 16 @ 20
do, defective.. 14 @ 16
Mountain, free.... 16 @ 18
do, slightly seedy. 13 @ 15
Humboldt & Mendocino ..... 18 @ 21

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1882.

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For the half year ending December 31st, 1881, the Board of Directors of THE GERMAN SAVINGS AND LOAN SOCIETY has declared a dividend on Term Deposits at the rate of Five (5) per cent. per annum, and on Ordinary Deposits at the rate of four and one-sixth (4 1 6) per cent. per annum, free from Federal Taxes, and payable on and after the 9th day of January, 1882 By order,

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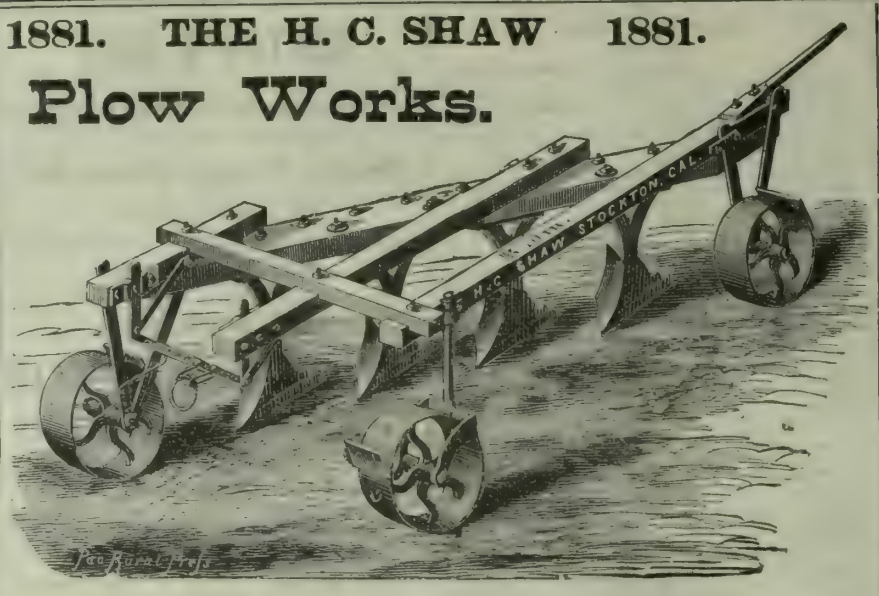

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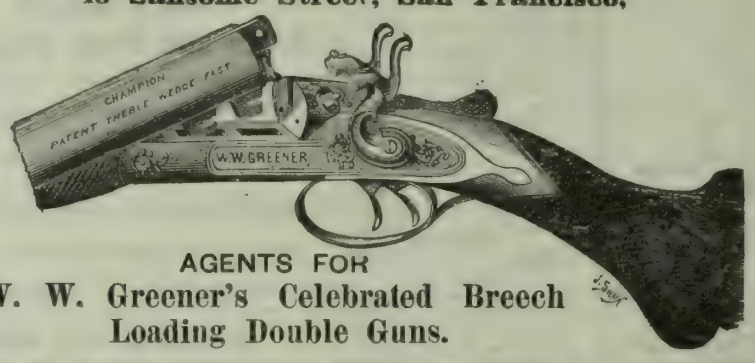

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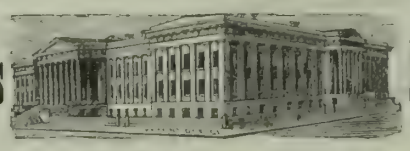
Scientific Press  Patent Agency.

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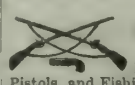

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Insect Destroyer

AN IMPORTANT INVENTION

[From a Stockton Paper].

Nicholas Vizelich had his Insect Destroyer on exhibition to-day in Courthouse square before a crowd of admiring farmers. The Destroyer is a box shaped structure, five feet wide, and mounted on wheels. The machine is supplied with two force pumps, one forward and the other aft, with a small smoke-stack in the middle. The liquid with which the scale bugs and the phylloxera are vanquished is a composition specially prepared by Mr. Vizelich, and is stored within the box. In a compartment underneath the liquid is a furnace for heating it so as to melt the frost off the trees and thereby get at the bugs and insects. An additional supply of the liquid may be carried in a barrel mounted on wheels. With the pump the water may be sent through a garden hose to a height of upwards of 50 ft. Mr. Vizelich gave partial illustrations of the working of his invention to-day in the square, and threw a stream to the top of the cedars holding the hose in one hand and working the pump with the other. The new invention worked excellently, and the farmers who watched it operate said that it would not be many months before every orchard and farm in the country would have one of Vizelich's Insect Destroyers. They can be manufactured of any size, from those designed to be worked by one man to a machine large enough to be worked to advantage by a dozen men. The warm liquid runs into the crevices in the bark of the trees and dislodges and kills the vermin.

"VIZELICH'S DESTROYER" will be made in three sizes—one of 65, one of 125 and one of 500 gallons for field use.

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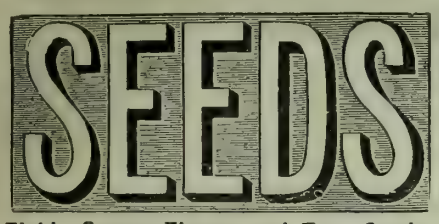

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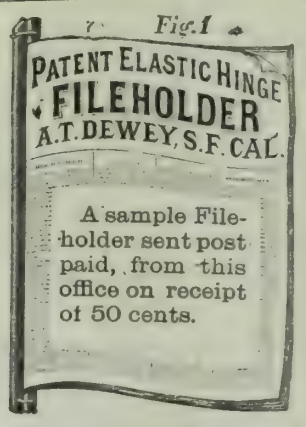
Fig. 1



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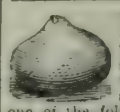
SAN JOSE, CALIFORNIA.



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PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, JANUARY 28, 1882. Number 4

The Duroc Swine.

The breeding of Duroc Swine by Hincley & Getchell, of Laurelles ranch in Monterey county, makes the characteristics of this breed a local question. Thus far, the Berkshire has far outnumbered any of the improved breeds in this State; in short, it has been well nigh all Berkshire excepting the scrub stock of the State. There have been, it is true, during the last few years, some most excellent Poland Chinas imported and bred, and the increase distributed. The success with this breed thus far has shown that it is excellently adapted to California conditions, and its numbers will be largely increased henceforth. There are also a few Essex swine here, but this breed has not yet reached the importance it merits; and there are small numbers of other breeds of hogs scattered here and there, some bred well, others merged in the common blood and lost sight of.

In the future there will be much more attention paid to the improvement of hogs than hitherto. Many are but just beginning to appreciate the advantage of the improved breeds. They have always known that a small hog is what our markets require, and this has rather set them at first against the improved breeds, because the accounts have usually dwelt at length upon the great size attained by them. They seemed to overlook the fact that the improved breeds attained size quickly, and that their young ones could be sold off whenever they reached marketable size, and thus the hog crop could be reaped much sooner than by using the scrub stock. The advantage of a hog which matures quickly, and makes the best possible use of the feed, is now much more generally recognized than formerly.

But we began to speak more especially of the Durocs. This breed is attaining considerable prominence at the East, and the issue between them and the Berkshires is being urged. One of the writers in the Chicago *Breeders' Gazette* spoke slightingly of the Durocs, and the result was a flood of correspondence from Duroc breeders upholding the quality of their breed. As the points of the Duroc will now enter into California hog gossip, we have thought it timely to bring forward some of the claims made for them. One writer says:

They have remarkable vitality, and endure heat or cold as well or better than other breeds. They are becoming noted for the large proportion of lean meat, and the firmness of their flesh. As a consequence they weigh heavy in proportion to their looks, and drovers have, time and again, had them re-weighed, thinking there must have been a mistake. This firmness of muscle causes them to endure shipment well. Eastern buyers appreciate them, and say when they start a Duroc for the East they know he will go through all right, but they are never sure of a black hog.

As compared with the Berkshire, their most prominent point of excellence is their mild, quiet disposition, which is a great benefit while nursing and while feeding. The nervous hog, it is well known, worries off and fails to assimilate and utilize half the nutriment he consumes. While the Duroc is remarkable for uniformity of gain, the Berkshire fattens rapidly for a while, but often comes to a standstill, and may be fed for a month without appreciable gain.

As compared with the Poland: 1st, they excel them in hardiness; 2d, in being prolific, and good nurses; 3d, in uniformity of size of litters; 4th, in prepotency, showing an old-established breed and not so liable to deterioration; 5th, while we claim superiority, in the four points mentioned, we claim possible superiority, and at least equality, in *early maturity*.

We ought to have much more pig literature in the RURAL. The making of pork is a large item in the agricultural economy of California. Our cured meat products are continually increasing in amount and excellence. There is no State in the Union where hogs are healthier or are kept upon a system which has so many sound hygienic points. Therefore let us talk of the pig. Send us your experience with any of the breeds and with any way of feeding them. We must have pigs even if it be to feed the hated Chinamen and to eat up the wormy fruit.

The Produce of an Orchard.

Every effort should be made to secure for public use accurate statistics of the horticulture of California. There are now and then put forth vague estimates, based upon very slim data. Such statistics are very apt to mislead. If we could have reports from a hundred or more orchards in different parts of the State of the yield per tree, or per acre, of the different fruits, there could be had a much more trustworthy idea of the prospects of return from tree planting than can now be formed.

We should like very much to have our fruit-growing readers send us transcripts from their account books, giving the amount of each kind of fruit marketed during a specified season, the number of trees of each variety in bearing, and the cost of gathering and marketing, and the cultivation of the orchard, as near as may be. If our readers would do this there would be something on record well worth careful study and preservation for reference. Who will send reports?

We may illustrate the interest which would pertain to accounts of this kind by giving an outline of a report given to the Chico *Enterprise* by G. M. Gray, the superintendent of the famous Rancho Chico of Gen. Bidwell. The following are the amounts of fruit and the numbers of trees in bearing:

	Lbs.	No. Trees.
Peaches	980,000	6,000
Plums	359,091	1,500
Grapes	268,020	45,000
Apples	153,871	2,000
Cider Apples	106,000	.....
Apricots	19,520	900
Pears	48,916	1,000
Cherries	43,034	1,675
Blackberries	39,288	.....
Strawberries	686	.....
Figs	323	50
Almonds	57,288	2,000
English Walnuts	456	.....
California Black Walnuts	1,000	.....
Pomegranates	200	.....
Quince	500	60
Total yield	2,078,695	

Besides the above number of trees here enumerated, there are 3,000 young peach, 1,000 plum, 1,000 apples, 300 apricot and 250 pears not bearing. One cherry tree yielded 900 lbs. One carload of plums sent to San Francisco weighed (gross) 15 tons 150 lbs. Fully half of the nuts and raisins sold at San Francisco were sent by boats, as it was impossible to get cars. R. S. Middleham, the fruit dealer of Chico, handled a large portion of the green fruit in about the following proportion: Peaches $\frac{1}{4}$, plums $\frac{1}{5}$, grapes $\frac{1}{4}$, apples $\frac{1}{4}$, apricots $\frac{1}{4}$, pears $\frac{1}{2}$, cherries $\frac{3}{4}$, and strawberries $\frac{3}{4}$. Ten thousand grape cuttings have been sent out this season to various parts of the State.

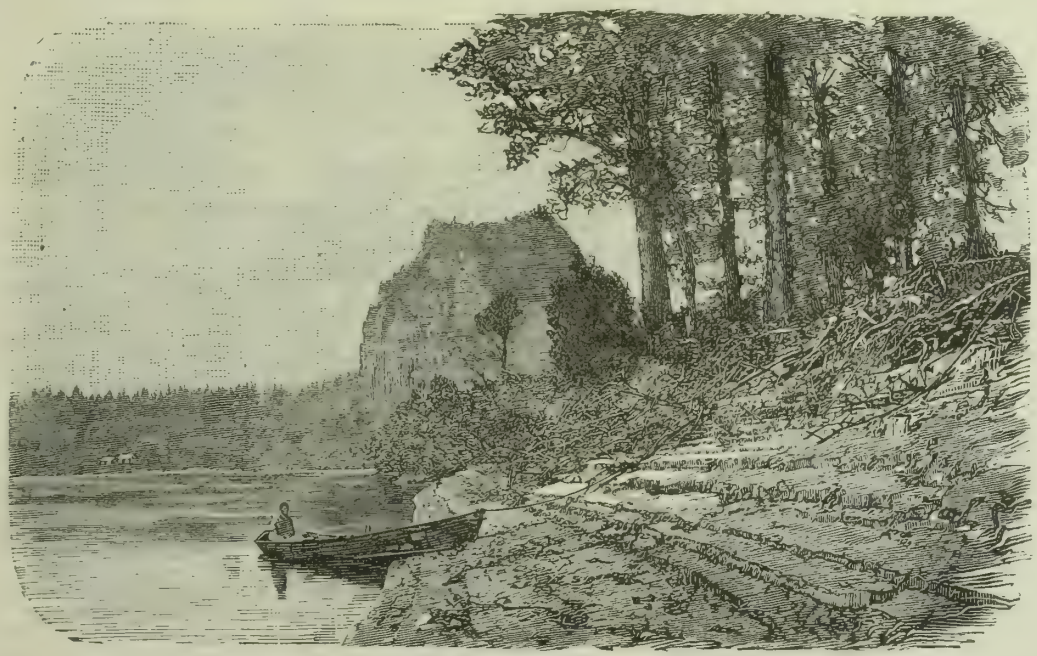
In commenting on the foregoing the *Enterprise* says: "This is the best year the Rancho Chico orchard has ever had, and a great deal has depended upon the management. Mr. Gray is a faithful worker, takes pleasure in all he does, and has a peculiar faculty of inspiring the same spirit into those under him, and by this means a great amount of work is accomplished."

SNOW-STOPPED DITCHES.—Semi-tropical climates are noted the world over for the infinite variety of their meteorological phenomena. Southern California in her wealth of surprises this year, is but following in the wake of other favored regions. The large percentage of the balmy and the beautiful, must have the small percentage of the disagreeable to round out the circle of the year. This year's snows are an almost unending topic for comment. In this issue may be found some interesting notes from our Pasadena contributor, Mrs. Carr, full of the poetry as well as the prose of the occasions. One of the other prosy events was the temporary stoppage of the irrigating ditches by snow dams. This occurred at Riverside, and some overflows resulted. At Anaheim similar experiences are thus described by the *Gazette*: "The most vivid imagination and greatest foresight would never have ventured to predict that among the difficulties attending the management of irrigating ditches in southern California would be the stopping of the water by a gorge of snow. But it so happened. There were three large heads of water flowing in the ditch on Thursday, and it came uninterruptedly until about Friday noon. It then stopped, and on the Zanjero proceeding to investigate, he found a snow blockade in the ditch about a mile east of town. The snow had floated down the ditch in large balls, the water being too cold to melt it, and so rapidly did it accumulate that before the water could be shut off nearly two miles of ditch was filled up with the hardened snow. The blockade continued from Friday until Monday, at which time the snow had melted sufficiently to permit the water to flow. The Cajon ditch and the Orange ditch had a similar experience, and it is said that a break of some magnitude occurred in the latter ditch in consequence."

THE Society for the Prevention of Cruelty to Animals, since its last monthly meeting, has investigated 63 cases of cruelty, prosecuted 19, and remedied 44. Among them was a case of overcrowding poultry in crates.

A Scene on the Columbia.

We give our readers this week another glimpse of the enchanting scenery of the Columbia, the majestic river of our northwestern region. Along the northern line on the Columbia river, says a writer in the *Resources of Oregon and Washington*, may be found some of the grandest scenery in the known world. It is here that we find solemn old Castle Rock, nestled among the willows and dogwood of Washington Territory, covering 13 acres of land and towering above the water's edge for over 800 ft. It is the property of Jay Cooke, of New York city, and doubtless excites a feeling of pride within him as he looks back through the veil of the past, and as memory joins hands with imagination, he sees coming generations pass up and down the Columbia—this great thoroughfare of the west—and Castle Rock is accorded the pride and admiration of a great nation. Not only is it grand of itself, but it is in the midst of scenery most sublime. Above it are the lower rapids of the Columbia, seething, whirling and boiling as the water comes rushing over the rocks. Below it stands the symmetrical Rooster Rock, standing alone and reaching above the water's edge for three hundred ft. Below this, Lower Cape Horn stands boldly out in the river, and presents an unbroken front of basalt three hundred ft. high, worn by the ever dripping streams of water until the grooves and hollows present a scene both picturesque and sublime.



CASTLE ROCK, NEAR THE COLUMBIA RIVER.

This is but a slight glimpse of the grandeur of the Columbia, as the scene is nestled among the great mountains and rugged surroundings in the Cascades. By way of variety, and attractions added to a scene already unsurpassed, Nature has kindly placed along the shore numerous waterfalls of remarkable beauty, principal among which may be mentioned Multnomah, falling a distance of 800 ft.

The time was, and in the memory of our fathers, when no land was so distant, so forsaken as this. Bryant, in casting about for an example of utter desolation, exclaimed:

"Take the wings
Of morning, pierce the Barcan wilderness,
Or lose thyself in the continuous woods
Where rolls the Oregon, and knows no sound
Save his own dashing."

Now, however, the deathly stillness that once reigned supreme, is broken by the noise and clangor of busy craft hurrying from point to point in the interest of commerce, while along the shores hundreds of men are blasting and drilling, preparing a course for the iron horse, that in so few months will be speeding away for the Eastern States from Portland, Oregon, to Portland, Maine.

PACIFIC COAST FERNS.—We have seen a copy of a well-printed pamphlet entitled the "Ferns of the Pacific Coast," by the well-known botanist, J. G. Lemmon, of the "Lemmon Herbarium," Oakland, Cal. It contains a full conspectus of tribes and genera, together with a classified list of the species, giving the principal points of distinction and localities of growth, also the common as well as the botanical name, wherever it is possible. The publication will no doubt be found of incalculable value to all who are collecting and studying ferns. It is sold, we believe, for 35 cents per copy.

TO CONTRIBUTORS.—We return thanks to many of our contributors who have recently assured us of their good wishes and their intention to continue to aid us in the advancement of our journal. We feel sincerely grateful to those who give us so freely of their thoughts and their experiences upon the thousand subjects which arise from week to week.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Humboldt County Notes.

EDITORS PRESS:—I do not know why it is that your correspondence from this county is so scanty, for I am sure farmers are as intelligent here as elsewhere, and I suppose that any bit of news from this far off region would be and is as acceptable to you as from other regions, and would be a help to make the PRESS perfect in all its parts. I cannot attribute the silence of our farmers to any other cause than their extreme modesty. I think if you will encourage us a little by inviting, persuading or blarneying, or any other way your fertile brain may devise, you might possibly stir up our latent talent, and by and by we might astonish ourselves that our abilities had not bubbled up and over long before. But it is never too late to do well or as well as we can, I suppose, and you may suppose that the above is sufficiently lengthy for a prelude, and I will at once proceed to give your readers some idea of what we are doing and going to do in this almost tail-end of the universe—at least it will be considered such by a great many until the iron horse runs into us at some point. I do not much care whether east, west, north or south, so long as it comes; and indeed, it is questionable whether it will come at all, as there are no broad acres of valuable land along its borders or the borders where it would run, to be gobbled up by the insatiable maw of railroad monopolists; and so far the people of this county have not been befogged enough by their worthy representatives to put their hands in their pockets to subsidize or pay a railroad company for making a road into and through our county. A few years ago we were very nearly entrapped by what was called a small amount ($75,000), to enable a company to make a few miles of railroad, so that said company could tap quite a body of redwood timber, so that they would become richer. They probably came to the conclusion that the satisfaction the people who gave the money would have in seeing the redwood and railroad men becoming rich, would be interest enough for the money invested in such a worthy enterprise as running a railroad from a given point to some other given point in the redwoods, for the whole and sole benefit of those interested in the railroad and redwood timber owned by said parties. But when the very plausible subsidy bill went to the Governor for his signature to make it a law, Gov. Irwin very wisely refused to sign it. He saved us from appropriating $75,000 to make the rich man richer and the poor man poorer, and I honor him for it.

Our Industries

If we cannot have a railroad, we can have good crops and give plenty of employment to those who are willing to work for fair wages. I believe all our lumbering interests show a flattering front. Lumber meets a good demand, with good prices at home and abroad, which always makes money plenty with us, as it is the largest industry of the county at present, and gives more employment, with more money invested, directly and indirectly, than any other industry in the county, and will be for years to come.

Next is our stock and dairy interest, which never was in a more healthy condition since my sojourn in the county (over 25 years). I never saw stock this season of the year in better order, grass never was better except when the range has been overstocked, which is very seldom the case. We have had rain enough, with little or no cold weather, which keeps the grass growing, and we have now better grass than I have seen in March or April, so that if dairymen do not do well this year it will not be for want of good grass, etc.

Our farming interests are limited when compared to other places, yet we have some fair-sized farms in the county, which range from 40 to 230 acres under cultivation. I had occasion not long ago to visit what we call the Island district. It lies west of Eel river. There are some beautiful farms on it; one in particular, a Mr. Boyanton's. He has between 230 and 240 acres under cultivation. I went with him into a field of 130 acres where he had three five-horse gang-plows at work, which was a beautiful sight for me. He was going to put in wheat principally. I think he told me his wheat crop averaged 40 bushels to the acre last year, which was not a good year for Humboldt.

There appears to be more thrift manifested among our farmers than usual. Many are getting improvements on their farms, better buildings, fences, farming implements and better stock; in fact, we are beginning to feel the effects of the good times that pervade the whole country, and now is the time to begin to prepare for a reaction. I was told the other day, by a merchant, that now nearly every one has a little surplus money on hand, to let out at a low rate of interest. Some farms have changed hands, within a few months, at advanced prices to what they would have brought a year ago. Business of all kinds has an upward tendency, consequently everybody has a more cheerful aspect, and our future, as a whole, looks well. It is true, we do not know what a day may bring forth, in this California of ours. We have passed the crisis of the Mother Shipton prophecy, with no unusual change, except unparallelled grass weather, which is not at all unwelcome to the dairyman, and nobody else in particular. This is more of a spring day with us than a winter. Hoping that the year will end as well as it has begun, I will drop the subject for the present, and wish everybody a Happy New Year, if it is not too late.

RICHARD JOHNSTON.

Bear River, Humboldt Co., Cal.

[We always hail with pleasure a note of agricultural news from the northern tier of counties. The upper region is too little heard of. We have good lists of subscribers in the regions named, but they do not send one-tenth of the information of their doings we would like to have. Let every northern reader follow Mr. Johnston's example, and send us such an interesting budget of news.—EDS. PRESS.]

Pleasants' Valley.

EDITORS PRESS:—For the benefit of all whom it may concern, and by your permission, I will give you a short history of the first settlement, and also the correct name of this little valley. In November, 1850, my father, James M. Pleasants, and myself, left Feather river, where we had been working in the gold mines since October, 1849, and footed it to Sacramento city, where we bought a pack horse and some provisions, having also provided ourselves with guns and ammunition. On December 31 we left the city, crossing the Sacramento, then a beautiful, clear and deep river, and proceeded in a westerly direction, crossing the tule, then dry, coming to the sink or mouth of Putah creek, up which stream we traveled about 20 miles, arriving at the mouth of the canyon, through which Putah creek flows from the Coast Range mountains. At this point we left Putah and traveled southward about three miles and came into this beautiful valley, Dec. 7th, 1850.

This valley is situated on a small stream flowing into Putah creek; is bounded on the west by the Coast Range mountains, on the south by Vaca valley, on the north and east by a low range of hills which gradually slope off to the Sacramento plains. It is about four miles long by one-fourth to half a mile wide. Soon after our arrival in this valley, my brother, J. E. Pleasants, now a resident of Los Angeles county, came from the mines and joined our party, making three of us. As we were the first settlers, and as the valley had no name, we gave it our own name, "Pleasants." During the summer of 1851, the valley, outside of our three claims, was all taken up. Mr. M. R. Miller, now a resident of this valley, being one who settled here that year.

This valley, now so famous as a fruit growing district, was once the home of vast herds of wild animals, such as elk, deer, grizzly bear, California lions and wolves. I have counted 100 deer in a short day's hunt. One afternoon I saw 11 grizzly bears within two miles travel, and within one mile of this valley. It is useless to say that we killed both deer and bear whenever we pleased. The largest grizzly we ever killed weighed when dressed, 800 pounds.

In conclusion, I will say that I still have in my possession the first plow that ever ran a furrow in this valley, which was in 1851.

W. J. PLEASANTS.

Pleasant's Valley, Solano Co., Jan. 19, 1882

Fruit East and West.

EDITORS PRESS:—How strangely it sounds to the fruit-hungry millions this side of the continent to read that your luscious grapes are sold for *$20 to $25 per ton*, when here they cannot be had for 30 to 50 cents per lb.; that the delicious Bartletts are worth 2 to 5 cents per lb., plums, figs and apricots the same, and oranges not worth gathering—this, too, with a fruit famine prevailing everywhere east of the Rocky mountains. What a patient, long-suffering people are the Californians! How quietly they submit to the exactions of a corporation which owes its very existence to those it is sucking the life-blood from! It is to be hoped that the people of the Pacific slope will put aside party prejudices and unite in demanding their rights. With reasonable freights, every hillside, every valley in California could be made available, and then not half supply the demand for fruit.

G. C. PEARSON.

Danville, Ill.

A FRENCH EXPERIMENT IN SHIP BUILDING.—During the French blockade by the English fleet, Napoleon established a maritime arsenal in Venice, where a number of vessels were built. One day a brig, upon which great expectations had been founded, left the port without having time for trial; but it sailed so slowly that it was captured by an English ship before it reached the open sea. The French crew was replaced by an English crew, which was soon disappointed at finding that it was almost impossible to move the brig. Upon examination it was suspected that the principal mast had been badly stepped. Carpenters were called, who gave the mast a greater inclination, and after spreading the sails anew, the brig was found to be a faster sailer than any other in the English fleet.—*Les Mondes.*

THE DAIRY.

The Dairy Short Horn.

We find in our English exchanges an essay read at a recent meeting of the British Dairy Farmers' Association by W. Ashburner, brother of Robert Ashburner, the well-known California Short Horn breeder. Mr. Ashburner's subject was "What is a Dairy Short Horn?" and as this question is of great importance to our dairy interest, we propose to present the leading portions of the essay:

It requires experience—practical experience—before anyone understands what to buy, and what to sell; how to buy and how to sell; what to breed, and how to breed the kind of animal we are speaking of this evening—an animal pleasing to the eye and pleasing to the pocket; one that is good for the dairy and good for breeding; one that is suitable for the landlord and suitable for the tenant. Some may ask, how are we to get all these things combined? Simply by experience. I imagine the question being put to me, Where did you get yours? My answer is, I have purchased all I could lay hold of, and some of it at a high figure. The first lesson I had was in my father's shippon, nearly 40 years ago, when my small hands tried to wrench the milk from a cow called "Ruby;" but she needed me not; so she soon dispatched myself and stool I sat upon quickly from her side. This was a Short Horn, but not a dairy Short Horn—one that had been trained in her youth for early exhibition, and very successful in prize winning. I was next sent to her sister for my second lesson. I pulled and pulled in vain; but she heeded me not, as it was neither pain nor comfort to her, my sitting there. Give her plenty of good things, and she was satisfied; but she gave little in return. This animal was also a Short Horn, but not one for the dairy. She had been trained in her youth, like her sister, for exhibition; but the two ceased to breed in their early days. I attribute this to nothing but high feeding in their early days, as their dam lived to a good old age, and gave more milk than both of her offspring; but she *was* a dairy Short Horn. My third lesson was quite of a different nature to the two former. It took away all my energy and strength to draw the large pailful of milk from the cow's udder; the longer I drew the more she seemed comforted by my so doing. This animal was equally well bred, and the produce quite as good as the other two, although giving 20 quarts of milk per day, for some time after calving, for several calves. This is what I call a Short Horn dairy cow; but remember, she never had been trained for show in her youth, but simply trained to milk and breed good cattle.

What a Dairy Short Horn is.

I must now try to explain to you what is my meaning of a Short Horn dairy cow. In the first place, I do not style the animal a Short Horn at all unless sufficient pains have been taken with her breeding to entitle her to be recorded in our English Herd Book. I think that book is to a Short Horn breeder what a railway guide is to a traveler by rail. If a traveler is not experienced in long journeys, he must apply to his guide for assistance; in like manner must an inexperienced Short Horn breeder apply to the best written guide he has to refer to. That book will teach him many things written of breeders of bygone years; it will teach him to think; it will teach him to act more prudently than if he had never read it at all, provided he understands what he reads; and there is no way of understanding even that book, but through experience. Experience is a great master, and has taught many a Short Horn breeder a lesson to be remembered through life, and is capable of assisting to teach for the future, as it has done in the past, what a dairy Short Horn ought to be.

It is argued by some that we cannot have

Pedigree and Milk Combined.

Experience has taught me differently. I will give you an instance of a Short Horn I now possess, descended from Mr. Colling's "Daisy," that gave 16 quarts of milk per day after calving her first calf in September, 1879; 22 quarts per day after her second calf, in August, 1880; and a similar quantity after her third calf, in July, 1881. The three calves are all remarkably healthy, and I have had 100 guineas offered for her second calf before a year old. I ask you, gentlemen, is this a bad sort of Short Horn dairy cow? I have also a daughter of a well-bred Short Horn that won the first prize for the dairy three years in succession against cattle of any breed, and took the silver cup at the same time for the best cow and her offspring. Is it not enough that animals descended from recorded ancestors of upward of half a century are so noted for the dairy as well as breeding good cattle?

If all Short Horns were reared in a natural way and for natural purposes, I am convinced that no other breed of animals will pay a better percentage for the outlay. The high feeding system in their youth is ruinous to the milking properties of the Short Horn; it gives them such a tendency to fatten that it destroys their milking propensities.

You may ask me what is a natural state, and a

Natural Way to Rear

A Short Horn dairy cow? My answer is, neither feed to excess to injure the animal as a breeder or milker, nor, on the other hand, do not aim at being too economical in feeding, to injure the growth of the animal when young, as the injury done then by being too niggardly might do more harm to the constitution than overfeeding. The happy medium is the one needed to make a good Short Horn dairy cow, but even to get at this requires a little experience. Our aim should be an animal well formed, of good quality, of sufficient size, and in fair healthy condition—one that will do good to any tenant-farmer by breeding similar animals.

I think it our duty to ourselves, our duty to the nation at large, to breed the best cattle we can, to breed the most in number we can, to produce the most milk and butter we can, at the same time remembering that we have a thickly populated nation to feed by the beef we produce. Can we not combine these things together? I say, Yes; by rearing our stock in a natural way, and by selecting male animals of good descent, from good parents, from a dam with a good udder, and the sire from a dam with a good udder, at the same time not forgetting the constitution of the animal, by looking entirely to the dairy properties. We do not live by milk alone, neither by butter, neither by beef, but by a combination of good things, and it is a combination of good things that we have in a good Short Horn dairy cow.

It is not necessary that we should go to the

Hight of Fashion

In selecting either male or female to produce a good dairy Short Horn. The fashion of pedigree of late years has been rather like the present fashion of ladies' dresses—too tight to be comfortable at all times for the outlay. I would recommend every beginner to purchase good sound blood from reliable breeders, who have produced good animals for years past. Forty years' experience in purchasing and breeding Short Horns has taught me that they will graze well, milk well, and breed good stock also. All these points should be combined in well-bred Short Horns, and then we get in them what no other breed supplies. I have found that my steers and heifers, at three years old, realize something like £4 or £5 each more to the butcher than the ordinary bred ones do. If any tenant-farmer rears a little over 20 calves during the year, the additional £100 realized for the 20 calves from Short Horn cattle might spare him the anxiety of asking his landlord for a percentage from his rental these so-called hard times.

THE FIELD.

Smut in Wheat.

EDITORS PRESS:—Mr. J. B. B. wishes some scientific man to answer J. C. B. on the smut. That I shall not try to do, as I don't pretend to be a scientist; but I have had an experience of 28 years of wheat growing in California. The first piece of ground that I ever plowed was in Yolo county, in 1853, and that was the first smut I ever saw in my life, as the thrashing machine had not come into common use when I left my old home in Tennessee. The cause of smut in my Yolo field was the broken wheat that was in my seed. This is one cause of smut, and the bluestone kills the broken wheat and all that is diseased from other causes. Do not understand me to say that bluestone is a positive preventive, for there are four causes for smut that I know of, which I will give. One of these causes I have already spoken of; in the second place, there is a bug that causes smut. This bug is a black bug about ⅜ of an inch long. He climbs the wheat stalk just as it is in bloom and saps the gum at that stage, and therefore the berry is diseased, and only matures in smut. As a proof of this I will refer all of our farmers to the fact of seeing wheat with one-half of the head good wheat and the other smut. All the grains that are not stung by this bug are good and all which are stung are smutty. Some one may ask how I know this to be a fact. In the year 1858, I had a very fine piece of wheat; one evening just after sundown I walked into it and I saw a great number of these bugs on the heads of my wheat, I watched them very closely and found they were sucking the berry of the wheat, so I let one go up one side of a head and then knocked him down, and thought I would make some observation, so I tied a string around the bunch of wheat, and when ripe, the head on which the bug went was all smut and the other good wheat. I have seen the same thing often since, so I am thoroughly convinced of the truth of the statement.

Another cause is atmospheric, and this will explain J. B. B.'s question as to the cause of one portion of a field having smut and the other none. There is a great variety of soil on every man's farm in this country, and there is a time just as the wheat is heading out and the berry begins to form, that the hot, sultry air, or something of the kind, will smut wheat. I know a piece of land of which one part is low bottom, the other about two feet higher. I have seen this land plowed and sown all in good condition; one year the low land would have smut and the next year the other would have smut, and the reason that it didn't all smut is plain to me. The high land is always in advance of the low, therefore the hot air cannot strike both at once, so it may hit the low land one season and the high land another. An-

other evidence of my theory is that J. B. B. says that he never saw smut in volunteer, but in Tulare county last year all the volunteer had more or less smut on. At least that was the case in my neighborhood. I speak of land that had no grain sown on it. It must have been the atmosphere that caused it, as bugs were not around in quantity to have made so much smut.

One other cause I will speak of, and that is working land too wet. That has, in my opinion, a good effect, if you want smut; and as I write I think of one more cause, viz.: cultivating land just as the wheat is sprouting. In 1867, in Colusa county, I was putting in grain with a cultivator, and was nearly done, when it began to rain, so I had to stop work for several days, and the wheat was sowed on all the land; so when I got to work, the wheat had begun to sprout. I cultivated as before, and that portion, about 20 acres, was nearly all smut. The breaking of the young sprouts causes a diseased stalk, and therefore the smut.

But the main cause of smut is the cracked wheat, so you must bluestone in order to prevent the main cause, as all wheat is cracked, more or less, in thrashing. There may be other remedies, but I have never found any so effectual as the bluestone. A. J. SCOGGINS.

Lemoore, Tulare Co., Cal.

[The discussion of the smut and bluestone question is interesting, and it will be well to draw out all experience. We do not agree with our esteemed correspondent above on all his beliefs—but let the discussion go on.—EDS. PRESS.]

THE VINEYARD.

Ten Years in California Raisin Making.

G. G. Briggs, of Davisville, gives the *Rural New Yorker* a brief review of his experience in raisin making, which it is well to place upon record here, as some of the facts are not known even in the State which is proud of Mr. Briggs' success and the prospects of his enterprise. He writes.—My experience with raisin grapes in California is as follows:

In 1868 I bought a vineyard of 40 acres. The vines were all of the California grape variety.

In the spring of 1869 I grafted them to Tokay and Muscat of Alexandria—sometimes called Muscatel Gordo Blanco.

In 1872 I had more grapes than I could sell fresh in the market, and made a few raisins.

In 1873 I shipped most of the grapes East, and got nothing for them; but had to pay about $1,000 freight, and lost all my labor, boxes and grapes.

In 1874 I picked them all for raisins. The 27th day of September the sun became dim and would hardly cast a shadow till the 25th of October, when it began to rain heavily and continued raining until all my raisins that were not under cover had become completely rotten. When the rain commenced I had taken up about 20,000 lbs. of raisins, and those which were spoiled by rain needed about two days of bright sunshine. I lost 160,000 lbs. of raisins in the rain.

In 1875 I made about 160,000 lbs. of raisins and planted 180 acres of vines.

In 1876 I made 180,000 lbs. of raisins and planted 140 acres of vines.

In 1877 I made 300,000 lbs. of raisins and planted 80 acres of vines.

In 1878 I made 400,000 lbs. of raisins and planted 20 acres of vines.

In 1879 I made 640,000 lbs. of raisins and planted 15 acres of vines.

In 1880 I made 800,000 lbs. of raisins, and planted 500 acres of vines.

In 1881 I made 1,000,000 lbs. of raisins, and intend to plant 75 acres of vines. I shall then have over 1,000 acres in vines. Our raisins are better this season than ever before. Two-fifths of them were first-class.

I expect to make 150 boxes to the acre when my vines become full bearers, which will be in about four years. A box of California raisins holds 20 lbs., full weight. We have put them up in whole, half, quarter and eighth boxes. J. K. Armsby & Co., of Chicago, have handled them all for the past four years. Three years ago they sold them on commission, and they netted me about 2½c a lb. Two years ago they paid me $1.10 a box. One year ago they paid me $1.35 a box. This year they pay me $1.75 a box for first-class and $1.40 for second-class. The raisins this season will about pay the cost of production and the expense of caring for the young vines.

My entire crop of green fruit, dried fruit, almonds and raisins has sold for about $100,000 this season, and my expenses have just about balanced it. I am satisfied that raisin-making will pay in California if it is economically managed. Our grapes are ready to begin picking about August 28th. We have trays to put them on when we pick them. The tray is composed of 4 boards 7 inches wide, 36 inches long and half an inch thick cleated together by nailing with clout nails a strip inches wide 28 inches long and ¼ an inch thick across the ends of the four seven-inch boards, making the tray 28x36 inches. We place a tray to a vine and pick the grapes and place them on it, and then elevate the north end of the tray a little so as to get the full heat of the sun. Some vines have two trays of grapes on them and others even more, but the average is about one tray to a full-bearing vine. A tray holds about 25 lbs. of grapes. We pick a first and second crop of grapes. There is a difference of about three weeks in the time of the ripening of the two crops. Grapes picked the 28th of August will cure in about 15 days. Those picked the first of October will require from 30 to 50 days, and some years we are obliged to use fire heat to dry them, or to finish drying them.

When the grapes are half-dried, we turn them over by placing an empty tray on them and turning them over, leaving them on the empty tray; then we take away the tray they were on, place it on another, and turn it. Two good men will turn from 3,000 to 4,000 trays a day. When the raisins are made, we put them into sweat-boxes, which hold about 100 lbs. They are 28x36x7 inches. The raisins are ready to pack four days after placing in the sweat-boxes. Our packers average about seven boxes a day, four layers of five pounds in each box.

Our vineyards are well situated for railroad accommodations. Our packing houses are close to switches, which the railroad company has put in for our convenience. We can load a car with raisins in 30 minutes. We sell all our raisins f. o. b. (free on board). We prune our vines to from 10 to 20 buds, and they are none more than 10 inches from the ground. We find the finest bunches on or near the ground.

POULTRY YARD.

Do Chickens Pay?

EDITORS PRESS:—With a view to answering this question, so often asked and so variously answered, I began, on the 15th of June last, to keep an accurate account of the receipts and expenditures from a flock of 60 hens and 6 roosters.

I herewith submit my report for the 6½ months ending Jan. 1, 1882:

EXPENSES

For Wheat	$25.62
" Corn	9.20
" Bran	13.65
" Shorts	6.55
" Middlings	13.45
" Corn meal	1.20
" Sulphur	.75
" Red pepper	.25
" Shells (lime)	.30
" Coal oil	.25
" Freight	2.35
" Egg crates	5.00
Total expense	$78.57

RECEIPTS.

From 271 doz n eggs	$95.89
" 87 young roosters (sold)	27.32
" 60 pullets, on hand (worth)	30.00
" Egg crates, on hand	5.00
Total receipts	$159.21
Less expense	78.57
Profits	$80.64

The above figures show a clear profit of $1.34 on each hen during the period of 6½ months. Nor is any account made of the eggs used during the whole time by a family of eight persons.

The original 60 hens (less five lost by disease) I still have on hand; also the 6 roosters. It will be seen that the 87 young roosters sold or eaten, are reckoned at a very low price—less than 32 cents each. These and the 60 pullets on hand (which I would not sell for $1 each), I consider are justly reckoned as profits from the flock, since they consumed at least half the feed.

The profits would amount to considerable more, or the expenses to considerable less, had I not had very bad luck with my young chickens during the period covered, from various causes, such as dogs, skunks, hawks, lice, and a dozen others; I lost 150 young chickens, the most of them nearly a quarter grown. No account is made of these, although they ate a large amount of food, all of which is charged against the 60 hens and no deductions made.

The eggs were all sold in San Francisco to W. B. Cluff & Co., at the market rates, which were as follows: July, 25 cents per doz.; August, 30c.; September, 40c.; October, 42½c.; November, 42½c. to 52½c.; December, 32½c. to 40c.

It will be seen that the price of eggs ruled high during a large part of the period in question. From January to June, they will be much lower, probably not averaging more than 22 cents a dozen. But this will be more than off set by the increased production of eggs, for during the entire period covered by my report, or 195 days, my hens laid only 3,252 eggs, sold. This would be less than 17 eggs per day for the 60 hens; and during the spring months they will lay from two to three times as many—at least that was their record last spring, for we often gathered 40 eggs per day from these same hens.

My hens are a mixture, averaging about as follows in the proportions of blood: Brown Leghorn, 50%; Black Spanish, 20%; Brahma, 20%; White Leghorn, 10%. In the future I shall develop more Brown Leghorn blood, and less Brahma, and no Black Spanish at all. The Black Spanish are excellent layers when kept pure, but when mixed they rapidly deteriorate, and the young chickens are very feeble and inferior after the second crossing; though the first crossing make fine layers and strong and beautiful hens.

I believe the Chinese rule, "Big chickens, few eggs," is strictly true. A Brahma hen will eat fully twice as much as a Leghorn, and will never produce more than one-half as many eggs, *I do not care what you feed her.* Brahmas are only fit for the table, and here they have no rivals. But 10% to 25% of Brahma blood in Leghorns will make them much larger and stronger, and not injure their laying record.

My hens have a range of 10 acres in a young orchard, and all the green beet-tops they want to peck at always.

My neighbors have all said they were "getting no eggs at all," all the time the price was so high, while I was shipping 30 dozen a month regularly. I am sure the beet greens gave me my eggs, for the hens devoured them eagerly all through the fall when there was not another green thing they could get anywhere. I feed my hens regularly, corn and wheat, whole at night, and ground feed wet with water in the morning. I do not have much faith in bran for hens, but mixed half and half with middlings, it is good for growing chickens. They can eat all they will hold of this without hurting themselves. But chickens will die of overfeeding if their food is rich.

The best egg-food is pure wheat, and I always buy No. 1 wheat for my hens; it is much the cheapest. But they should have three or four kinds of food every day, and always all the lime shells they will eat. They will not lay without lime, and shells are the best—any sea shells. W. C. DAMON.

Napa, Jan. 20, 1882.

Poultry Notes.

From Wm. Niles' excellent work, the "Pacific Coast Poultry and Stock Book," we take further paragraphs on the handling and care of fowls, which will be of value to our readers who are now approaching the busy season in their poultry yards:

Accommodations for Poultry.

A poultry house in our climate is not an absolute necessity, as it is East. Fowls which roost in the branches of trees the year round will do well in some localities, although it is much better to provide them with a shelter from the wind, rain and fogs of our rainy season. When a poultry house is built the comfort and convenience of the fowls should be carefully regarded. Space on the ground is the greatest requisite and not hight. Allow as much ventilation as possible. Drafts, however, should be carefully avoided at all seasons. The nests and roosts should be movable. Keep the house thoroughly cleaned and do not spare whitewash. Avoid vermin; for with vermin surely comes disease. If the fowls are to be kept penned up much of the time, the poultry house should be surrounded by a yard, having a fence of sufficient hight to keep them securely enclosed. Although the rays of the sun are very essential to the well-being of fowls, yet the yard should also have plenty of shade.

Cheap Poultry Houses.

I find that the best and most successful way to manage fowls for profit, and to keep them free from disease in California, is to scatter them about in fields and orchards, in small flocks and in separate houses. I have found no difficulty as to large numbers, if too many are not crowded into *one house.* My plan is to build small cheap houses for each family of about 25 fowls.

I will give descriptions of two styles of houses, the first for the northern portion of this coast, and the other for southern California and Arizona. A good size is 6x8 or 10x12 ft., the former, if it is purposed to move them often. Make them four ft. high to the eaves; the roof can be of boards, shakes or shingles, running six inches to one foot over the eaves; with a small sliding door about one foot square in one end, and a door about two ft. wide and about six ft. high, in the other end. Cover all cracks with strips of wood so that there will be no chance for drafts, one of the most prolific sources of disease. For the purpose of ventilation, cut a hole about one foot square in each end of the house, near the apex of the roof.

For southern California and Arizona a good house, and one which I use for moving about in my fields, is made at a very small cost. Size, 10 ft. long by 4½ ft. wide. Make the front six ft. high, and back four ft. Make roof of shakes, two lengths. Board up the back, and if you choose one or both ends, or make both ends and front of lath, using a board at top and bottom to nail to. I generally make the back only of boards and place it towards the prevailing winds. I make sides, front, back, and roof in separate parts and then tack together with nails, leaving the nail-heads protruding a little so they can be easily withdrawn. The roof may be supported upon posts made of any material or can rest upon the sides.

A lath door of any desired width with leather hinges should be made in the front. Two roosts, made of stuff two or three inches wide, and placed from 18 to 24 inches above the ground, should be provided. Such a poultry-house can be taken apart readily, and moved a length at a time, or two men can carry it from place to place. In this way you also avoid the necessity of cleaning out the droppings.

Movable Fence.

Fences can be built cheaply of different hights with lath nailed upright to two or more 1x3-inch pieces, nailed to standards also 1x3—the first piece at the bottom, the second 3 ft. 10 inches above; if 8-ft. lath are used, the third at top. It is best to make this fence in panels about 12 ft. long. Set or drive a post where the panels come together, and pass a wire or baling rope around panels and post, fasten, and you have a light, cheap and strong fence. For Cochins and Brahmas a fence four ft. high will be found sufficient. Lath can generally be had in 4, 6 and 8-ft. lengths.

The Best Whitewash for Poultry Buildings.

It is necessary, especially here in California, to keep our poultry houses clean and wholesome by the free use of whitewash. Although there are many recipes for making whitewash for this purpose, the following I believe to be the *best:*

Into the whitewash pail drop a teacupful of soft-boiled rice and mix thoroughly. Then pour into a quart pot of cold water say ten or twelve drops of crude carbolic acid. Mix this into the rest and swab the interior of your hen-house with it. For outside, use rock salt dissolved instead of boiled rice, and dispense with carbolic acid. No other preparation of whitewash ever equalled this for poultry buildings.

Testing Hens for Sitters.

When a hen manifests a disposition to sit by remaining on the nest over night, by clucking, and by being ruffled in feathers as well as in temper to such a degree that she has the appearance of being decidedly uncomfortable, it is time that some action be taken to find if she "means business"—when, if she does *not*, she must be made to quit her foolishness and get to work. Persistence in these indications should be met, on your part, by the placing of a few China eggs in a nest prepared for sitting purposes, and at night put the hen on the nest. If she sits contentedly 24 or 36 hours, the eggs may be intrusted to her keeping. This precaution for proving her sincerity is a very important matter; most especially so if we have eggs that are rare or high-priced, and that we do not feel disposed to risk by giving to a hen on her first manifestations of a desire for incubation.

Sitting Hens and Eggs.

It is the best to seclude sitters as much as possible. This is best accomplished by shutting them on their nest, and allowing them to come off once a day to feed, exercise and wallow or dust themselves; or they can be placed in a room prepared for them, with food, water, dust bath, etc. Always set the hens at night, as they will then stick to their nests better. It is better to use false eggs for a day or two, until they get settled down to business, then supply the selected ones. But first of all, rub or dust carbolic powder through their feathers (to the skin) and under their wings, and sprinkle a spoonful in the nest. Repeat the dusting again three or five days before the eggs hatch. Thus managed, sitting hens will not be troubled with lice, unless placed in a locality already alive with them. Always after a brood has hatched, the nest should be burned, and the box thoroughly scalded and white-washed to prevent vermin. I think it best, if hatching during the summer months, to renew the *nest* about a week before the chicks are due.

How to Make Nests for Sitting Hens.

Some experience is needed in this matter, but by following the few simple directions given below, very little trouble will be encountered. At the bottom of the nesting-boxes place some damp earth made into concave form. This dampness is beneficial as it supplies the moisture the eggs lose during the process of incubation. Some care is needed in forming the concavity in the damp earth. It must not be made so hollow that all the eggs will slip down to the bottom, nor so flat that the eggs will be liable to roll out upon the ground. A little practice, however, will enable one to strike the happy medium. Having now made the foundation of the nest, it must be covered with short straws. Here, again, care must be taken to have the straws well bruised, limp and broken short. The straws should be prepared by hand, for if cut by machine they will irritate and prick both the mother hen and her chicks.

Deserted Eggs not Always Lost.

If you discover that a hen has deserted her nest during incubation, and that the eggs are cold, do not destroy them. Try to find another hen that is sitting, or one that is ready to sit, and put the deserted eggs under her, and wait until they have been set on at least 22 or 23 days, thus allowing two or more days extra time to make up for their having been chilled during the process of incubation. I have known a number of eggs in a setting to hatch after they had been deserted at least 48 hours. So do not give up and destroy the eggs without a fair trial.

Doubling the Broods.

It is all very well to set the hens just as fast as they are ready, but then it is a far better way to set two hens the same day, so as to double the broods when the young chicks appear. This system becomes more convenient when from certain unfavorable influences the sitting hens brings off only a few birds, and it makes double care to attend to the wants of two hens with small flocks each, when one hen could take the lot and the other be put to hatching out a second brood, or be penned up until she looses her broody propensities. By having your chicks in small broods, you not only give yourself much more labor, but lose the use of about half of the hens. This is only one of the easily-made mistakes of poultry raisers, but it is one which can very readily be corrected.

THE German steamers are bringing cabbages to New York. One vessel recently in, had 40,000 aboard. For several years past they have been an article of export, but the drouth this year made short crops in the Eastern States.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

Song for the Grange.

Tune by Tucker.

We stand here united in courage and will,
The cause of the right to maintain;
With hearts true and constant, whatever may come,
We firm as the rocks will remain.
Chorus.—For the right, for the right, here determined we stand,
So pledge we the word, so join we the hand.

The aim and the purpose which fire every heart,
Awake in their strength and their might,
To raise the degraded, relieve the oppressed,
And fearlessly stand for the right.
Chorus.

No fearing nor doubting shall enter the band,
No question of evil report;
The nations and people all over the land,
To us be united in heart.
Chorus.

Then stand here united in courage and will,
The cause of the right to maintain;
With hearts true and constant, whatever may come,
We firm as the rocks will remain.
Chorus.

Grange Elections.

San Luis Obispo Grange.—Election, Dec. 10th. W. P. Barnett, M.; W. J. Miller, O.; F. S. Breed, L.; B. B. Pierce, S.; John Flint, A. S.; Mrs. Laura Forbes, C.; L. M. Warden, T.; Jessie Lewis, Sec'y; Geo. Steele, G. K.; Mrs. D. M. Steele, Ceres; Mrs. L. M. Warden, Pomona; Mrs. B. Pettitt, Flora; Mrs. R. E. Jack, L. A. S.

Yuba City Grange, Sutter county.—Geo. Ohleyer, M.; F. Frisbie, O.; G. W. Carpenter, L.; Wm. Stewart, S.; Geo. Ohleyer, Jr., A. S.; Mrs. Annie Stewart, C.; Mrs. Josie Heddon, T.; Mrs. M. J. Frisbie, Sec'y; Ernest Smith, G. K.; Miss Emma Vandorn, Pomona; Miss Nettie McCready, Flora; Miss Mary Ohleyer, Ceres; Mrs. S. E. Walton, L. A. S.; Mrs. Ida Lee, Organist.

Plumas Grange, Plumas county.—W. E. McNeil, M.; A. Sperry, O.; A. B. Huntley, L.; O. McElroy, S.; M. Tognazzini, A. S.; A. Trimble, C.; J. L. Crow, T.; Thos. Black, Sec'y; D. T. Jones, G. K.; Anna Bringham, Ceres; Mrs. Trimble, Pomona; Mrs. Derbyshire, Flora; Miss A. F. Hubbard, L. A. S.

Washington Grange.—Saturday the District Deputy, Wm. Phelps, of Stockton, installed officers of Washington Grange, P. of H. Upon this occasion there was a large attendance of the members, and many visitors represented Woodbridge, Elliott, Stockton and Lodi Granges. After the installation, tables were spread in the room below the hall, around which the merry, happy throng of grangers assembled, and partook of a most bountiful and tempting repast. Of all the good things the tables contained, it were impossible to speak. Roast turkey, hot chicken pie, preserved fruits of all kinds, rich cakes of every variety and pies—why our Past Master really contemplated putting a sample of pumpkin pie in his pocket; and for ourselves, we looked with longing eyes from our hand-bag to a delicious blackberry pie, but, well, we did'nt. Brothers Phelphs and Sabin both found enough to eat, and were the happiest of the happy. After the festivities, the Grange was again called to order, Master Dill in the chair, and the secret session was above the average meeting. Brothers Overshiser Huffman, Phelphs, Hon. B. F. Langford, Sollars and others addressed the meeting. Bro. Overhiser told a "fish story," but as we have promised ourself the pleasure of a visit to his carp ponds we will not repeat it here. As the days are short, and most of the visitors had a long drive to reach home, the Grange closed at an early hour in the afternoon. We think we but echo the wishes of every guest present when in their names we return our sincere thanks to the Washington Grange for their liberal hospitality.—*Lodi Review.*

Bereavement.—The sympathy of all will go out to our brother, J. V. Webster, Secretary of the California State Grange, in his bereavement by the death of his mother, which occurred last week. Mrs. Webster had passed the threescore and ten limit of life. Her residence has been of late with her son at Fruitvale, and her departure plunges the devoted household into mourning for a second time within a few months. Such experiences call forth our heartfelt sympathy for friends whom we esteem.

Married.—We acknowledge the receipt of an invitation to the wedding of Miss May Carpenter, daughter of A. O. Carpenter, Esq., to Mr. John E. Ellis. The wedding occurred at the house of the bride's parents, in Ukiah, and was a very pleasant occasion. Miss Carpenter was an accomplished young lady, and a teacher beloved by her pupils and friends, who will wish for her a long and happy life as Mrs Ellis.

The Secretary of the Treasury has issued a circular designating Corpus Christi, Texas, San Francisco and Wilmington, California, as ports from which imported merchandise may be shipped in bond in transit through the United States to Mexico.

Agricultural Notes.

CALIFORNIA.

BUTTE.

Raisins.—Gridley *Herald*, Jan. 13: C. L. Durban of Mesilla Valley called in to see us last Friday. As a reminder of his visit we have a box of very choice raisins. Mr. D. is making himself and his foothill vineyard famous the world over by the raisins he makes. Last season his crop amounted to eight tons, the greater portion of which has been purchased by the merchants north of Marysville. He is now turning his attention to seedless raisins, and has succeeded in making some almost three times the size of the French brands.

COLUSA.

Setting Out a Nursery.—Willows *Journal:* N. D. Rideout has decided to plow 40 acres of the best land on his large tract south of town this year for a nursery, which will be placed in the hands of an experienced nurseryman. Mr. Rideout is contributing very much towards the development and improvement of this portion of Colusa county.

Editors Press:—The weather has changed. We have been having a terrible siege of north wind during the greater part of the last two weeks; but early this morning it commenced raining, and by daybreak, water was standing in pools in many places. The only damage done by the north wind in this vicinity was the destruction of a large barn in Tehama county. The ground has never been too dry for plowing, and the weather being cool, a greater amount of work has been accomplished than if it had been raining every day or two. This last shower, however, is just in time. "Thou visitest the earth and waterest it; thou waterest the ridges thereof abundantly; thou makest it soft with showers; thou blessest the springing thereof." Since the shower, a heavy fog has set in; but as it will be nearly a week before this letter will reach the readers of the Press, I would not venture to prophesy what the weather might be by that time.—L. D. J., Olimpo, Jan. 23, 1882.

Outlook.—*Sun* Jan. 21: Notwithstanding the heavy and cold, north winds of the past week, we cannot but regard the crop prospects of Colusa county as favorable. It will take but little more rain, at the right time, to make us big crops. There was a very large area summer-fallowed, and this has been put in in unusually good order. The lands that were overflowed last winter and planted this, will make sure crops if we have no extra dry spring.

CONTRA COSTA.

The Season.—Martinez *Gazette*, Jan. 21: This is apparently to be one of our dry seasons; but, so far as our own section and a very large portion of the State is concerned, it is not unlikely to prove one of bountiful grain crops. It has so far given us plenty of rain for plowing and seeding purposes, and there never has been a season more favorable for getting the ground seeded in the best manner, or for finishing up the work at so early a period. With three inches of rainfall before the end of February, and two inches in ordinary interval falls afterward, approximating the measure of ten inches for the season, it will be sufficient, other conditions being favorable, to give us an average, or better than an average, grain harvest. Past experience of our average dry or light rainfall seasons would warrant us fully in looking for a fall of from six to nine inches yet during the coming three months, and the record shows a number of good harvest yields which have fallen short of this in the measure of rainfall up to present date—notably that of 1878-79, when, up to the 22d of January, our measure off all was only 2.53 inches, after which we had 13 04.

Extending the Fruit Planting.—The quantities of fruit trees and grape cuttings arriving at our railroad depot have been much larger this season than ever before, and indicate an extensive additional fruit tree and vineyard planting in our section. Among other lots we have noticed within the week past several carloads of trees and cuttings, for Mr. August Homme, who intends planting 250 acres in new orchard and vineyard on one of the west side table benches of his San Ramon farm, at an altitude of one or two hundred feet above the valley level, a well chosen and well adapted site for orchard and vineyard purposes. From such indications and facts as have come under our observation, we have no doubt that new planting of this season will double the previous orchard and vineyard area of our section.

FRESNO.

Old Wood on Vine Cuttings.—*Expositor:* I noticed a large quantity of grape cuttings at the depot consigned to planters here. These cuttings came from Santa Clara, and were made in contravention of law in this, that very many of them had some of the old wood of the vine left at the butts. The law is as follows:

"All cuttings of grapevines made in this State for sale, gift or distribution outside of the vineyard or vineyards where the same were grown, and intended for new plantations, shall be made solely of the wood of the preceding year's growth; all older wood to be carefully and thoroughly removed before leaving the vineyard where made, and to be immediately destroyed by fire, if removed from such cuttings, wherever seized by any duly authorized inspector for any evasion or infraction of this rule. The reason for this rule is that the winter egg of the phylloxera vastatrix is, according to the best authorities, found only on the old wood."

I have notified the parties. A rumor has been prevalent that evidences of phylloxera had been discovered in two vineyards on the Central colony. I have investigated the matter and find that the report has no foundation yet discovered. If phylloxera should be discovered in those vineyards, it will be easy to eradicate it, as every field can be easily flooded.—B. Marks.

The Fresno Colony.—The Fresno Colony, the last to start, has also enjoyed a rapid sale. Though not started up until the dry season had already set in last year, and when it was too late for anything to be done in the way of cultivating lots, a number of tracts were sold—G. G. Briggs, the great grape grower and raisin maker of Yolo county, taking about one-fourth of the whole tract. One reason that has caused the lots in this colony to sell so rapidly, is its very desirable location, immediately adjoining the town of Fresno, and lying between the town and the Central California Colony. The main canals for conveying the water over the colony are now constructed, as are also many of the distributing ditches—the latter being constructed as fast as they are required by the capitalists. A recent visit to this colony showed a number of new buildings just completed, and the colonists zealously at work leveling and preparing their land for orchards, vineyards and alfalfa fields. The prospect of a dry season has had the effect of materially advancing the value of irrigated lands, and we should not be at all surprised to see the lands without improvements in the various colonies—with water—advance to $100 per acre before the close of the year. In the Villa Homestead, which lies to the north of Fresno, it is now impossible to buy a lot without paying a considerable advance over the first cost, and it is less than two years since this colony was laid out.

Alfalfa.—Perhaps one of the most valuable and easily-raised crops that can be planted is alfalfa. It will yield, on irrigated lands, from three to five crops per annum, and will produce more than a ton of hay at each cutting, and at least two crops can be gathered the first year of planting. In Kern county, where alfalfa growing has been given much attention, an acre of land, properly located and planted to alfalfa, is valued at $100, and this valuation is too low, when we consider the profit that can be made out of an acre of this nutritious forage plant. At the present time alfalfa hay is selling at $15 per ton here, and it is very seldom, in fact it never sells as low as $5 per ton in winter. Take a yield of four tons per acre—and this is a very low yield per annum—the product of an acre of land for one year, at the present prices, would be $60, and at the lower figure $20 per acre. At either figure, therefore, it will be seen that alfalfa is a profitable crop. The time is not far distant when the majority of meat used in the markets of this State will be stall fed, and for this purpose no feed can be raised that will equal alfalfa. The farmer who plants a field of alfalfa will find that he has made a profitable investment, and one that will always yield him a handsome revenue.

Coyotes.—*Republican:* Coyotes are still plentiful in this county, and are a standing menace to the business of stock raising. They are particularly numerous in the vicinity of stock ranches, and along Fish slough have committed considerable depredation. To kill a lamb or a young calf is to them but a few moments' work, while hunger often prompts them to attack the grown sheep. Poultry are an easy prey to these prowlers. Something like an organized effort should be made to destroy these troublesome animals.

LOS ANGELES.

Winter Irrigation.—*Commercial*, Jan. 18: In a recent extended trip throughout the agricultural and horticultural portion of this city, we were surprised, and very much regret to learn of the small number of *vignerons*—intelligent cultivators or the reverse—who have taken advantage of their facilities in a dry season for winter irrigation, so that their ranches will need no irrigation in the summer. We know whereof we speak. Right at the city limits we can show a case of a 40-acre vineyard which, for years, received no irrigation in the summer; but the ground was saturated in the winter, and the yield and profit excelled that of vineyards for a long distance around. The soil was rather stiff, too. Intelligent summer cultivation combined with winter watering, did the work. Turn the waste water of the Los Angeles river loose now.

MERCED.

Oranges.—*Valley Argus*, Jan. 21: Ripe oranges are hanging upon the trees in many gardens of Merced, among them that of our neighbor, John T. Reed. Notwithstanding the past three winters have been unusually frosty, and the freeze of this week more severe than those preceding, oranges and many other semi-tropical fruits flourish, and ere many years Merced will be able to boast of her orange orchards as well as many other localities.

MENDOCINO.

Editors Press.—We have been having a series of very heavy frosts here, which are damaging feed and keeping back the grain. Farmers' hire are all busy putting in an increased acreage of grain. A dry season is the best for this section. Our hop men are in the best of spirits. Some new fields are being added to our already large acreage of this crop. The yield of the best fields of hops here is from 1,200 to 2,000 lbs., and even beyond the latter figure in exceptional cases. Live stock is in fair condition. But very few fat cattle however are to be found. Fall wool went very slowly, but I believe that nearly all of our crop is sold at figures ranging from 17½ to 20 cents.—Monitor, Ukiah.

Agricultural Society.—Ukiah *Press*, Jan. 20: At the annual election of the Mendocino County Agricultural Association, held last Saturday, at Willits, Hiram Willits was elected President; B. B. Capell, Vice-President; John A. Morgan, Treasurer; B. F. Coates, Secretary; Thos. Young, A. O. Carpenter, J. M. Standley, E. C. Foushee, Frank Davis, P. T. Muir, Ed. DeCamp, J. S. Dobkins, Ole Simonson, Directors.

MONTEREY.

"The Color" in Monterey County.—Editors Press: It takes the most sanguine of optimists, just now, to see the least inkling of rose-color in the aspect agricultural. Blue is the visage of the farmer, and blue the nose of the inhabitant of our country towns. The dreary drab of drouth mantles the hills instead of the velvety verdure of spring. Whitened are the plains by the cold breath of Jack Frost, or bare and brown and dusty from lack of the growth-compelling rain. Our gardens are most aptly described as of that new color, know as "faded sighs," and the voice of lament is heard over their departed glories. Only the newspaper man is deaf to the cry of "dry year!" May his rain-guage never score less!—Edw. Berwick.

SAN BERNARDINO.

Storm Effects.—Riverside *Press and Horticulturist*, Jan. 21: The wind-up of the storm has given our people an opportunity to look around and see what damage has been done. All agree that, so far as this valley is concerned, the frost has done very little damage—none to speak of. A few tender shoots of the orange, lemon and lime have been nipped, but not enough to do much hurt. The snow on the trees, added to the weight of the fruit, broke the limbs of some trees in heavy bearing, injuring a few trees quite badly. The lemons broke worse than the orange trees. Many saved their trees entirely by shaking the snow from the trees as it fell. It was an unpleasant task, but it paid those who were thus thoughtful. The wind that followed the storm was quite heavy, but did no damage as compared with some other more exposed valleys. Riverside has the reputation of being a windy place, but the proof of the business is found in footing up the damages.

Sheep Losses.—*Times:* During the late severe weather, F. M. Wood, of the Rincon, lost 600 head of sheep; a Frenchman, named Jordan, 800 head; Ballou, 200 head and Slaughter, 80 head.

SANTA BARBARA.

The Agricultural Association.—*Press*, Jan. 21: The annual meeting of the Santa Barbara County Agricultural Association was held on Saturday, Jan. 7th, at the Odd Fellows' building. Although there was not so large an attendance as hoped and desired, yet those who were present expressed themselves gratified with the success which had been achieved under so great disadvantages. The Treasurer's report showed a balance of about $250 in the Treasury. The following-named gentlemen were then chosen to serve as Directors for the ensuing year: L. B. Hogue, O. N. Cadwell, A. Hayman, J. J. Eddleman, Chas. P. Low, G. W. Coffin, J. B. Careaga, Geo. Roberts and J. M. Rochin. At the meeting of the Directors, which immediately followed the adjournment of the society, Capt. Chas. P. Low was elected President, J. L. Barker, Secretary, and F. H. Knight, Treasurer. Should the year prove a prosperous one, the Directors expect to make the next annual exhibition much grander and more attractive than the late fair, as the Directors have gained experience in management, and the society has already gained the confidence of the people.

SANTA CRUZ.

Editors Press:—I send a money order to secure me another year's cruise in your valuable paper. I *must have* the Rural Press just as long as I live. We have had a very favorable season in this county so far for crops—over nine inches of rain, and prospect of more; and our rains have come so quietly and gently, every drop soaking into the ground. On Christmas day I gathered 141 varieties of flowers in the open garden, to decorate my house with for the usual family gathering. On the 12th and 13th of this month we had quite a little freeze for this part of the world. On the morning of the 12th there was snow on the tops of the mountains that lie to the northeast, but it all disappeared before noon. The cold wave singed the tops of some of the most tropical varieties of my flowers, but they are putting out new buds and will be all the finer for the tonic administered by the two cold days. To-day I gathered a bouquet for a friend, containing over 50 varieties of flowers, so you see we have flowers enough yet to keep us in good temper. Three years ago last April, I had one-quarter of an acre set out in fruit, and with as great a variety as I could possibly set in so small a space. This last summer I had gooseberries, strawberries, raspberries, blackberries, apples, pears, plums, cherries, peaches, nectarines, prunes, Siberian crabs and quinces—all I wanted to use for the table, and I canned over 200 quarts of fruit from this quarter of an acre, and I also sold $9 worth of the raspberries, which are of the Red Antwerp variety. Santa Cruz county cannot be excelled by any portion of this State in its adaptability to the fruits I have enumerated, and also for grapes in the hills. We have one of the best climates in the world, never hot in summer, never cold in winter; sheltered by the mountains from all rough winds; with inexhaustible forests of every choice variety of

timber; watered at every half mile with streams or springs, eminently fitting it for a manufacturing county. I believe it is now second in this State in point of manufactures. We have two railroads running from this place to San Francisco, and a grand harbor where large ships can and do ride at anchor, and carry the various productions of this county to other parts of the State, and also to many foreign parts. But Santa Cruz has one attraction that surpasses all others, and that is its wonderful and marvelous salubrity and healthfulness; it is preeminently the place for invalids to come to in winter or in summer. We have the best bathing beach on the coast. There are hundreds of people living in this county, who will tell you that they were well situated in such a State, or in such a country, but they were afflicted with catarrh, or asthma, or consumption, or dyspepsia, until life became a burden, and they came to Santa Cruz, and have got well and strong, and live to bless the day they came here; and hundreds, yes, thousands have come here and regained their lost health, and then departed for places where friends or business interests called them. Another attraction that this place possesses is scenery of the most enchanting description.—MARTHA WILSON, Santa Cruz.

SHASTA.

A CORRESPONDENT writes from Anderson, Jan. 21st: "We have had some pretty cold weather the last week with considerable north wind, drying the ground rapidly. Plowing and seeding are well advanced, and if the rains hold off a couple of weeks the most of the farmers will have finished for the season. Many are planting vines and fruit trees, and things look prosperous."

SOLANO.

WORKS OF THE WIND.—Suisun *Republican*, Jan. 21: County Clerk Harvey, in Fairfield, lost the roof off a portion of his stable, and was out looking for it in the tules, at last accounts. Mr. George Stillwell probably met with the severest loss of any one. His barn was blown completely down, and some furniture, lumber and other articles which he had stored therein were made into kindling wood in a very short space of time. The large eucalyptus tree in C. N. Edwards' front yard was blown over, and in falling struck a pepper tree, and both were pretty badly mashed up. Beyond these few cases, we have heard of no damage being done, if we may except the general drying up of the surface of the ground. On Sunday we took a short ride into the country, and found the surface of the ground wonderfully dried up. One gentleman told us if the wind should continue three or four days longer, the ground would be too hard to plow. The grain that is sown and up looks very well, however, but needs rain to liven the roots.

SONOMA.

TURKEY PHILOSOPHY.—Healdsburg *Enterprise*, Jan. 19: One day recently there was a sort of family reunion at W. C. Mason's, on which occasion a bronze turkey gobbler, weighing 32 lbs. gross and 24 lbs. net, was served for dinner. The gobbler was raised by David Cook, and was 18 months old. This is the way Mr. Mason managed him: About six weeks before killing time he improvised a dark coop, with a big drygoods box, which he rested on four bricks, bottom of the box up, thus permitting light to enter only at the ground. Food and water were passed under the box and the vessels removed as soon as the contents had been eaten. This arrangement kept the gobbler from worrying, and in consequence of plenty of food (scraps from the table) he got rolling fat. Sunday was feast day, so on the preceding Tuesday Mr. Mason suspended the gobbler by the feet and drew a sharp knife across its throat, not quite severing the head. In due time the fowl was plucked and cleaned and submerged in a brine, where it was allowed to remain during the day, while at night it was hung in the open air. This was continued up to Sunday morning, when it was parboiled three hours, then had dressing added, and was finished off by baking in a good oven two hours. All hands said it was the finest turkey flesh they had ever tasted, and Mr. Mason is satisfied. All ye epicures go now and do likewise.

CROWS AND LAMBS—Healdsburg *Flag:* Mr. John Furguson, of Alexander valley, has lost about a dozen lambs from the attack of an army of crows. They light in trees in his fields and watch the sheep; and as soon as a lamb is dropped, they attack it before it is able to walk much, and sometimes before it gets on its feet. They first pick its eyes out, and then commence on its body. Thousands of crows have taken up their winter quarters in the valley. It is thought they may have been driven here by the dryness of the season in the lower part of the State. We noticed immense flocks of them a few days ago, and wondered how so many managed to live in that locality. It may be that hunger has driven them to attack the young lambs.

STANISLAUS.

WEATHER AND CROPS.—Oakdale cor. Modesto *Herald:* The weather during the last week was extremely cold, and the ground in this vicinity was never frozen harder. The thermometer ranged from 17° to 26°, being as cold as it ever has been during the last 28 years. The ground is becoming dry and hard to plow, and growing grain will soon suffer for moisture. Farmers have had an excellent time for putting in crops, and have got a larger acreage than usual, and some are still plowing to sow grain. But we must have rain soon, or the game is up. Who ever saw such cold weather, and not followed by a rain in a not very distant future? I predict spring rains and good crops this year.

WATERFORD.—Mr. E. Cogswell, who resides near Waterford, reports the summer-fallow grain in good condition, covering the ground finely. In his section, the ground was wet down about 14 inches, and still retains the moisture. The late-sown grain is still in the ground, and there is danger of its rotting, unless rain falls soon. A majority of the land sown has been from winter plowing, and this grain is endangered by the dry weather.

SUTTER.

SETTING OUT AN ORANGE ORCHARD.—M. Marcuse is setting out an orange orchard on the Thurston ranch in Sutter county, about four miles from Meridian and nearly due west from Marysville. The trees are four years old, and were obtained from Mrs. Swezy's nursery in this city. The orchard will cover an acre of ground, and will contain 110 trees.

THE WEATHER AND CROPS.—*Farmer*, Jan. 21: This continued north wind and frosty mornings that have prevailed for the past few days are very disagreeable, but our farmers say the crops are not seriously injured thereby. The moisture is within an inch of the surface, and when the wind from the south begins to blow there will be ample moisture. The numerous flocks of wild geese are the greatest drawbacks they have to contend with at present.

TULARE.

ABOUT CARP.—Visalia *Delta*, Jan 20: A. Bahwell, living 28 miles from Visalia, on the Mineral King road, bought 21 carp from Mr. Osborn, on the Tule, last March, and transported them to his pond in a novel and ingenious fashion. As the jolting of the wagon would be apt to hurt the fish in a barrel filled with water, he made a sack in the shape of a truncated cone, in the smaller end of which was a circular board furnished with a screw for attaching it to the bottom of the barrel, this wooden disc being smaller than the bottom of the barrel. The upper end of the sack was secured by a hoop to the top of the barrel. The fish were put into this open sack, and the barrel filled with water. In this manner, as there was space between the sides of the sack and those of the barrel, the fish were protected against injury, and he brought them all sound and well to his pond. In traveling the distance of 40 miles with them he discovered some curious things. He changed the waters several times—oftener, in fact, than was necessary—and noticed that frequently he would thus introduce water that did not agree with the fish. They would show their disapproval by coming to the surface and sticking their noses out of the water. Seeing this, he would immediately find other water, and if the fish were satisfied with it they would remain at the bottom. When he stocked his pond his carp were of the size of pickled sardines, and now they weigh from 4 lbs. to 7¼ lbs. They did not spawn, being too young. They undoubtedly will next season. Mr. Bahwell is a German, and formerly lived on the Rhine. He says his carp are identical with those that abound in great numbers in the Rhine, and in Germany they are esteemed the finest fish from the waters of that stream. The rivers in this State are very similar in many respects to the Rhine, which is clear, and has its source in the Alps. But the Rhine sometimes freezes two ft. or more. Experience here shows that carp thrive better in warmer localities, but so little are they affected by cold that those in Mr. Bahwell's pond are now enjoying themselves under two inches of ice, through which a hole has been cut that they may be fed through it. The carp ponds of L. A. Rockwell and A. Everton are doing similarly well.

VENTURA.

EDITORS PRESS:—The prospects for a good season here are bad. Thus far, we have had little or no rain, and, in consequence, people are beginning to feel uneasy. However, most of them have commenced to plough, and, in some cases, have sown small lots for hay, etc. Live-stock command fair prices, especially horses. The two hotels in the valley are crowded with visitors and the proprietors are jubilant accordingly.—R. W. C., Nordhoff, Jan. 13.

YOLO.

EDITORS PRESS:—For the last 10 days we have been having an old-fashioned north blow, demolishing outhouses, unroofing old sheds and barns, upsetting windmills, turning the feathers on the fowls the other end to, absorbing what little rain has fallen, drying the very life out of the earth. In many places it is already too dry to plow. The truth is, if we do not have rain soon, the grain will be seriously injured. Already may be seen the weak-kneed ones, standing in groups on the street corners, discussing the weather, not with smiling countenances, but with long disheveled hair, dark and haggard faces. The leading question among the farmers is: "When is it going to rain?" The weather prophets say on the 20th, but it looks a little doubtful, with the north wind blowing at the rate of 100 knots per hour. There is no occasion for immediate alarm. There is plenty of time to have an abundance of rain, and reap bountiful crops. We poor mortals are so near-sighted that we seldom know what is best for us. After all, the withering northern blasts are a blessing to the country. There may be a few farmers injured financially by the north wind, while thousands are greatly blessed. There is no doubt but the north blows are the salvation of this country; on them hangs life and death. Were it not for the north blasts that come sweeping over the interior of our State, down the river courses, over every frog pond, through every swamp and tule, cleansing and purifying the air, filling every nook and corner with the life-giving vigor, brought down from the snow-capped mountains of the Sierra, the interior of this State would be one cesspool of malarial diseases. Even with our purifying north wind, in many localities during the fall of the year, chills and ague, billious and malignant fevers prevail to an alarming extent. There is scarcely a country residence but has its slop holes, filthy and corrupt corrals, breeding the very germs of diphtheria and typhoid fevers. Hence, the north wind is a godsend, sweeping the germs of death to the sea, mingling it with the pure sea breeze, where it is lost in the expanse of the mighty ocean. So we say, let it come from east and west, north and south. Blow heavenly breezes, blow!—H. P., Winters, Jan. 20th. [The forlorn individuals on the street corners have had to run in out of the wet, for the rain has come to the region where our correspondent resides.—EDS. PRESS]

Snow and Roses.

[Written for the RURAL PRESS by JEANNE C. CARR.]

It seems to me that the PRESS has never been so good, or so welcome, as during my enforced absence from its columns. And I never have thought of so many things that I wished to say as during the last few weeks, all of which are in the inchoate form of jottings. But this vision of snow and roses is so fair and perfect that it crowds away more mundane themes, and I must try and make your readers see it through the poor media of words.

Last night we looked gloomily at the sky, at the garniture of tumble weeds and straws which the recent ill-winds have deposited in the orange groves, and verily thought the patter of rain on the roof would be the sweetest of sounds, and the moist, freshly-turned furrows the loveliest of sights to us; but the fresh morning broke upon a virgin world. Over the whitened fields rose the sentinels of the valley, San Antonio and San Bernardino, robed in peerless blue, farther, Jacinto more delicately tinged, while the Sierra Madre, in purplish-grey, alone wore a familiar face. The air was not keen, even when two hours later the round pellets came thick and fast, covering the orange trees, and giving us a completely wintry landscape. The roofs were hid, and our one-story cottages looked cozier than ever, the rich green of ivy leaves showing through the whiteness; so the golden fruit, looking so bright and cheerful, like the faces of children peeping from under warm sleigh robes. But the richest contrasts were in the gardens, where the roses have been forced by the dry weather into an unusual precocity. The Mareschal Neil buds were perfect in tint and form, and looked like the yellow crowns in the heart of the water-lily; the Lamarque seemed fully spiritualized in these rare conditions of being, but the Agrappina's and a large, semi-double red rose, very common here, which is either the Rose of Four Seasons or some of its kindred, were more riant in their loveliness. A large bush of red roses on a carpet of snow, there's luxury.

Just as sturdily beautiful was one of my little Japan quince bushes, ropes of scarlet blossoms covering the bare twigs.

These pictures with us were fleeting as fair; by noon the vision had faded. Not so with neighbors to the east and south. Mr. James Boyd, of Riverside, tells me that he measured seven inches of snow in his orchard, and that there was lively sleighing between that burg and Colton.

I have a strong suspicion that the clerk of the weather, dwelling about San Gorgonio or some of the openings into the desert, has been crazy drunk of late, for we have had phenomena all the time. Two reckless, uncompromising Santa Annas', doing less direct damage than the one I recorded last year, but drying out the tree juices more than a month of steady heat, and the recent semi-frigid streak of climate, makes one thing of the farther south now opening to settlement.

During the wildest burst of the last sand storm your correspondent was enjoying the hospitality of Kinneyloa, in company with "H. H.," so well known to magazine readers, and recently as the author of "A Century of Dishonor." Inside, a blazing hearth, warm rugs, books, pictures, the gathered "bits of travel" from many lands; outside, the wailing winds tearing down the canyons with terrible force, or lifting the sands and moving them in columnar masses, then piling them in drifts; a chapparal fire, too, kindled by a careless hand, lighting up the gathering blackness, and sweeping towards the new colony of Sierra Vista. A vivid, Dore-like picture, not soon to be forgotten. In the morning our host had looked fondly down upon the tender green of his barley fields, which were licked up by the remorseless breath of the sirocco before sunset. The fire was checked before it reached the newly-built cottages, a sprinkle of rain laid the dust, another new day found one more experience laid up in our memories. We do not expect our cup to be filled entirely with snow or roses, and fortunately we do not mix it ourselves. We should have been grateful for the early rains, which the persistent northers have blown away; but even if the later ones fail us, we can fall back upon the Gospel swamp and other moist lands, which produce unfailing crops of hominy in the driest seasons.

Since writing the above, Mr. Smith, the school teacher of Bear valley, San Diego county, has told his experience in trying to pass through the Temecula mountains in the snow-storm. It was a struggle for life against terrific wind, snow and sleet; all traces of the road being obliterated, they were forced to bivouac under the buggy-robes, turn their horse adrift, reserve for their own use the barley they had for feed, and keeping their feet from freezing with the warm body of a captured sheep. Before morning their foot-warmer perished from cold and hunger, and they were obliged to exercise vigorously to save themselves from the stupor produced by extreme cold. When the storm ceased and they reached a human habitation, the horse had already preceded them. This is one of semi-tropic experiences in 1882!

Pasadena, Los Angeles county.

News in Brief.

BETWEEN $700 and $800 worth of wire gold has been taken from the Ontario mine, at Butte, M. T.

THE Canadian Press Association is urging the government to take steps to abolish postage on newspapers.

SEATTLE had a $1,500 blaze on Monday evening, beginning in a Chinese wash-house on the west side of Washington street.

THE sentence of Alvino Pico, convicted of larceny at San Jose, has been deferred to give time for inquiring as to his sanity.

TWO HUNDRED destitute Russian Jews reached Hamburg on Wednesday. They are endeavoring to obtain aid to proceed to America.

THE delinquent tax list of Nevada county amounts to $20,000, including over $12,000 due from the Central Pacific railroad company.

IT is said that $1,500 has been offered for a seat in the San Francisco Produce Exchange, which is $500 more than the price fixed by the Directors.

NYE Co., Nev., is the largest county in the United States, covering 24,000 square miles; San Bernardino, Cal., with 23,000 square miles is the next largest.

ALBERT BRONSON, the young man who was shot a week ago at the Number Nine mine, near Merced, is improving, and hopes are entertained of his recovery.

LEVI ESTES, at one time a prominent, respected and wealthy citizen of Portland, was arrested on Monday, charged with setting fire to Estes & Knott's saw-mill, near Hubbard's, about two months ago.

THE testimony in the Gold Run mining suit, at Sacramento, was closed on Monday night, after occupying the time of the court for 49 working days. The case was continued until Feb. 28th, for argument.

TEAMS continue to reach Wood River from Kelton, Idaho, loaded with supplies for different camps. Teamsters report the road in splendid condition. Freight from Kelton is five cents per lb.; return freight is from $25 to $30 per ton.

THE Oceanic Steamship Company was incorporated on the 24th of last month, with a capital of $2,500,000, for the purpose of establishing a line of steamers between this port and the Hawaiian Islands. E. L. Steele, of the firm of C. Adolph Lowe & Co., is Pres. of the company.

FARMERS' ANNUAL HAND-BOOK.—A very useful hand-book in diary form bears the above title. It consists of blank pages, dated for daily memoranda, and these are followed by tables of statistics of various kinds, relating to the mating of animals and gestation thereof; also analyses of feeding stuffs, tables of weights and rules for calculating the same, and much other information of use to the farmer. The "Annual Hand-book" is published by D. Appleton & Co., and is sold by Jas. T. White, 23 Dupont street, S. F.

AMERICAN LYE.—The use of concentrated lye for orchard cleansing, is calling for unusual amounts of the material. We have an advertisement from the general agents, W. T. Coleman & Co., this week, stating that there will be plenty on hand next week. The excellent results attained by the use of the "American" brand, and the full endorsement of it by the Santa Clara orchardists, is giving this manufacture exceeding popularity in all parts of the State.

WORK OF THE PETALUMA INCUBATOR.—We hear from good authority that Mr. C. H. Palmer, of Bloomfield, hatched the first time with a 200 machine 78% of fertile eggs. His last hatch, from 167 good eggs, he had 165 live chicks, equal to 98⅔%. Mr. Walter Church, of Two Rock, with a 360 capacity, is fully rivalling Mr. Palmer. We are told that others throughout the country are meeting with like success.

IMPROVED HORSE COLLAR.—The attention of horsemen is asked to the advertisement of an open-top improved horse collar, by John T. Stoll, the well-known saddle and harness maker, of Sacramento. The new collar has manifest points of benefit, and should be examined and tested by all.

THE HOME CIRCLE

What Makes a Man.

Not numerous years, nor lengthened life,
Not pretty children and a wife,
Not pins, and chains, and fancy rings,
Not any such like trumpery things;
Not pipes, cigars, not bottled wine,
Nor liberty with kings to dine;
Nor coat, nor boot, nor yet a hat,
A dandy vest or trim cravat.
Nor master, reverend sir, nor squire,
With titles that the memory tire;
Nor ancestry traced back to Will,
Who went from Normandy to kill;
Nor Latin, Greek, nor Hebrew lore,
Nor judge's robe, nor mayor's mace,
Nor crown that deck the royal race,
These, all united, never can
Enlarge the soul to make the man.

A truthful soul, a loving mind,
Full of affection for its kind;
A helper of the human race,
A soul of beauty and of grace,
A spirit, firm, erect and free,
That never basely bends the knee;
That will not bear a feather's weight
Of slavery's chain for small or great,
That firmly speaks of God within,
And never makes a league with sin;
That snaps the fetters despots make,
And loves truth for his own sake;
That worships God, and him alone;
That trembles at no tyrant's nod—
A soul that fears no one but God,
And thus can smile in curse and ban,
That is the soul that makes the man.

Exchange.

Absent.

[Written for RURAL PRESS by JULIA M. GOODLETT.]

What a depth of meaning this little word possesses, and how quickly it should melt the most adamantine heart! Yet we hear it lightly spoken almost every hour. Could we but realize its deep sadness, we would surely never use it so lightly, so gayly; but alas! we know it not until we have felt the pain, the agony of having our loved ones far away. But even in this sad feeling, some rays of comfort creep. When soothing sleep closes our weary eyes, visions of dear absent ones come, as if borne upon some guardian angel's snowy pinions; 'tis then we see our absent father, mother, sisters and brothers. Joy thrills our souls as we gather with them round the happy family circle, hear the loving expressions of welcome, and note the radiant smile which illumines each child's countenance, as they whisper over and over the glad tidings, "Sister's come!" Lonely, indeed, is the feeling when, in the midst of this joyous scene, we awake and find them all absent. Yet we still realize but slightly the hidden meaning of that short word.

Those whom we have left behind feel it too; could we see how sadly our vacant chair at the bright fireside is watched, the missing plate at the table, the sad expression that lingers round mother's mouth as she bids each child good morning, and thinks of the absent one, the one far off struggling with the world, the center of another family circle, and hear the prayer that goes up from the inmost recesses of her heart, that God will keep and bless her absent child, we would realize that we are truly dear to them.

As the mail brings messengers full of love and sadness and we read words like these, is it any wonder that tears gather and will not be retained within the throbbing lids? "My absent daughter: You can never know how through the busy hours of the day and in the long night watches, my thoughts constantly turn to you. Something like sadness often darkens your father's brow, when he returns from the day's busy scenes and misses your smiling face and eager expectant inquiry for the mail; even his newspapers seem less interesting to him now that you are not here to enjoy and discuss their contents with him. Daily I hear the children say, 'When sissy comes we will do this or that.' Last night as your little brother knelt at my knees in prayer, he suddenly asked, 'Mamma, does you reckon the good angels would carry sissy one good-night kiss if I ask them?' Could you have seen with what love and faith he clasped his tiny hands, and said, 'Good angels, please carry my sissy a good-night kiss, and tell her to come home,' you could probably form a faint idea of how much we miss you, my absent daughter." Yes, we read these loving, lonely words with tears, but still realize but dimly the full meaning of absent.

We never realize this until we know the absence of hope and joy in our hearts; until the angel of death takes from us a loved one, then we deeply, bitterly realize the meaning of "absent." The mother bends over the marble form of her idolized child and looks for the opening of the once bright eyes, the smile and loving look that were wont to note her presence near her—they are absent. They take from her clinging arms the tiny form and lay it in its little grave; again and again the violets bloom over it; the years bring many cares, and other burdens press heavily upon her saddened heart; other little ones nestle lovingly within her once empty arms; other bright eyes look wistfully at her dear face, and other lisping tongues call her mamma; yet each passing hour reminds her of the absent one—absent, to return no more. Each little flower of spring, every zephyr, every cheerful bird's song, bids memory turn to her buried child—her idolized one, who first awakened within her heart the all-abounding stream of mother's love: sometimes she turns to caress her, as she had often done—only to find that she is gone. Though every little one is fondly welcomed, and finds within that mother's breast a warm, unfailing love, the aching sense of loss is still there; and though she knows that her baby is in a brighter home, that she was doubly blessed by being removed from earth's multiplied cares, ere the tender bloom of infancy was rudely brushed from her pure soul, bitterly that mothers realizes the meaning of absent.

If these be effects produced by the absence of a loved one on earth, where it can only be transient, what must they be, if, as a family enters the shining gates, clad in gleaming garments of purity and singing glad songs, one is found absent—to be absent throughout eternity. Methinks this would cast a gloom over even the redeemed, and hush their song of joy as they passed within the golden gates and heard them close upon an absent loved one.

Then let us strive earnestly to prevent this; to so live that we may all enter that Better City, join the loved of earth and meet each kindred heart in that Unchanging City, where grief and tears are never known.

San Bernardino.

The "Fireside Clime."

EDITORS PRESS:—Such a cold snap of winter as we are now experiencing, should make the mere mention of "fireside" grateful. The very word warms and cheers one. Forlorn, indeed, is the being for whom no heart-stirring, glowing reminiscences of loving faces and warm hearts cluster around the simple syllables, "home fireside." What a kindly, sacred light streams from that beacon on life's pathway, to guide the young and cheer the old! How the heart ever reverts and loves to linger over the unquenchable embers of love and sympathy that glowed thereat!

But are not we Californians a little remiss in keeping up this grand institution? Are we careful to make such homes for our urchins as shall ensure them in after days that soul-warming retrospect that falls to the lot of so many of us? Do we even care to give much thought as to the kind of "fireside clime" we make for our families? Are not we disposed to shuffle the entire burden off our own shoulders on to those of our wives, thinking it rather beneath our manly dignity to care for aught but dollar-grabbing?

Robbie Burns thought not so. Hear him:

To make a happy fireside clime,
For weans and wife,
Is the true pathos and sublime
Of human life.

To me, Messrs. Editors, it seems that Robbie was about right when he thus wrote. At least, can any reader of the RURAL PRESS suggest any more desirable or more really profitable method of putting in one's time in this everyday world? I take it that all your readers are agreed that the making of men is of more importance than the making of money. I take it that we all would rather—at least in theory—see our children virtuous than rich pecuniarily. Plethoric purses often prove prejudicial to their possessors. Superabundant virtue has yet to be heard from. No one ever got outside too much of the real article.

It takes lots of the genuine goods to make the desirable "fireside clime." No one need think the task trivial, however abundant worldly gear may be with him. It takes more than all the substance of one's house. One must be ready to sacrifice ones' self when necessary, and that I find easier talked about than done. Self-sacrifice and no parade is the order of the day! Far more praiseworthy and far more really difficult than fleeing from our fellows, as did the early hermits and anchorites, to practice our solitary virtues, with unwashed bodies, in stinking hovels, clothed in densely-populated hair shirts.

"We need not bid, for cloistered cell,
Our neighbor and our work farewell,
Nor strive to wind ourselves too high
For sinful man beneath the sky:
The trivial round, the common task,
Will furnish all we ought to ask;
Room to deny ourselves; a road
To bring us daily nearer God."

"Happy fireside clime" making, then, means more than house-building and matrimony combined. Both are splendid things in their way, by the bye, but house-building is not necessarily home-building, and matrimony not always includes conjugal love.

It would be needful to catalogue all the virtues and throw in a few more to be sure to enumerate every necessary for the happy fireside. However, I will be bold to say it is in the power of each man to create for himself that happy clime and to bask therein, if he has the will so to do. He will find it not unworthy of his most vigorous efforts, and to ensure success those efforts will be required.

I wish all your readers a long enjoyment of their self-created "happy fireside climes."

EDW. BERWICK.

Carmel Valley, Monterey, Jan. 21, 1882.

Kittenpaws.

[Written for the RURAL PRESS by G. J. M.]

CHAPTER I.

'Mong the flowers and the fairies,
And the scratchy little pussies,
The dollies and canaries,
And the rolypoly puppies,
Let mamma live in babyland awhile.

Sweet little Kittenpaws! Is there a creature in all the universe as lovable as the three h's, a healthy, happy, handsome baby?

I challenge the world, past, present and in all its future progression, to evolve anything as precious and beautiful.

Be ye happy all ye old maids and bachelors, while the sun shines over you. Ye are wise, ye are passive, and your infinitesimal fraction of immortality, the molecule of life transmitted you from Adam dies in your selfishness when you die. But every mother is like a ray proceeding from an eternal sun whose generosity with his beams go on forever and ever.

Again, I see the useless, sleepy little creature lying on the bed beside mamma, and her eyes, with love, watching it, or the wondering eyes look up into mine, one half of the toothless mouth holding her dinner, and the other half a smile, and the head against my breast, little fat dimpled hands busy all day doing nothing, like many of your elder brothers and sisters, with just as much sense and direction in their movements and undertakings, also. Did you ever feel that miniature perfect hand, growing homelier as age increases? Something sad and thoughtful occurs to some when they look on us characterless, purposeless, outlines, which could form a text for a sermon. How well it expresses the *negative* of "His hand was against every man's and every man's hand against him." No wrong yet done; but bye and bye those little digits become flexible, reach out, pull hair, break and tear, and mother will be forced to say, "it was best before three months of age, when those fists felt like lumps of dough."

Sweet, truthful eyes that see what they should and "shouldn't." The last-mentioned verb to be parsed in the indicative, imperative and emphatic to mamma's vexation, when they spy where the last canned fruit, pies and candy are placed and tubs of water set.

One day, when three months of age, mamma could not tell why those pretty fingers pulled her hair, till she remembered a flower she had entwined among her braids. The blossom was immediately surrendered to the enemy, preventing further hair confusion.

Again, I see her take up one of her namesakes by the nose, head, legs, ribs, narrative, anywhere, pat it with the fat hand, throw it down, and cry when it scratches. Rock the cat in a sewing chair singing bye oh, bye oh, in a delicate treble the angels might envy, till the occupant, in a rock that was meant to be high and finishing, jumps off, to the evident dismay of the captor. Creeping under a bed after a feather and come out with it in her mouth, looking as cunning as possible. Or come clinging, frightened at a strange puppy. Again, with pipe of clay, blowing bubbles to the sky, watching them mount with all their spectroscopic tints and break, clapping the hands in glee, for it takes so little to please a child. Or it goes to the stove, giving it a kittenish touch to feel if it is cold, and then what a black face. How one lid is raised and the pat scraped across the middle till the whole baby is begrimed.

Again little Pattertoes, out first in the morning, pulling mamma by the dress to the cupboard saying "we'we!" And is bound, if screaming and teasing can do it, to have her breakfast before the fire is lit. Consequently, the mistaken miniature diplomat gets cold bread and milk.

You tantalizing little monkey in white dress and sunbonnet, trying to give the horse on the grass a drink out of a cup! With winning smile she looks in the creature's face while he sniffs at it, only a quarter full. But he does not attempt to bite the dimpled fingers which offer such hollow narrowness to his senses.

No young Spanish infanta ever had as many names—Bother, Toots, Paddles, Pie, Good-for-nothing, grandma's Pet, grandpa's House Pig, uncle's Juggle, mamma's Kittenpaws. But at no time could the paws be said to be soft, except when asleep. At all other times the mental curriculum was exceedingly thorny, the thoughts controlling said paws moving like a cyclone in a sea at the words "Let that alone!"

Sweet little Kittenpaws! I wonder why it is, that whatever mischief you do now, mamma says, "You dear little pet!" and loves you all the same. But at 16, if you should run away and marry against her will, she would love you no more. Is the thwarting of our vanity and power a deeper instinct than the love that now protects your innocence and helplessness?

A PERSON who was recently called into court for the purpose of proving the correctness of a surgeon's bill, was asked whether the doctor did not make several visits after the patient was out of danger. "No," replied the witness; "I considered the patient in danger as long as the doctor continued his visits."

"TOMMY," said a mother to her seven-year-old boy, "you must not interrupt me when I am talking with ladies. You must wait till we stop; then you can talk." "But you never stop," retorted the boy.

MORMONISM has some redeeming features. For instance, it doesn't throw the burden of supporting a husband on one woman.

Flirting.

[Written for the RURAL PRESS by MYRTLE.]

There is no doubt little thought ever given to this subject of flirting. Girls, do you ever think what this leads to? No. I do not think there is one of you that gives it a second thought, else there would not be so much of it; you only think of the pleasure it gives you for the present time; neither do you realize what pain it gives to the one you flirt with. You meet a young man, "perhaps for the first time," at a party; your one thought is, "won't I have some fun making a mash (as you term it) on him, you become better acquainted with him, and now see that you are gaining his affections. You begin to think it is time to throw off on him, and do so. What then will he do to drive these thoughts from his mind, "that she has only been flirting with him, stealing his heart from him only to throw it under her feet to trample on." These he does not think are very pleasant thoughts, so he tries to drown them by drinking; the habit once formed is hard to break, and he continues.

Oh, girls! you know the rest. It is a sad story, one life (as we might say) lost. How can you ever have the courage to face the world, and say there is so much pleasure in flirting? I can call such a girl nothing else but a heartless flirt. I must, before I close my little talk to the girls, say that flirting is not altogether a fault with them, but with some young men as well. Why can't there be a good example set by you girls, that you will be true and honest, and treat every man as you would like to have one of your sex treat your brother.

Mason Valley, Nev.

Halcyones.

EDITORS PRESS:—The ancient Greeks despite the dreary and desolate appearance of the landscape at the approach of the winter season, threw around it a mantle of poetry. Calling the seven days preceeding and the seven days succeeding the 21st of December, or winter solstice, "Halcyon Days." Accounting for the atmospheric quietude usually prevailing to the intervention of Æolus, the God of the winds and farther of Halcyon, whose husband, Ceyx, was lost in a storm, and thrown upon the seashore, at the feet of inconsolable Halcyon, who, in despair, cast herself into the briny deep; the pitying Gods changed husband and wife into birds, called Halcyones, or kingfishers; and legend has it that these birds float over the sea in the short days of December, rearing their broods in nests floating upon the sea, unruffled by a ripple. How charmingly blended in this fancy do we find a tribute to woman's constancy, and fiction attached to a worthless bird.

G. C. P.

Danville, Ill.

THE NEED OF TRAINED MOTHERS.—There seems to be utter blindness and stupidity among a large class of people. From what they say of the difficulty of bringing up their children, it must take an archangel to do it rightly. Still they do not think a woman who is married and settled down to family life needs much education. Moreover, in educating young women that which is universally acknowledged to be the chief business of their lives receives not the least attention. The individual who builds our ships, cuts our coats, manufactures our watches, superintends our machinery, takes charge of our cattle, our trees, our flowers—must know how—must have been especially prepared for his calling. It is only character-molding, only shaping the destinies of immortal beings, for which we demand neither preparation nor a knowledge of the business. It is only of our children that we are resigned to lose nearly one-fourth by death, "owing to ignorance and injudicious nursing management." Were this rate of mortality declared to exist among our domestic animals, the community would be aroused at once.—MRS. ABBY M. DIAZ.

THE TRUE WIFE.—Oftentimes I have seen a tall ship glide by against the tide as if drawn by some invisible bowline, with a hundred strong arms pulling it. Her sails were unfilled, her streamers were drooping, she had neither side wheel nor stern wheel; still she moved on stately, in serene triumph as with her own life. But I knew that on the other side of the ship, hidden beneath the great bulk that swam so majestically, there was a little toilsome steam-tug, with a heart of fire and arms of iron, that was tugging it bravely on; and I knew that if the little steam-tug untwined her arm and left the ship, it would wallow and roll about and drift hither and thither, and go off with the refluent tide, no man knows whither. And so I have known more than one genius, high-decked, full-freighted, idle-sailed, gay-pennoned, but that for the bare, toiling arms, and warm beating heart of the faithful little wife that nestles close to him, so that no wind or wave could part them, would have gone down with the stream, and have been heard of no more.—*Oliver Wendell Holmes.*

A JURY is a body of men organized to find out which side has the smartest lawyer.

Chaff.

WILL the "coming man" shut the door after him? He will if he comes in this office, or the going man will go out of the window.

WHEN is a girl like a music book? When she is full of airs.

MOST men are anxious for long life, but the lawyer enjoys a brief existence.

IN mercantile circles a hanging is now alluded to as a forced suspension.

THE deepest insult that can be given in Deadwood is to say: "You ain't worth lynching."

THE man who was born with a silver spoon in his mouth must have lived in stirring times.

THE watchmaker can't afford to do a cash business because he makes all his profits on time.

No matter how obstinate a man may be, he generally hauls in his horns after entering a tavern.

WHY is paper money more valuable than coin? Because you double it when you put it in your pocket, and when you take it out you find it increases.

PLAYING BARNYARD.—New Haven *Journal*: One day Billy and Sammy were playing in a mud hole, and Billy said: "Now, Sammy, les play we was a barnyard. You be the pig, and lie down and waller, and I'll be a bull and beller like everything." So they got down on their hands and knees, and Sammy he went into the dirt and wallowed, while Billy bellowed like distant thunder. By-and-by Sammy came up muddy—you never saw such a muddy little fellow—and he said: "Now, you'll be the pig, and let me beller." But Billy said: "I ain't a very good pig, except for dinner, and it'll be time nuff for you to beller when your mother sees yer close."

What is Whisky Bringing?

"What is whisky bringing?" asked a dealer in that article, one day. He meant to ask, how much is it selling for?

A gentleman who heard the remark took it in an entirely different sense from that.

"What is whisky bringing?" do you ask. I'll tell you: "It is bringing men to prison and to the gallows, and it is bringing women and children to poverty and want."

There never was a truer answer than this.

It is estimated that it sends to prison every year one hundred thousand men and women.

Twenty thousand children are sent to the workhouse annually by drink.

Three hundred murders are caused by intemperance every year.

Two hundred thousand children are made orphans every year, by this dreadful evil; and sixty-five thousand are killed by intemperance every year in this country.

Does it seem possible that man will deal out to his brother such poisonous stuff, when he knows that it will prove his ruin?

HOW TO TREAT A NEW SISTER.—The young girl who enters a large family as the betrothed of one of the brothers has a very difficult role to fill. Unless she is frank and sincere, unless she is very engaging, she is apt to be disliked by some of them. Perhaps the brother has been a great favorite, and some loving sister is jealous of her. Some brothers, even, may feel offended at having the affections of his most intimate friend stolen from him; or the charms which have won the lover may not be apparent to the rest of the family. Now is the time for good breeding. Now is the moment for the amenities. Let the young people remember to treat that young lady with peculiar courtesy, for she will never forget their conduct at this period. She is to be their sister for all time. If they treat her with respect and cordiality ten to one she will be a good sister. But if they treat her with hatred, suspicion and dislike, she will be their enemy all her days—and very little blame to her if she is. It is the cruelty of the red Indian to treat a new comer, introduced under such tender circumstances, with anything but kindness.

THE MOVEMENT OF GLACIERS.—Messrs. Koch and Klocke made a series of measurements about one year ago to determine the rate and character of the movement of glaciers, using essentially the same methods employed in a previous series of observations conducted in 1879. Their first observations seemed to prove a considerable and unexpected degree of irregularity in the movement. It was found, for example, that the same point could have a motion in both a vertical and horizontal direction, and that two points not very far apart in some cases moved at a different rate, or even in opposite directions. The observations of 1880 have, on the whole, given a rather negative result, since, for some unknown reason, the motions measured were much smaller than before, those in a vertical direction, for example, hardly exceeding the unavoidable errors of observations. Messrs. Koch and Klocke concluded that the amount of observed movement, vertical and horizontal, often did not exceed the probable error, and hence their results do not allow of satisfactory discussion, but they, notwithstanding, indicate real ice movements, and are not to be wholly referred to irregularities in the position of the observing telescope.

A RECIPE for lemon pies vaguely adds, "Then sit on a stove and stir constantly." Just as if any body could sit on a stove without stirring constantly.

YOUNG FOLKS' COLUMN.

Our Puzzle Box.

Numerical Enigma.

I am composed of eighteen letters.
My 4, 8, 17, is a fowl.
My 6, 15, 13 is a negation.
My 10, 2, 3, is a covering for the head.
My 1, 7, 17, 8, is a number.
My 12, 18, 13, is not dry.
My 18, 5, 16, is a part of the head.
My 9, 15, 12, is not high.
My 14, 5, is an exclamation.
My 11, 3, is a preposition.
My whole is the name of a widely-known author.

ANTONIO.

Decapitations.

1. Behead a kind of barrel and leave to question.
2. Behead money and leave a tree.
3. Behead a bandage and leave a conjunction.
4. Behead an animal and leave a part of the head.
5. Behead a curse and leave an article.
6. Behead a large fish and leave strong and healthy.

EDITH.

Hidden Towns.

1. Where shall we camp to night?
2. We are to leave next week.
3. Is that story exciting, John?
4. You do very well for a beginner.
5. Warn Ernest before it is too late.
6. Was Susan down at the hall last evening?
7. He will compel Hamlin to leave soon.

LEO P.

Curtailments.

1. Curtail a prophet and leave to perceive.
2. Curtail a place for sitting and leave a large body of water.
3. Curtail a liquor and leave an insect.
4. Curtail a market and leave to injure.
5. Curtail front and leave a preposition.
6. Curtail a calendar month and leave a parent.

MARS

Metagram.

First I am part of a ship; change my head and I am immense, change again, and I am final; change once more, and I am gone forever. MELANCTHON.

Answers to Last Puzzles.

NUMERICAL ENIGMA A white glove often covers a dirty hand.

CURTAILMENTS —1—Heath, heat. 2—Lace, lac. 3—Badger, badge. 4—Bales, bale. 5—Heron, hero.

DIAMOND.—
P
E R E
P R A T E
P R A Y E R S
B R E A D
O R E
S

CONCEALED TREES AND FRUIT.—1, Maple. 2, Cedar. 3, Hemlock. 4, Orange. 5, Apple. 6, Lemon.

ISLANDS.—1, New Zealand. 2, Friend-ly. 3, New Ireland. 4, Gilbert (gilt-Bert). 5, Ton-g-a.

Hester.

[Written for RURAL PRESS by MRS. W. D. ASHLEY.]

"Hester, Hester, that cake's burning!" exclaimed Mrs. Mills, as she hurried down stairs, opened the oven and revealed to dismayed Hester the sweet pyramid, blackened, and soft dough oozing from the crater-like center. Carelessness was Hester's besetting sin, and the words sounded like the crack of doom to her. Could she never be faithful? She had determined that the baking of this cake should prove that she could do her duty; had put in the wood as told, but it had burned faster than she had expected, and chancing to see some bright bits of zephyr thought she would look at them just a minute; soon she was arranging them in regular order. Mr. Mills had told her to learn the seven prismatic colors of the rainbow, and repeat them to him; violet, indigo, blue, green, yellow, red—vainly she tried to think of the sixth, orange, when the torrent of scolding roused her to a sense of her worthlessness. The best of the cake would be used at the dinner of the few expected guests, for the family must stop every outlet of waste to keep their position up, and Mrs. Mills would explain that it occurred through that careless Hester, or "Pester," as the exasperated lady sometimes called her.

Should she carry out her threat and turn her out, where could she go? Ever since her mother's protecting arms were folded in death, she had known that she was ungainly and freckled, and the feeling that her acts always fell short of her aims, and that her motives were seldom understood, gave her a sullen, grieved look. Sometimes, when lashing herself for her shortcomings, she had, in her despair, almost arraigned the Wise Father for not stopping her breath when her mother had to go. Her father had put her here to earn her board and clothes, but months had passed since she had heard from him.

Children who came to play with her, were cautioned not to be naughty like her, so they either patronized or insulted her; then in the might of her goaded spirit, she drove them from the yard, while they retaliated with "red head," "fire cat;" and but for gentle Miss Mills and her own childish prayers, she would have been all that they had called her.

The sweet Christmas time had passed. Her name had been called with other Sabbath-school scholars, a bag of popcorn and a piece of candy had been handed her, which she indignantly hung back, to the chagrin of her teacher, who told her that over 200 children had to be supplied, and but little could be given to each. Repentant blushes crimsoned her cheeks as she watched the pretty, happy children receive their many gifts. New Year's morning she had been admonished to turn over a new leaf. Ah, if they had only known how many times she had tried to turn over a new leaf!

The conviction that she was all that Mrs. Mills had called her, settled its weight on her heart. When the family had gone for the evening, her sobs broke forth. The prayers her mother had taught her, and her own simple words, were offered up, imploring help to do right. A feeling of peace came to her, but not the change of heart she had prayed for, as she knelt on the back stairs. She raised her eyes to the bright heavens, calm peace reigned there, walked out into the mild night and laid down on the green grass and began childlike to search wonderingly for Saturn, Mars and great Jupiter that Miss Lucy had once shown her, till she seemed to see far into the starry expanse; the dog lay soothingly beside her. Soon both slept. She was awakened by the old gentleman lifting her and calling, "here's the careless creature!" Stiffly she went to her bed with the vague feeling that this was the worst thing she had ever done, and that kind Lucy's voice joined in the merited rebukes of the tired family. She remembered no more till she woke and looked into the mild face of a man, who said that he was the doctor. "You have had a brain fever, my girl, and must be quiet."

Since her mother's voice was hushed she had not heard those words. Weak and happy, she watched the family who now looked really kind; they had been touched by the wild, despairing words of fever, that revealed so much of honest principle and piteous heart hunger.

"Take courage," the doctor had said. "By the grace of God and continual effort, you'll master your faults." Youth and health soon rallied, and she was at her old tasks, gaining small victories that outnumbered her defeats. In this tolerable state of comfort she was frightened to learn that the family could not afford to keep her, but would get her a home. Must she go among strangers, to be cut by the sharp blade of ridicule?

As she gathered flowers for a vase (her taste was fine), she held up a rose to look at its beauty, when she espied the doctor; instantly she was at his side, telling her trouble, beseeching him to take her home with him. He would get her a home. She dared not lose sight of him in her distress; her pleading brought to his mind the pathos of her words when ill; he had then seen that despite homeliness, the makings of a noble, sensitive woman were there; he had not the heart to shake her off, so he took her home. His surprised wife thought it the silliest thing his soft heart had ever impelled him to do, but after questioning "Hetty" (as she at once called her), she concluded to see the Mills family.

Hester's father found her clad in the soft colors she had so much coveted, going to school and through gratitude learning to be a painstaking cook. The doctor's wise, decided wife helped her through many gusts of temper and fits of carelessness and though tears for failures still wet her pillow they brought her strength and she humbly felt that she did some good.

Pretty, she could never be, but now that she was careful, freckles rarely appeared. The wand of happiness and victory gained over self had touched her face with a look of calm strength that ensured respect; her curling hair had darkened till the doctor declared it looked like nice mahogany, and she had become to him and his good wife a daughter, while the consciousness that she walked in paths of usefulness and peace sweetened all of her life.

Stockton, Cal.

GOOD HEALTH.

Action of Coffee and Sugar on the Stomach.

M. Leven has communicated to the Paris Society of Biology, some experiments which he has made on this subject on dogs, with the assistance of M. Semerie. The action of coffee on the stomach has been much discussed and variously interpreted. The majority of writers admit that coffee stimulates the circulation and provokes hyperæmia of the gastric mucous membrane; but they have not adduced experimental proof of the fact.

The contrary opinion is supported by a certain number of observers, to whom M. Leven has given in his adhesion. He recalls to mind the experiments which he made some years since on caffeine absorbed by frogs, guinea pigs and rabbits. It retarded the action of the heart, which, at the same time, became strong; it increased the arterial tension; like the vaso-constrictor agents, it dilated the pupil. Caffeine has even been used in certain cases to replace digitaline, of which it has, to a great extent, the properties, though in a smaller degree.

The latest experiments of M. Leven were as follows: He gave to a dog a meal of 200 grams of meat; he then administered an infusion of 36 grams of coffee in 150 grams of water; the animal was then killed, and, at the end of three hours, the stomach still contained 145 grams of meat, while in the absence of coffee it only contained about 100 grams. The abdominal mucous membrane was pale as well on the external surface as in the interior, and the vessels were strongly contracted. It follows, then, that coffee, producing anæmia of the stomach, retards digestion; and, the anæmia repeating itself, ends by bringing on habitual increased congestion of the stomach, which, according to M. Leven, is synonymous with dyspepsia.

It is well known, and English physicians have laid great stress upon this point, that the abuse of coffee and tea often brings on gastralgia, dyspepsia, and, at the same time, more or less disturbance of the apparatus of innervation. It is, therefore, necessary precisely to distinguish the local anæmia produced by coffee on the stomach from the more general action exercised by it over the central nervous system, and which has conferred on it the merited qualification of an intellectual drink. In opposition to coffee, sugar is, according to M. Leven, an eminently digestive substance, and he does not fail to order it in certain cases of dyspepsia. He has made the following experiments: He gave to a dog 80 grams of sugar at the same time as 200 grams of meat; six hours afterward there was nothing found in the stomach but 20 grams of undigested meat. The abdominal mucous membrane was red and turgescent; the liver was wholly congested.

M. Leven draws this practical lesson from his experiments: That the infusion of coffee should be sufficiently sweetened to stimulate the secretory function, and thus assist digestion.—*British Medical Journal.*

DOMESTIC ECONOMY.

CLEANING FINE LACE.—Fine lace, if not too much soiled, can be cleaned by covering it with a powder composed of equal parts of pulverized borax and prepared chalk. Leave it in the powder for two or three days; then put it between folds of soft muslin until clean and free from dust. If it will bear wetting, the safest and best way is to wash it on a bottle. Cover the bottle smoothly with soft muslin and fasten it securely; then wrap the lace around it, basting the edges carefully with very fine thread. Cover all with a single thickness of fine muslin, and wash in warm soap suds, changing it as often as necessary; then rinse and put to soak for 24 hours in borax water. Use no blueing and no starch; the borax will give stiffness. If anything more is considered necessary, dissolve a little white sugar, or a very little gum arabic in water, and dip the bottle into it after the other water has been well squeezed out. Stand the bottle in the sun until nearly dry; then take off the outside covering, but do not disturb the lace while it is damp. If a cream-colored tint is desirable a little clear coffee may be added to the borax water in which the bottle is soaked.

APPLE WITH RICE.—Peel six apples, core them, cut them in half, and place them in a flat stewpan with half a pint of water, four ounces of lump sugar, a few cloves and a little cinnamon. Let them boil gently till they become quite soft, then remove them, and let the syrup boil away till reduced to a couple of tablespoonfuls, when you strain it over the apples. Put into a stewpan half a pound of rice and a quart of water; leave it on the fire till it boils. Drain off the water, and add one pint of milk, four ounces of white sugar and the thin rind of a lemon. When the rice is thorougly cooked remove the lemon rind and work into it the yelks of three eggs; then put it in a heap on the dish in which it is to be served; place the apples on the top, and cover the whole thoroughly with the whites of the eggs beaten up into a stiff froth with one tablespoonful of lump sugar. Sprinkle powdered sugar over and bake half an hour in a cool oven.

FROSTED ORANGES.—Six large, sweet oranges peeled and every particle of white skin removed. Take a cup of powdered sugar, divide, and stir into one part a few drops of liquid cochineal. Spread on a dish in the sun to dry, and if lumpy roll to powder. Beat the whites of two eggs to a stiff froth, dip half of the lobes into the whites and then roll in the pink sugar, the other half into the egg and white sugar. Place upon a piece of white paper to dry. Arrange in a pretty glass disk and garnish with lemon leaves if you can get them.

PRUNE PUDDING.—Cook half a pound of prunes with water enough to cover. When soft enough, take out the pits, sweeten to taste, and continue to cook until the syrup is well reduced, and quite thick. Chop the prunes in it, and add the beaten whites of six eggs. Put into a buttered pudding dish and bake a light brown. Serve with sweetened and flavored cream. If the cream is whipped until stiff, so much the better.

LEMON PUDDING.—Into beaten yelks of six eggs stir one cup sugar, one-half cup water and the rind and juice of two lemons. Soften in warm water six crackers, lay them in the bottom of a dish, pour the mixture over them and bake until firm. Beat the whites with six tablespoonfuls sugar, spread over the top and brown. Eat either hot or cold.

POTATO PUDDING.—Boil and mash fine six good mealy potatoes; add the yelks of five eggs, one-half lb. white sugar, one-fourth lb. butter; beat half the whites to a stiff froth and stir in; add juice and grated rind of one lemon, a little salt and a pint of milk. Bake an hour. Mix the reserved whites with sugar and ice the top. Eat at once.

APPLE MERINGUE PIE.—Make and bake an open pie with stewed apples; spread over the top the white of eggs well whipped and sweetened. Brown delicately and eat cold.

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SAN FRANCISCO:

Saturday, January 28, 1882.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Castle Rock, near Columbia River, 57. Percheron Stallion "Brilliant;" Bundock's Terra Cotta Butter Refrigerator, 65.
GENERAL EDITORIALS.—The Duroc Swine; The Produce of an Orchard; Snow-Stopped Ditches; A Scene on the Columbia, 57. The Week; The Prize Cattle Car Contest; The Food Value of Alfalfa; Sheep Losses; Electrical Action of the North Wind, 64. California for Horse Breeding; Premium Horse; Butter Cooling by Evaporation; New Citrus Fruit Pavilion at Riverside, 65.
CORRESPONDENCE.—Humboldt County Notes; Pleasants' Valley; Fruit East and West, 58.
THE DAIRY.—The Dairy Short Horn, 58.
THE FIELD.—Smut in Wheat, 58-9.
THE VINEYARD.—Ten Years in California Raisin Making, 59.
POULTRY YARD.—Do Chickens Pay? Poultry Notes, 59.
PATRONS OF HUSBANDRY.—Song for the Grange; Grange Elections; Washington Grange; Bereavement, 60.
AGRICULTURAL NOTES, from the various Counties of California, 60-61.
NEWS IN BRIEF on page 61 and other pages.
MISCELLANEOUS.—Snow and Roses, 61.
HOME CIRCLE.—What Makes a Man (poetry); Absent; The "Fireside Clime;" Kittenpaws; Flirting; Halcyones: The Need of Trained Mothers; The True Wife, 62. Chaff; What is Whisky Bringing? How to Treat a New Sister, 63
YOUNG FOLKS' COLUMN.—Our Puzzle Box; Hester, 63.
GOOD HEALTH.—Action of Coffee and Sugar on the Stomach, 63.
DOMESTIC ECONOMY.—Cleaning Fine Lace; Apple with Rice; Frosted Oranges; Prune Pudding; Lemon Pudding; Potato Pudding; Apple Meringue Pie, 63.

Business Announcements.

American Concentrated Lye, Wm. T. Coleman & Co., S.F
Japanese Nursery Depot, H. H. Berger & Co., S. F.
Flowering Seeds, Etc., V. H. Hallock, Sons & Thorpe.
Vine-Setter and Hole-Digger, J. Stanley, Mission San Jose.
Seeds, Hiram Sibley & Co., Rochester, N. Y.
New Perennial Rye Grass Seed, B. F. Wellington, S. F.
Carp Fish For Sale, Levi Davis, Forestville, Cal.
Small Fruits, J. T. Lovett, Little Silver, N. J.
Catalogue of Plants, John Saul, Washington, D. C.
Toulouse Geese For Sale, M. Dwight, Fulton, Cal.

The Week.

The greatest event of the week, and that comes to us latest, is the announcement that the assassin Guiteau has been found guilty of murder in the first degree, and the law will be satisfied by the death of the infamous wretch. It was hard to believe that any other conclusion could be reached, and yet the murderer was given so much license in his behavior during the trial, that it has been sometimes feared that the jury would be misled into a disagreement through his simulation of insanity. But the result shows that the apprehension was needless, and that their perception of guilt was unclouded. It would have been inexpressibly unfortunate if this vile man had escaped the gallows. It would have made every President chosen by the people a mark for the shot of those seeking notoriety. It would have convinced all people with murderous desires that they could take life without endangering their own. As the event has proved, the miserable "insanity dodge" of the lawyers has received a severe blow, and it is to be hoped that the effect will be the vindication of the majesty of law which has sunken into disrepute.

And the rains have come—quite generally distributed but quite light as yet. But the clouds are still thick and dark. As we write the report comes of rain in Los Angeles, San Diego and Visalia and the country thereabouts. A good drenching which the coming week may bring will chase the doubts from all minds and give everything a forward impetus. Let it come.

The Prize Cattle Car Contest.

Many readers will remember the outholding of a reward of $5,000 by the American Humane Association for the best cattle car to be used in the railway transportation of horned stock. The offer was made in July, 1880, and the following were named as some of the points to be secured by the designers: Arrangements which would permit cattle to lie down, and to feed and water them while in transit. There were a number of plans sent from this coast, and much interest has been manifested here in the competition. At the last meeting of the Humane Association held in Boston, Mass., the final report of the committee of judges was received and adopted. From a full copy of the document which has been sent us, we compile a narrative of the contest:

There were received in all, 710 models and plans from 636 different competitors. One competitor sent ten models in one box; several sent each a less number, while two or more models or plans were sent by each of several competitors. A large portion of the models and drawings were very crude, but some were finely finished and executed. Every State and Territory in our Union was represented, except the Territories of Washington and New Mexico. England, Russia and Switzerland were also represented, while the Dominion of Canada contributed liberally. Among the competitors were eight women, from the same number of States. One competitor was a young lad of 14 years; and one model was sent by a man who stated that he had never even seen a railroad train in his life! Seven competitors were preachers. It is plain from the report that the committee gave a great deal of time to the examination and comparison of the plans and models. They have enumerated the general features used by different competitors as follows: Sixty adapted the old style stanchions, with various modifications; 63 had food-bins on the roof; 82 had movable partitions across the car; 56 had horizontal bars across, or diagonally from side to side of car, for separating cattle; 21 had canvas, wire-cloth or rubber stall partitions; and 10 used chains or ropes for that purpose. Fifty-three had water reservoirs on the roof; while 52 had the reservoirs on the under side of the roof. Three suggested a special car, as a "tender" for each train, containing supplies and a force pump, operated by a belt from the axle. Four proposed pouring the water on the roof, and to utilize the rainfall also, by having a raised ledge at the eaves; 7 constructed water and feed troughs of wood, or of wood with canvas joints, to be folded up when not in use; 19 had troughs under the floor; 55 had troughs made to be turned over, for cleaning. Sixty-five had hay racks in angle of side and roof, while 11 had them on the outside of the car. Thirty-three had stalls parallel with side of the car; 29 had automatic feeding and watering apparatus. Twenty-four had belts or beams lengthwise through the center of the car, to come up under the bodies of the animals, to prevent them from lying down; while 16 had hammocks or slings, to accomplish the same purpose. Sixteen had inclined floors, to facilitate drainage.

Many had peculiar and oftentimes ingenious arrangements, noticeable chiefly for their impracticability. Among these may be quoted the following: Seventeen had only one door to the car; 7 had a door at each end of the car, as in passenger cars; one placed the floor on rollers and springs independent of the car body, to nutralize jars and shocks, while 3 accomplished the same result by suspending the body of the car between vertical posts; and one, a lady competitor, proposed to put rubber tires on the car wheels. Two used lamps for heating water, to prevent freezing; four proposed canvas screens on the outside of car, to keep out dust and to keep in warmth. Four proposed using a windlass, with ropes and pulleys, to draw the animals to place; and many other impracticable devices were presented, too numerous to be recapitulated here.

Many of the different models were almost alike in construction and looks; notably in the case where two ladies, one residing in Chicago, and the other in a distant State, each sent a model, identical with the other in shape, size and idea, the only difference being in the materials of which they were constructed; and other striking coincidences were observed.

After months of study, the committee arrived at the following decision: "None of the designs offered in competition met the conditions of the award, so that no competitor is entitled to the prize." The reason for this decision was that there was no worthy design which did not interfere with some previously patented car. Upon this point the judges say:

> The *ideas* contained in the great mass of designs submitted, are almost identical in character with the *ideas* contained in the patents. So that, after rejecting all designs which did not meet the conditions in other respects, and those which were manifestly impracticable, and those which consisted merely of old and well-known devices, it was found that of the remainder there were absolutely none which had not been in some way shown, described or covered in the patents already granted. There were very many ingenious devices presented (many of them, *of themselves*, patentable), and many designs which were undoubtedly new and original with the competitors who sent them to us; but the stubborn fact remained, that, behind them all were the broad, underlying claims of some patent or patents, rendering it manifestly imprudent for the American Humane Association to purchase any one of them. By so doing, it would thereby simply be "purchasing a law-suit," or law-suits, of the most costly and unsatisfactory kind,

The association has withdrawn its award, and the money will be held as a fund "to be used hereafter, in the discretion of the trustees, in getting into use the best car or cars, or in such other ways as may best secure the end desired by those who subscribed for said fund." Already since the publication of the offered prize, and mainly incited thereby, several improved stock-car companies have been, or are being formed to operate such cars. If it be possible to make a successful "humane" stock car which shall not conflict with previous patents, the inventive genius of the country will not rest content until it has accomplished the feat. The action of the association has, besides, drawn the attention of our whole nation and other nations to the crying need of kinder treatment of live stock in transit; and interest in and watchfulness on this subject is sure to increase greatly in the near future.

The Food Value of Alfalfa.

The breadth of alfalfa is constantly increasing, and its value as stock feed is being more and more appreciated. As the irrigable area of the State is extended, alfalfa growing increases. We had some discussion, a few months ago, on the value of alfalfa, and much local experience was drawn out. The weight of the evidence was greatly in favor of the plant. We have just come across some data in our English reading relating to lucerne, which is alfalfa. The point made is the superiority of alfalfa over ordinary clover. It is shown that lucerne is justly held in high estimation by horse breeders. Stephens, in his work, the "Book of the Farm," computes under this head that three horses (heavy cart horses) can well be maintained for six months—May to October—on one acre. The following table, taken from "Our Farm Crops" (Wilson), is interesting for comparison:

	Lucerne.	Clover
Nitrogenous compounds	3.83	3.19
Non-nitrogenous (e. g.)		
Gum, sugar, etc.	13.62	13.13
Fatty matters	.82	.....
Woody fiber	8.74	.....
Ash fiber	3.04	1.92
Water fiber	69.95	81.76

THE COMPOSITION OF THE ASH.

	Lucerne, or Medicago Sativa	Clover, or Trifolium Pratense.
Potash	33.16	31.24
Lime	24.79	26.32
Magnesia	6.28	10.34
Peroxide of iron	2.68	1.51
Phosphoric acid	7.80	5.01
Sulphuric acid	5.79	3.63
Chloride of potassium	14.02	11.08
Chloride of sodium	2.30	8.45
Silica	3.18	2.39

In England, between 8 and 12 tons per acre up to 20 and 30 tons per acre can be realized where attention to details have received attention; in ordinary practice 12 to 14 tons is considered a very fair crop. The greatest vigor is attained in the fifth year.

Sheep Losses.

California has to regret the sacrifice of many lambs and not a few sheep this year. Now and then, in former years, there have been considerable losses in the upper half of the State by exposure to the violence of wintry storms, but the loss comes from other causes this year. In the north the sheep have had a very comfortable time, the feed having started early, and the weather having continued mild. But the sacrifice has come in the regions southward, where the drouth, rather than the cold, has oppressed the flocks. Thousands of lambs have fallen beneath the hammer stroke at birth, because the feed was not enough to nourish their dams during the suckling, and the death of the offspring was the only chance of preserving the life of parents. Many men who have shown considerable enterprise in securing well-bred bucks to improve their flocks have been compelled to destroy the young which they had taken pains to secure. The lesson of this year's experience, as of the previous years in which losses have occurred, is plainly that efforts should be made to secure safety supplies of feed for the unfavorable season which is likely to come. And to do this there must be an effort by sheep owners to reduce their operations to a farming basis, rather than trusting wholly to the old wandering system. Sheep without land is always dangerous. But the whole trouble does not come to the landless sheep owners. Others, who might have had good supplies of hay, or straw, or corn fodder, have sold or burnt the one or the other, thus trusting wholly to the weather to preserve their enterprises. There will be less of this in future. Sheep owners are continually coming upon a more enlightened system of care, and the present years' experience will hasten the movement.

VITICULTURAL REPORT.—Just as we go to press, we receive an advance copy of the "First Annual Report of the Chief Executive Viticultural Officer to the Board of State Viticultural Commissioners, for the Year 1881." We are unable to give the report more than a cursory examination, but that shows it to be a document of exceeding interest, and we shall refer to it hereafter. The report is published by the State, and we hope copies enough have been arranged for, so that all interested may have a copy.

Electrical Action of the North Winds.

At the last meeting of the Academy of Sciences, there was a discussion of the effects of the north wind by the savants, which may interest our readers. In the course of his remarks Dr. Harkness stated that it was his opinion that the damage to plants done by our northerly winds, was not due to actual desiccation in drying up the sap, but to some peculiar electrical condition, which arrested the cell growth. Before such northers plants shrivel, curl and show signs of great distress, but with the return of soft, moist magnetic breezes from the equator, they soon resume their fresh and vigorous appearance. These changes are far too sudden to be due to either desiccation or absorption, but are attributable to a temporary cessation of cell rotation, induced by electrical disturbances, which we know take place during the continuance of our northerly winds.

Mr. C. D. Gibbes, C. E., remarked that when surveying during our north winds, in the San Joaquin valley, the electrical disturbance was so great as to cause the needle of his compass to fly up against the glass and become useless during the first part of the day, when in the field; but that if he took the same compass into a warm, moist room, it again acted normally. Engineers in Santa Clara and Calaveras counties report the same action and dip of the magnetic needle during the prevalence of our dry northers.

Dr. Harkness said the northers affected the human skin. They caused an uneasiness, which results in dog fights, runaway horses, cross dispositions, pallid faces, etc. Dry atmosphere is a perfect non-conductor, but all moist plants and animals, as well as men, then become so many miniature lightning rods. The nerves are at such times continually irritated by a constant succession of tiny blows, like telegraphic ticks, against the nerve centers. They contract and produce a congestion of the organs; the blood becomes turbid, while kidneys, liver and lungs all suffer.

Dr. Henry Gibbons, Sr., thought this electric action more subtle than from any apparent mechanical evolution of electricity from friction of the passing wind over the surface of the earth. He said all persons felt cold, for it drove the circulation from the surface to the interior of the body, as Dr. Harkness so beautifully described 20 years ago. Its affect on certain diseases has been marked. The death-rate has been claimed to increase at such times. He had a patient whose eyes always blinked and snapped during a north wind, even in a warm, moist room, entirely protected from direct contact with the wind.

Dr. Harkness said we were always surrounded by electricity, but did not perceive it until its equilibrium was destroyed, when it became manifest. In some parts of India silk underclothing is necessary to comfort, at certain altitudes, during dry north winds, and in other parts no relief is found in this clothing.

COTTON SHIPMENTS.—Everything indicates that cotton will soon cut a figure in our produce reports. As we have shown from time to time, there are experiments being tried in nearly all parts of the State from Tehama to Los Angeles, and the weight of experience has been favorable. Kern county has usurped the place which was held some years ago by Merced county, although the latter still grows cotton and may yet be the banner county. We read in a Bakersfield paper that 96 bales of cotton were shipped from the Belleview farm to San Francisco the past week, for the use of the Oregon woolen mills, located at Salem, the capitol town of the State, which are noted for the fine cassimeres and blankets they turn out. The agent of the company through whom this transaction was effected says this cotton is superior to the article they have heretofore imported from the cotton States.

ARTIFICIAL LEATHER.—This new article of manufacture, already described in these columns is meeting with much encouragement. It is said to have all the essential qualities claimed for it, and is likely to come largely into use for many purposes as a substitute for leather. It is flexible and durable, is not affected by temperature, is impervious to oil and water, is made of any desirable color and weight, the colors do not fade, and it is very much cheaper than leather, and for many purposes superior to it. It is particularly well adapted for curtains, desk covers, panel and ceiling decoration, bookbinding, satchels and a variety of small wares. It is made from 36 to 50 inches in width, and as a substitute for leather has given satisfaction to all who have tried it.

CASSIDY has introduced in Congress a bill appropriating $100,000 for expenditure, under the direction of the Secretary of the Interior, in sinking two artesian wells at points to be selected by him on public lands in Nevada, to test the feasibility of reclaiming large tracts by this method in that region.

DOUBLE SHEET NEXT WEEK.—We expect to have next week a 24-page edition, which will compensate for our return to 16 pages in this issue.

California for Horse-Breeding.

The Roadster and Fast Trotter.

[Written for the PRESS by JOSEPH CAIRN SIMPSON.]

The articles published in the RURAL PRESS some time ago were devoted to the consideration of breeding the thoroughbred horse, and, consequently, were not of so much interest to the farmers of California as those will be which treat of a class of more general use. Still it is acknowledged by those who have given thought to the subject, that the influence of the thoroughbred has been the more potent than any other breed of horses in perfecting all kinds in use, unless, perhaps, those which are kept for heavy and slow draft. Wherever activity is required, a liberal proportion of the blood is found essential, no matter whether it is intended to haul light weight over the road at the rate of 12 or 15 miles an hour, or to take a load of a ton or more, on a heavier vehicle, at a good pace.

The farmer, more than anyone else, is dependent on the working value of his horses. The difference to him between a really good team and one which is only of medium ability, represents a round sum. The market value, when he has stock to sell, is something more tangible, and he realizes that a horse, which finds a ready purchaser at $200, brings a return of profit, while the inferior, dull of sale at one-half the sum, has entailed an actual loss. But he does not, in many cases, realize the money which is returned from an increased capacity to do the work, and is oftentimes tempted to keep the inferior on account of the price which he receives for the better, and being under the false impression that he can "get along," in some shape, with the poorer, he does not "cipher out" the marginal dollars there are in the work of a month, or a year, between the two, and is in complete ignorance of what it is. Years ago in Iowa, the writer had an illustration which is appropriate. There stood in that section a thoroughbred stallion which had acquired a high reputation as the sire of trotters and road horses, and a breeder near Chicago wanted to obtain some of the mares of his get to place in his stud. A farmer had a pair of them, their dams also being by a thoroughbred. To induce him to sell, $1,000 was offered for the team, and this high price he declined. Knowing that he used them for a farm team, I asked him why he refused the offer, which was more than double the value at which the best were held. His reply was, that they could plow one-half more land in a given time than any other team he had ever owned; that he could take a load of grain to the river and return in half a day; whereas, with others, the whole day was so nearly occupied that it was virtually expended; that when he took his family out, it was pleasure to drive them, they were so cheerful, and trotted with so much ease; and then when he got colts from them, he could reasonably expect to have animals which would fill their places, or which would sell for remunerative prices. He further stated, that if he sold at $1,000, and invested $400 of it in another team, that even at as high a rate of interest as 10% there would be only $60 a year, and this would not be equivalent to the extra work they would do in one month in a busy time. The logic was certainly good, and the future proved the correctness of his reasoning, as he sold many colts from them at good figures, and had a succession of animals of extra quality for his own use.

In the same county, another farmer sold from two mares, mother and daughter, and by the same thoroughbred horse, four colts for $6,500; and another one sold two from one mare for $1,300. Their neighbors, who were not so enterprising in their breeding operations, and who were under the impression that any mare was good enough to breed from, and the cheapest stallion the best to patronize, had to be contented with prices ranging from $75 to $125, and with a still greater loss from poorer horses to do their work with. At this day, however, there is little necessity for occupying much space with arguments in favor of using the best animals obtainable for procreative purposes, as that is so generally conceded that it may be taken as granted. The question is, what breeds are the best, and what are the best methods of rearing and training. It will also be pertinent to take into consideration the different circumstances attending the production of roadsters and fast trotters, as that has a bearing which is of vast importance, both as regards the parentage and rearing. What would be the proper method on a large breeding establishment might be far beyond the reach of the man who is breeding on a small, or comparatively small scale. The wealthy producer can purchase stock which have been proven, and can pay prices which are far in advance of what the farmer can invest, and he has the command of sires and dams which are of tried excellence. These are phases which, at first sight, appear as though the large breeders must monopolize the business, and that there can be no successful competition on the part of those who have limited means, and who must make a profit on the capital and labor invested. This does not necessarily follow. The breeding of roadsters, and, incidentally, fast trotters, may be incorporated into a system of general husbandry, by those who are favorably situated, with good results. It would certainly be poor policy for a majority even of farmers to engage in the business. There is a strong temptation when a neighbor has sold a colt for a large sum to take a chance in the same lottery, and the one prize overshadows the many blanks which others have drawn. He is prone to overlook and consider of trifling moment that which is really of the first importance, and thinks, that as he has a mare of something of the same blood, and that he can secure the services of the same stallion, he will be equally fortunate.

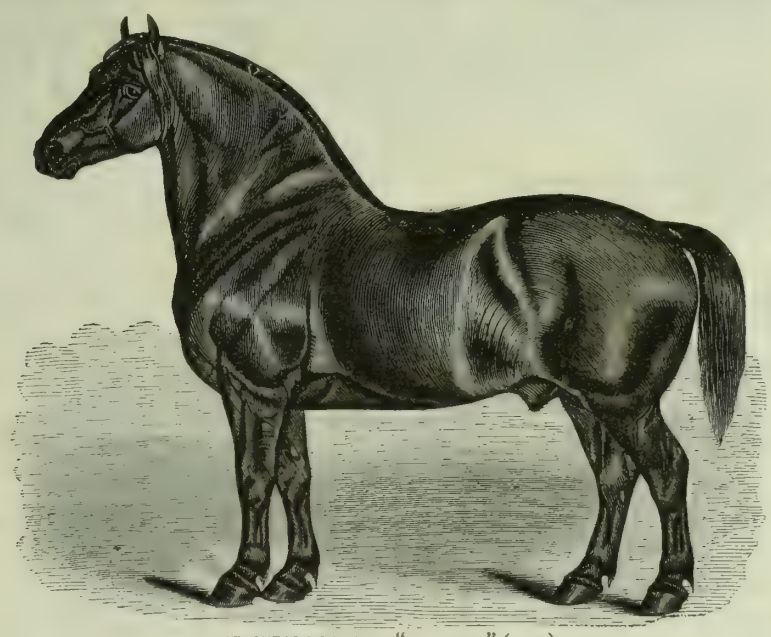
As the consideration progresses, I hope to show, that though the proper foundation of the right kind of blood is essential, that this has to be supplemented by other things of equal might. A person who has an idea of breeding, rearing and training roadsters and fast trotters may gain information from the perusal, whether he is possessed of proper facilities, for many years of practical experience has taught me that, while there is a large element of good or bad luck connected with the business, there must be the proper system observed to make the good fortune available. There is an element of uncertainty in breeding stock of any description. This is reduced to a minimum when beef, mutton, pork, wool, butter, etc., is the product desired. When mental and physical qualities of a certain kind are the aim, there is the maximum of precariousness, and the unknown quantity oftentimes upsets the best directed efforts. There may be two of the same parentage so dissimilar that there is the faintest trace of family resemblance; and in another case, brothers may look so nearly alike as to make individual identification troublesome, and yet be far apart in mental force and physical vigor. Two colts from the same sire and dam may be awarded the same care in rearing and education, and one prove of great value, the other comparatively worthless. But if both have the same inheritance, and one have the faculties developed, while the other is neglected, there will be certain failure in the one debarred from the privileges, and this is what I mean by saying that to good luck *must* be joined proper management.

In following the subjects from the selection of the stock through the various stages of breeding, rearing and training, the aim will be to theorize as little as possible, the recommendations being based on what has been proven to be the correct methods. Theories, however, cannot be abrogated entirely when the subject is not susceptible of actual demonstration, and we are forced to reason, at times, from a point which is partially hypothetical.

The roadster and fast trotter have been connected as the text for the contemplated papers, as they are so intimately connected that the dividing line is exceedingly attenuated. The only difference is the purpose to which they are applied, and a more proper heading would be "trotters for the track and road." But there are large numbers of driving horses which are not fast enough to trot in races with any degree of success, which command high prices from a combination of qualities which are almost as rare as high rates of speed, and with the advantage to the breeder of being more easily produced when the proper degree of intelligence is observed in the production. The qualities sought for are beauty of form, good size, tractability, endurance and speed at the trot beyond an ordinary degree. Speed, of course, is the quality which brings the highest price when the rate is extraordinarily rapid, the rarity controlling the price and making the individual hopes of breeding the few slight indeed.

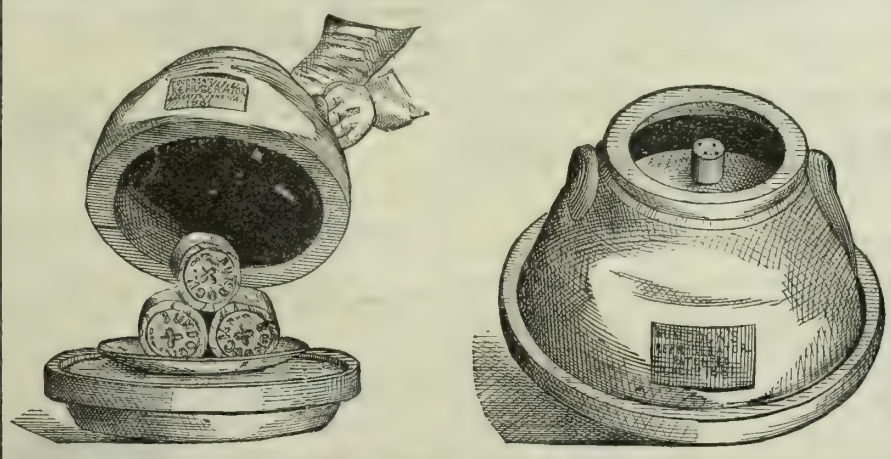
The farmer who is eligibly situated can expect to produce road-horses, with a reasonable degree of certainty, and the education will not compel such rigid attention, as when the object is to rear trotters for the track. To develop the high rate of speed which is required at the present time, demands that every point shall be attended to, and especially that early and constant training be pursued. The colts must have the first care, and from the time of weaning, not a day allowed to pass without proper instructions. The hurry of seed-time and the busy days of harvest, will compel attention to other duties than the daily exercising, and there is a lapse which will undo, in a few weeks, the work of months. The contemplated roadster does not require this strict looking after, and many fast trotters have received their early education on farms, where all were too busy in the hurried seasons to give them more than ordinary care.

In this initial chapter, it is only intended to give a outline sketch, scarcely full enough to be called an introductory. The subject will properly come under several heads. First, the stock which is necessary; then the mating, which is likely to be followed by the right sort of offspring; the rearing and training. The presentation of the requisites which are necessary to success, will give the readers the opportunity of judging for themselves, whether they are prepared to engage in the enterprise, with a fair chance to make the business remunerative.



PERCHERON STALLION "BRILLIANT," (1271.)

Imported and owned by M. W. Dunham, Wayne, Ills. One of his herd that took the Grand Sweepstakes Prize of $1,000.00 at the Great Chicago Fair, 1881.



BUNDOCK'S TERRA COTTA BUTTER REFRIGERATOR.

Premium Horse.

We give on this page a portrait of one of Mr. Dunham's famous prize winners at the late grand fair in Chicago. The way in which Percherons and their grades are now selling in this State, is giving a great impetus to the breeding interest.

BUDD DOBLE, the well-known horseman, has followed the example of all the rest of his family, and after a long connection with the turf, has finally withdrawn from it. He goes into the commission business in the Chicago Board of Trade.

Butter Cooling by Evaporation.

The production of a cool atmosphere, by arranging for the evaporation of water, has been long known and employed in various ways. One of the latest applications is the butter-cooler, shown in the engraving on this page, which was patented last July by H. F. Bundock and is being introduced on this coast by B. N. Bugbey of Sacramento. It seems excellently adapted to the use intended, to wit, the preservation of a small amount of butter, meat, etc., for family use. It is made of terra cotta and consists of three pieces, viz.: The pan, which is the base; the water-table, or plate, which rests within and near the top of the pan; and the cover, which is bell-shaped and double-walled, the inner wall being oval, from the center of which rises a chimney whose top is on a level, or nearly so, with the top of the outer wall, which is also slightly raised and left open to receive water, the opening being about five inches in diameter. The chimney, which is perforated, answers as a ventilator to the chamber inclosed by the inner wall. Between the outer and inner walls of the cover is left a recess of one and one-fourth inches space. This recess is for the receipt of water, as is also the recess or reservoir beneath the water-table in the pan. In using this refrigerator, the upper and lower recesses are first filled with drinkable water; a ten-inch dining plate, containing from one to three two-pound rolls of butter, is placed on the water-table and the cover is adjusted. Butter kept in this refrigerator, as above described, is preserved cold, sweet and fresh. It is a fact, long established by all connoisseurs of butter, that any vessel, cabinet or refrigerator, made of wood or any other substance, often has an odor which destroys all the rich aroma contained in fresh butter; also butter kept in the same vessel, cabinet or refrigerator with vegetables, any kind of meat, or any substance carrying a scent, often becomes so tainted as to be totally unfit for table use and even for culinary purposes. People who thus keep butter are continually complaining of their dairyman, while the fault lies in their manner of keeping the butter. The use of terra cotta and by keeping the butter within a central chamber surrounded by water, if not neglected, cannot fail to keep the butter cold, sweet and fresh.

In this cooler the same principle of cooling is employed as in the well-known Spanish water jar, the porous ware allowing the water to evaporate slowly from the surfaces which are exposed to a current of air. It is not unlikely that the same arrangement might be found of use in keeping milk cool in the interior parts of the State, where the heat sometimes interferes sadly with dairy arts. It is possible that some inventive genius could arrange a dairy-room with a ceiling or walls of plates of porous terra cotta, which could contain a water chamber, and, by arranging for the entrance of a current of air, secure a temperature which would keep milk sweet until the cream had arisen properly.

New Citrus Fair Pavilion at Riverside.

Swiftly and vigorously the Riverside Citrus Fair Association is moving forward to preparations for the Fourth Citrus fair which will be held in Riverside March 22d to 24th, 1882. The *Press and Horticulturist* of last week gives some particulars concerning the new pavilion which is to be constructed forthwith. All the Citrus fairs held in Riverside have been successful and the necessity for a larger exhibition hall has been apparent. Last spring we saw splendid material enough to fill a hall at least twice as large as the one which contained it. The accumulating success of preceding exhibitions indicates that this year's fair will take its proper place in the progressive series. The association has therefore entered into contract for the construction of a pavilion which will probably be located on the northwest corner of Main and Seventh streets, within half a block of the two hotels; it will be a building 135 ft. in length by 56 ft. front, and amply lighted. The ground floor will consist of a main hall, 85x55 ft.; stage, 24x55 ft.; two committee rooms, 20x24 ft.; and hall, 14x24 ft. Stairs in the main hall on either side of the main entrance will lead to a large room over the committee rooms and main entrance, which will be 55 ft. long by 24 ft. wide. This can be used for the meetings of the society or other public meetings when the main hall is too large. The contract for the carpenter work has been let to Messrs. Whitney & Langley for the sum of $4,191; the brick and mason work to E. M. Sheldon for $263; and the painting to Noland Brothers for $200. The entire work is to be completed by the 11th of March, under a forfeit of $50 per day for any delay beyond that date. The lighting and seating of the pavilion will be a separate matter and will cost $850. Nearly the entire amount of the stock has been subscribed, but a little is still wanted. Subscriptions are being received daily, and it is very desirable that when the building is completed the entire work will be paid for.

THE Central Pacific Railroad Co. has declared the usual semi-annual dividend of 3%, payable February 1st.

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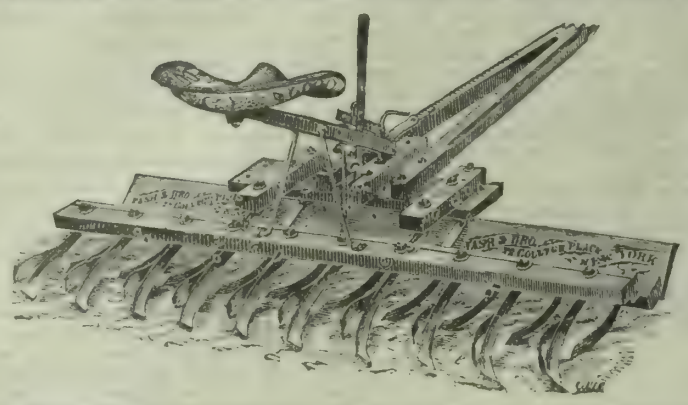
PULVERIZING HARROW, CLOD CRUSHER AND LEVELER.

For the Orchard, Vineyard, Nursery and Grain Field.



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The "ACME" subjects the soil to the action of a Crusher and Leveler, and at the same time to the Cutting Lifting, Turning process of double rows of STEEL COULTERS, the peculiar shape and arrangement of which give Immense Cutting Power. The entire absence of Spikes or Spring Teeth avoids pulling up rubbish. It is especially adapted to inverted sod, hard clay and "slough land" where other Harrows utterly fail, and also works perfectly on light soil.

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COMPOUND OXYGEN — NOT A DRUG.

A NEW TREATMENT for Consumption, Asthma, Bronchitis, Catarrh, Dyspepsia, Headache, Debility, Neuralgia, Rheumatism, and all Chronic and Nervous Disorders.

ACTS DIRECTLY upon the great nervous and organic centres, and *cures by a natural process of vitalization.*

HAS EFFECTED REMARKABLE CURES, which are attracting wide attention.

HAS BEEN USED BY Rt. Rev. John J. Keane, Bishop of Richmond, Va., Hon. Wm. D. Kelley, T. S. Arthur, and others, who have been largely benefited, and to whom we refer *by permission.*

IS STRONGLY ENDORSED: "We have the most unequivocal testimony to its curative power from many persons of high character and intelligence."—*Lutheran Observer.* "The cures which have been obtained by this new treatment seem more like miracles than cases of natural healing."—*Arthur's Home Magazine.* "There is no doubt as to the genuineness and positive results of this treatment."—*Boston Journal of Commerce.*

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Depository on Pacific Coast.

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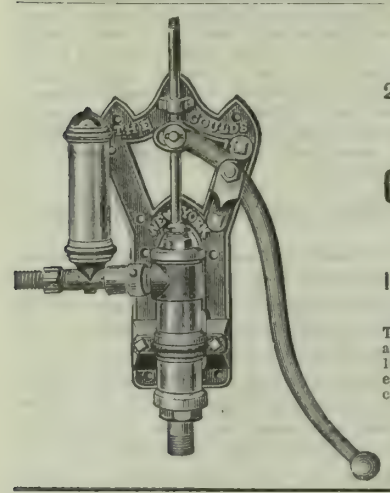
All orders directed to H. E. MATHEWS, 606 Montgomery street, San Francisco, Cal., will be filled on the same terms on which we fill orders sent directly to our office in Philadelphia.

Patients ordering from our depository in San Francisco, should, at the same time, write to us, and give a statement of their case, in order than we may send such advice and direction in the use of the Treatment as their special disease may seem to require.

DRS. STARKEY & PALEN, Nos 1109 and 1111 Girard Street, Philadelphia, Pa.



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The Merigot Pump and Spraying Nozzle.

Largely used for Applying Insecticides in Orchards around San Jose.

FAVORABLY MENTIONED AS SERVICEABLE AND REASONABLE IN PRICE BY THE SPEAKERS AT THE SACRAMENTO CONVENTION.

☞ The Merigot Spray-Tip Nozzle is the best known.—*Dr. Chapin's Address.*

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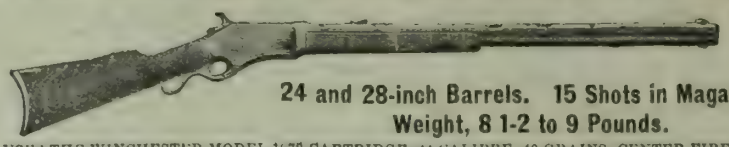

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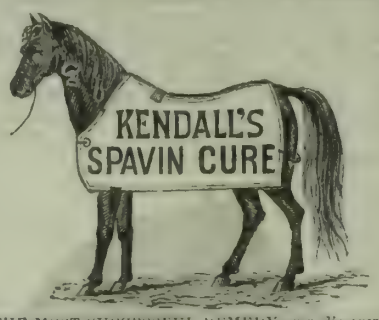

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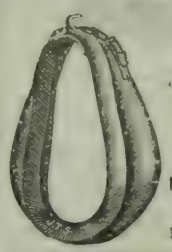

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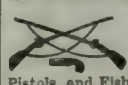

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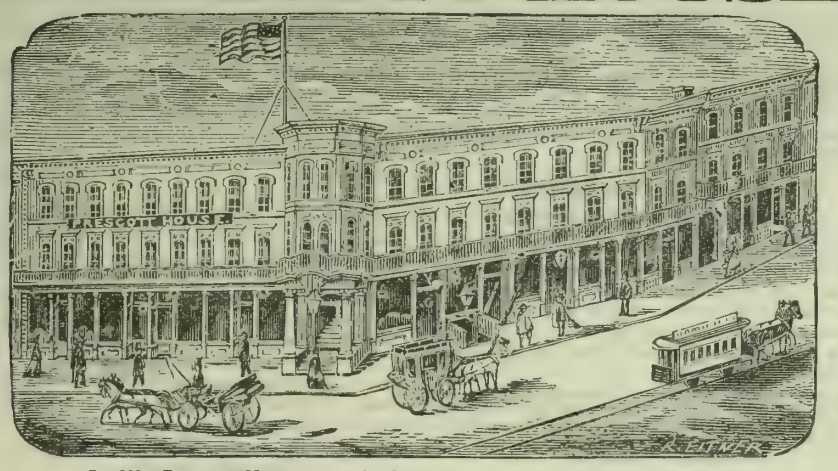

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In 10,000 Shares of $100 each.

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These Mills and Pumps are reliable and always give satisfaction. Simple, strong and durable in all parts. Solid wrought iron crank shaft with *double bearings* for the crank to work in, all turned run in babbitted boxes. *Positively self regulating* with no coil spring or springs of any kind. No little rods, joints, levers or balls to get out of order, as such things do. Mills in use six to nine years in good order now, that have never cost one cent for repairs.

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This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the best and most desirable Gang Plow in the world.

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For carriages, pumps and whiffletrees and other couplings. No bolts, no rattling and no unhitching. State and County rights for sale. Address HUNTER & FRANCIS, Merced, Cal.

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[Established in San Francisco in 1870.]

This is the leading farming journal on the western half of the continent, and second to none in America. It is well printed and illustrated, weekly. Contains an unusual amount of fresh, original farm, household and family circle literature. Careful attention is paid to giving full and reliable weekly market reports. The following are among its ably conducted departments: Editorials on agricultural and other timely and important subjects of live interest to farmers and their families; agricultural, and other useful and ornamental illustrations; correspondence from various quarters of our new and rich developing fields of agriculture on the Pacific coast, embracing new hints and ideas from progressive men and women in all branches of rural industry; Horticulture; Floriculture; The Garden; The Home Circle; The Grange; Young Folks; Domestic Economy; Good Health; Entomological; Sheep and Wool; The Dairy; The Stock Yard; Poultry Yard; The Swine Yard; The Apiary; The Vineyard; Queries and Replies; New Inventions (and illustrations of new and improved machinery); Agricultural Notes; Items of General News, etc. Its columns are studiously filled with chaste, interesting, fresh and useful reading, devoid of questionable literature for old or young and fancifully alluring clap-trap advertisements. Send for sample copies.

Subscriptions, *in advance*, $3 a year. Agents wanted, on liberal pay DEWEY & Co., Publishers.
No. 252 Market St., S. F., Cal.

Live Stock Sales, 1881.

Col. Peter Saxe, of the firm of Peter Saxe & Homer Polk Saxe, gives us the statistics of their last year's live stock sales. He tells us also that about eight-tenths of their sales are to those who read their advertisements in the PACIFIC RURAL PRESS! Sold 21 horses, including work horses, single, riding and stallions; 2 jacks; 92 Berkshire, Essex and Poland China hogs and pigs; 15 Bronze turkeys and chickens; 17 thoroughbred Short Horn cows, bulls and heifers; 204 head of grade Short Horn young cattle, milch cows and bulls; 23 thoroughbred Jersey cows, bulls and heifers; 18 grade Jersey milch cows; 9 thoroughbred Ayrshire milch cows, bulls and heifers; 143 thoroughbred Spanish Merino bucks; 66 ditto, ewes; 32 pure Southdown and Cotswold ewes and bucks. The above animals have been shipped to owners in California to San Mateo, Santa Clara, San Benito, Monterey, Santa Barbara, Stanislaus, Merced, Fresno, Sacramento, Yolo, Tehama, Yuba, Butte, Colusa, Lake, Mendocino, Humboldt, Shasta, Sonoma, Napa, Contra Costa, Solano and Alameda counties. Also to Washington Territory, Oregon, Nevada, Japan, Sandwich Islands, Mexico and Central America.

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SAN LUIS OBISPO, CAL.

A. R. BOOTH.—*Dear Sir:* We have tried your Squirrel Poison and find it the best and cheapest of any that we have ever used, and recommend it to all who wish to get rid of the rodent. STEELE BROS., Coral de Piedra.
JAS. H. BLACKBURN, Paso de Robles.
P. MCARDEL, Los Osos.
N. NUCKOLS, Old Creek,
And many others.

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G. W. MCGREW—Santa Clara county.
M. P. OWEN—Santa Cruz county.
J. W. A. WRIGHT—Merced, Tulare and Kern counties.
JARED C. HOAG—California.
B. W. CROWELL—Humboldt and Trinity counties.
D. W. KELLEHER—Merced, Fresno and San Benito.
A. C. KNOX—State of Nevada.
EDWARD A. WEED—San Francisco.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances. The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired), be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

Cylinder Printing Press for Sale.

A large cylinder Hoe printing press, for country newspaper work, can be bought cheap by addressing
Press, Box 2361, S. F.

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AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

REMITTANCES to this office should be made by postal order or registered letter, when practicable; cost of postal order, for $15 or less, 10 cts.; for registered letter, in addition to regular postage (at 3 cts. per half-ounce), 10 cts

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday he date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Jan. 25, 1882.

Wheat buyers are making the best use they can of the rains to bear Wheat prices, but have not acomplished much as yet. In fact the rate to-day is quotable 2½c higher than on Wednesday of last week, and the report from other markets is favorable. The latest from abroad is the following:

LIVERPOOL, Jan. 24.—Wheat: California spot lots are firm, at 10s 6d@10s 11d. Cargo lots are firm. The rates are 49s 6d for just shipped, 50s 6d for nearly due, 51@51s 6d for off coast. Receipts of Wheat the past three days, 122,000 ctls, including 45,600 American.

Freights and Charters.

The chartered Wheat fleet in port has now a register of 59,515 or a carrying capacity of 89,272 short tons, or 1,785,440 ctls. against 60,519 tons at the same time in 1881. The disengaged tonnage in port has now a register of 22,232, or an export capacity of 33,348 short tons, or 666,960 ctls., against 4,442 at the same time in 1881. The tonnage now bound for this port has a register of 271,205, against 175,557 at the same time in 1881 and 132,823 in 1880. The British iron ship Mitredale, 1,231 tons, is chartered for Wheat and Mase. to Liverpool direct; British iron ship Pizarro, 1,382 tons, Liverpool or Havre, £3, 7s. 6d, and ship South American, 1,762 tons, Liverpool direct, £3, 2s 6d.

The Foreign Review.

LONDON, Jan. 23.—The Mark Lane *Express* in its review of the British grain trade for the past week, says: The young plant is strong and healthy, and farmers' deliveries are generally full conditions. There was a moderate inquiry for good samples, but the others are neglected. Foreign is dull, and the supply small, especially American. A scarcity of American winter and spring Red Wheats seems likely, but their equivalent is handy off coast. The market is inanimate, closing a little better. Seven cargoes arrived, and four were sold. Floating bulk slightly decreased. For Flour, there was a steady demand at firm values. The supply is moderate. Lower grades fell slightly Monday. In foreign there was a small spot supply at unchanged rates. A large increase of floating supply from America seems to point to a glut in the market similar to that of 1881, than which a greater disaster could scarcely befall trade. Barley, both native and foreign, is unchanged. Oats, unchanged. Foreign dull, and declined 6d. Maize slow, but values a fraction higher. Sales of English wheat for the week amounted to 50,012 quarters at 46s 1d per quarter, against 36,933 quarters at 42s 4d for the corresponding week of last year.

Eastern Grain and Provision Market.

NEW YORK, Jan. 23: The markets improve slowly. Wheat is firm, and under the general improved tone of foreign dispatches is again higher and excited, and under this condition of things gives no opportunity for exporters to fill their orders, which are now several cents out of the limit for even desirable grades. Holders are taking extreme views, and prices are 1¼@2c higher than on Saturday. Barley quiet. Provisions are dull

CHICAGO, Jan. 24—Wheat, firm and higher; closing easy at $1.34¼ cash, $1.34¾ for Feb. Corn, steady, weak, at 60⅝ cash, 60¾ for Feb. Oats, firmer but irregular, at 43¼ cash, 44 for Feb. Pork, higher, at $17.97½ cash and Feb. Lard, stronger and higher, at $11 20 cash, $11 22½ for Feb.

Eastern Wool Markets.

BOSTON, Jan. 20.—The local market has been firm with a good demand. Sales for the week have been 2,500,000 lbs., and have included all grades. Fine fleeces continue most in request. Ohio and Pennsylvania fleeces have sold 44@45c. X and XX are firm. Michigan and Wisconsin fleeces have been quiet but firm at 42@43c for X. No. 1 fleeces have been in fair demand at 46@49c for Michigan and Ohio. Combing and delaine selections are firm, and sales were made at 46@50c ℔ lb., some round lots of fine delaine selling at 48@49c. Unwashed combing is quiet. Coarse grades are dull. There has been considerable doing in unwashed fleece, and full prices have been obtained. Sales of choice medium selections were made at 35@37c; 210,000 lbs. Montana at 33½c; other unwashed fleeces at a wide range of prices. California Wool has been in fair demand, and both fall and spring has been selling more freely. Pulled Wools are firm, and choice supers range from 45@52½c; common to good, 30@38½c. Australia Wool is held at 45@47c.

PHILADELPHIA, Jan. 24.—Wool is steady, the supply being gradually reduced. California descriptions are not quoted. Oregon fine, 29@32c; medium, 33@34c; coarse, 25@29c. New Mexican and Colorado fine, 23@26c; medium, 25@28c; coarse, (carpet Wool), 17@27c.

BOSTON, Jan. 24.—The Wool market has been rather firm, with a steady demand, but disagreeable weather has interfered somewhat with business. California Wool has been in steady demand, but sales have been at a wide range of prices. Australia is held at 45@47c for most desirable lots, with sales on this range.

BAGS—Bags are quiet and unchanged.

BARLEY—There has been an effort to crowd down Barley rates, but prices remain as before, although the trade is dull, in fact, but little is being done. Holders are still confident.

BEANS—Red and Pink Beans have advanced to $2 and $2.25 and are firm. Small White and Pea Beans have gone to $4.25. There is no trade in Limas, and prices are nominal.

CORN—Corn has advanced about 10c ℔ ctl; Small White having sold at $1.85 and Large Yellow at $1.82½ ℔ ctl.

DAIRY PRODUCE—Butter is in full supply and much cheaper. The best fancy is quotable to-day at 30c and much really fine is going as 27½c. Cheese is very scarce and firm at 18@20c.

EGGS—Eggs are again more plenty and have dropped off with Butter, choice fresh going at 28@28c ℔ dozen.

FEED—Bran and Middlings are going to famine prices, but the rains will send them backward. Hay has advanced $1 ℔ ton.

FRESH MEAT—Mutton is weakening, and is to-day 1c ℔ lb. lower than last week. The ring is said to be broken. Spring Lamb goes at 10@10½c. Choice Beef is strong at last week's rates. Veal is higher.

FRUIT—There is little change except that Oranges are lower owing to the large lots now arriving. Apples are well up. Some No. 1 Newtons bringing $2.25 by the single box. 1,000 boxes Oregons came in this week and retail at $1.50 ℔ box.

HOPS—Hops are dull, neglected and quotable about 2c lower. The New York trade is quiet.

OATS—Prices are still well up. There is nothing much now below $1.75 per ctl and choice go to $1.90

ONIONS—There is no change except that some inferior are arriving and selling lower.

POTATOES—The interest in the trade continues and prices for some sorts are advanced. Early Rose are higher than for a long time.

PROVISIONS—The trade is rather quiet and inactive this week, but prices are not changed.

POULTRY AND GAME—Turkeys have sold very low but are a fraction better to-day. Hens and Roosters are 50c lower per dozen. Game birds are in excessive supply and very low.

VEGETABLES—A few Green Peas from Los Angeles have sold at 15c per lb. Other Vegetables are unchanged.

WHEAT—There is little doing, but No 1 is quoted at $1 70@1.72½—a slight improvement on last week.

WOOL—There is nothing worthy of note and no change in rates. The Eastern markets are quite favorable to California Wool as may be seen in another column.

Domestic Produce.

WHOLESALE.

WEDNESDAY M., January 25, 1882.

BEANS & PEAS.	
Bayo, ctl	2 00 @2 25
Butter	3 00 @3 25
Castor	3 50 @4 00
Pea	— @4 25
Red	2 00 @2 25
Pink	2 00 @2 25
Large White	3 00 @3 25
Small White	— @4 25
Lima	— @4 00
Field Peas, b'lk eyed	50 @1 75
do, green	2 00 @2 25
BROOM CORN.	
Southern	3 @ 3½
Northern	4 @ 6
CHICCORY.	
California	4 @ 4½
German	6½@ 7
DAIRY PRODUCE, ETC.	
BUTTER.	
Cal. Fresh Roll, lb	27½@ 29
do Fancy Brands	— @ 30
Pickle Roll	25 @ 27½
Firkin, new	25 @ 26
Eastern, by expr'ss	20 @ 25
New York	— @ —
CHEESE.	
Cheese, Cal., lb	18 @ 20
EGGS.	
Cal. Fresh, doz	23 @ 26
Ducks	— @ 30
Oregon	21 @ 22
Eastern, by expr'ss	— @ —
Pickled here	— @ —
Utah	— @ —
FEED.	
Bran, ton	— @20 00
Corn Meal	— @37 00
Hay	10 00 @16 00
Middlings	29 00 @30 00
Oil Cake Meal	— @25 00
Straw, bale	62½@ 70
FLOUR.	
Extra, City Mills	5 25 @5 62½
do, Co'ntry Mills	4 75 @5 00
do, Oregon	4 75 @5 12½
do, Walla Walla	4 50 @5 00
Superfine	3 50 @4 25
FRESH MEAT.	
Beef, 1st qual'y, lb	6½@ 8
Second	5½@ 6½
Third	4 @ 4½
Mutton	7½@ 8
Spring Lamb	10 @ 10½
Pork, undressed	5½@ 6½
Dressed	9 @ 9½
Veal	7½@ 8
Milk Calves	7½@ 8
do, choice	— @ [illegible]
GRAIN, ETC.	
Barley, feed, ctl	1 65 @1 67½
do, Brewing	1 70 @1 75
Chevalier	1 65 @1 70
do, Coast	1 50 @1 60
Buckwheat	— @1 50
Corn, White	1 82½@1 85
Yellow	1 82½@1 85
Small Round	1 82½ @1 85
Oats	1 75 @1 80
Milling	1 80 @1 90
Rye	— @2 50
Wheat, No. 1	1 70 @1 72½
do, No. 2	1 62½@1 67½
do, No. 3	1 45 @1 50
Choice Milling	— @1 72½
HIDES.	
Hides, dry	— @ 18
Wet salted	9½@ 11
HONEY, ETC.	
Beeswax, lb	23 @ 25
Honey in comb	15 @ 20
Extracted, light	9 @ 10
do, dark	7½@ 9
HOPS.	
Oregon	20 @ 21
California, new	24 @ 26
Wash. Ter	23 @ 24
Old Hops	— @ —
NUTS—Jobbing.	
Walnuts, Cal	10 @ 11
do, Chile	7½@ 8
Almonds, hd shl'd lb	8 @ 10
Soft shell	14 @ 15
Brazil	10 @ 11
Pecans	13 @ 15
Peanuts	6 @ 6½
Filberts	14 @ 15
ONIONS.	
Red	— @ —
Silverskin	50 @ 85
Oregon	— @ —
POTATOES.	
Early Rose	1 75 @2 00
Petaluma, ctl	1 75 @1 90
Tomales	1 75 @1 90
Humboldt	— @ —
" Kidney	— @ —
" Peachblow	— @ —
Jersey Blue	— @ —
Cuffey Cove	— @ —
River, red	1 50 @1 60
Chile	1 60 @1 75
do, Oregon	— @ —
Sweet	1 00 @1 25
POULTRY & GAME.	
Hens, doz	4 50 @ 5 50
Roosters	4 00 @ 5 50
Broilers	4 00 @ 5 00
Ducks, tame, doz	5 50 @ 6 50
Mallard	1 50 @ 2 00
Sprig	1 00 @ 1 25
Teal	50 @ 75
Widgeon	1 00 @1 12½
Geese, pair	1 50 @1 75
Wild Gray, doz	1 75 @2 00
White do	50 @1 00
Turkeys	10 @ 11
do, Dressed	10 @ 12½
Turkey Feathers, tail and wing, lb	10 @ 20
Snipe, Eng	1 50 @2 00
do, Common	50 @ 75
Quail, doz	75 @ 80
Rabbits	1 00 @1 25
Hare	1 50 @1 75
Venison	5 @ 7
PROVISIONS.	
Cal. Bacon, extra clear, lb	13 @ 13½
Medium	12 @ 13½
Light	13 @ 14
Lard	13 @ 17
Cal. Smoked Beef	11½@ 12½
Shoulders	9½@ 10½
Hams, Cal	12½@ 13½
do, Eastern	16 @ 16½
SEEDS.	
Alfalfa	12 @ 13
do Chile	— @ —
Canary	3½@ 4
Clover, Red	14 @ 15
White	45 @ 50
Cotton	— @ 20
Flaxseed	2½@ 3½
Hemp	— @ 5
Italian Rye Grass	25 @ —
Perennial	25 @ —
Millet, German	10 @ 12
do, Common	7 @ 10
Mustard, White	1¾@ 2¾
Brown	2½@ 3
Rape	2½@ 2¾
Ky Blue Grass	20 @ 25
2d quality	16 @ 18
Sweet V Grass	— @ 75
Orchard	20 @ 25
Red Top	— @ 15
Hungarian	8 @ 10
Lawn	30 @ 40
Mesquit	10 @ 12
Timothy	9 @ 10
TALLOW.	
Crude, lb	6 @ 6½
Refined	9½@ 10
WOOL, ETC.	
FALL—1881.	
San Joaquin	9 @ 14
do, Lamb	13 @ 15
Southern Fall	9 @ 12
do lambs'	13 @ 14
Northern, free	16 @ 20
do, defective	14 @ 16
Mountain, free	16 @ 18
do, slightly seedy	13 @ 15
Humboldt & Mendocino	18 @ 21

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., January 25, 1882.

FRUIT MARKET.	
Apples, bx	— 75 @ 2 00
Bananas, bnch	2 50 @ 4 00
Cocoanuts, 100	6 00 @ 7 00
Cranberries, bbl	14 00 @16 00
Limes, Mex	10 00 @12 00
do, Cal, box	— 75 @ 3 50
Lemons, Cal, bx	1 50 @ 3 50
Sicily, box	6 50 @ 7 50
Australian	— @— —
Oranges, Cal, bx	1 50 @ 3 00
do, Tahiti M	— @— —
do, Mexican	— @15 00
do, Loreto	— @— —
Pears, bx	— 75 @ 2 00
Pineapples, doz	7 00 @ 8 00
DRIED FRUIT.	
Apples, sliced, lb	— 6 @— 6½
do, evaporated	— 10 @— 11
do, quartered	— 5 @— 5½
Apricots	— 15 @ 17
Blackberries	— 14 @— 16
Citron	— 28 @— 30
Dates	— 9 @— 10
Figs, pressed	— 4 @— 6
do, loose	— 3½@— 5
Nectarines	— 14 @— 15
Peaches	— 11 @— 11½
do pared	— 14 @— 18
Pears, sliced	— 9 @— 9½
do whole	— 7 @— 8
Plums	— 5 @— 6
Pitted	— 13 @— 14
Prunes	— 9 @— 12½
Raisins, Cal, bx	— @ 2 50
do, Halves	— @ 2 75
do, Quarters	— @ 3 00
Eighths	— @ 3 25
Zante Currants	— 8 @— 10
VEGETABLES.	
Artichokes, doz	— @— 50
Beets, ctl	— @— 65
Cabbage, 100 lbs	— 75 @ 1 00
Carrots, sk	— 30 @— 50
Cauliflower, doz	— 85 @ 1 00
Garlic, lb	— 1½@— 2
Lettuce, doz	— 10 @— —
Mushrooms, lb	— — @— 15
Okra, lb	— 5 @— 8
Peas, green, lb	— — @— 15
Parsnips, lb	— — @— 5
Squash, Marrow fat, ton	10 00 @12 00
Turnips, ctl	— — @— 75

AMERICAN

CONCENTRATED

LYE,

Manufactured by

Geo. T. Lewis & Menzies Co., of Philadelphia.

THE

AMERICAN LYE

IS THE

Purest, Strongest and Best.

IT WILL GO FARTHER THAN ANY OTHER.

AN INSECTICIDE

AND A

FERTILIZER.

CONCENTRATED LYE has proved itself where used of sufficient strength to be thoroughly reliable and effectual, and has the great property of fertilizing the tree and soil, as potash is one of the natural constituents of both, and is required for the health of the tree. Its use is therefore recommended. Sixty pounds of the Concentrated Lye of the American Lye Co. is equivalent to 100 pounds of commercial potash.—*Report to San Jose Horticultural Society, 1881.*

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Vine-Setter and Hole-Digger.

I desire to call the attention of those interested in setting out vineyards to the above tool. The following are a few of the many advantages which it possesses over all tools generally in use for that purpose: 1. It will dig the largest number of holes with the least amount of labor in all kinds of soil. 2. It makes a hole the desired depth for the reception of the cutting, leaving the ground thoroughly loosened at the bottom, with sufficient room for the fertilizer or composite which is necessary to some soils. 3. It leaves room enough to tamp the cuttings air-tight, without injury to the buds, which is an impossibility with the dibble, auger or crowbar. One man can dig from 800 to 1,500 holes per day, according to the nature of the ground. It works equally well in the loosest soil or the worst adobe. It is operated by forcing the blade into the ground with the foot, then turning it around; it cuts and removes the soil with the blade. If desired the hole can be lengthened or enlarged for bent cuttings or young trees. The blade is made of the finest saw steel, cold rolled temper; handle, tubular iron.

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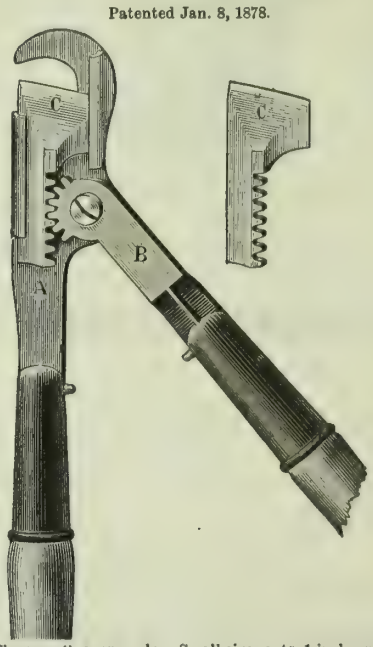

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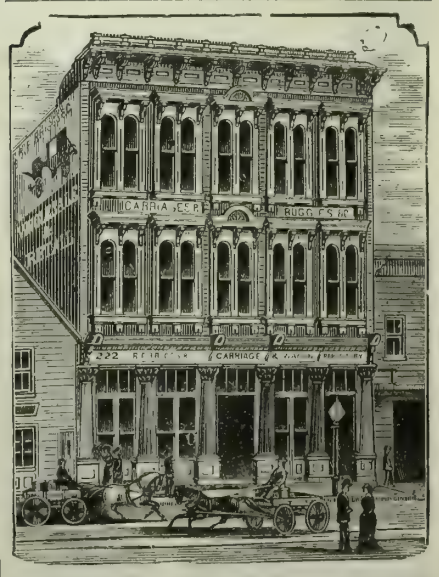

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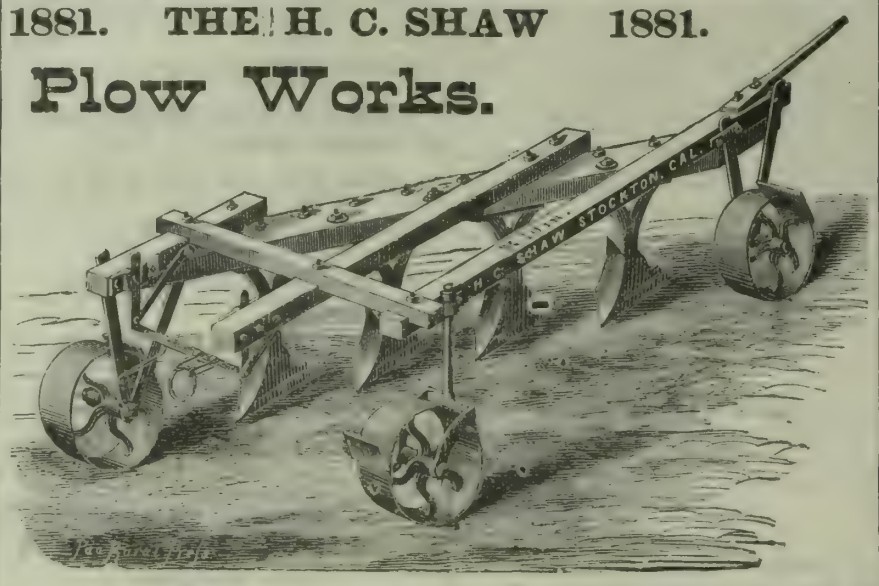

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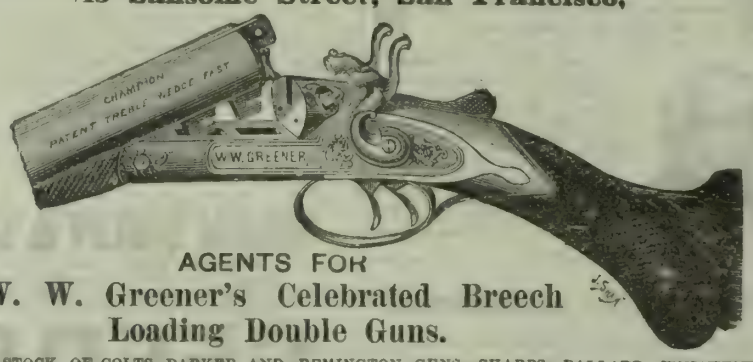

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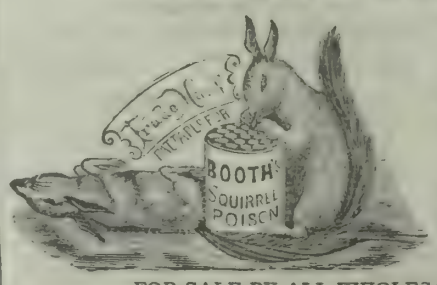

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Put up in 1 lb., 5 lb., and 5 gallon tins. Manufactured by

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NURSERIES,

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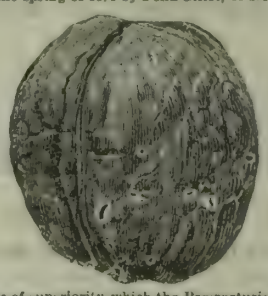
SPECIALTIES—Nuts of all kinds (Walnuts, Chestnuts, Almonds and Filberts.)

PRŒPARTURIENS.

Or early bearing Walnut, introduced into California from Europe in the spring of 1871 by Felix Gillet, of Nevada City.



The points of superiority which the Preparturiens possess are

First—It bears earlier than any other kind, very often when 3 years old; hence its name, Preparturiens—fertile or precocious.

Second—It is a hardy variety, getting in bloom late in the spring and being very seldom injured by frost in the spring or fall.

Third—It matures its wood well before the winter; thus insuring a crop of nuts for the ensuing year.

Fourth—It is a regular and prolific bearer.

Fifth—The nut is large, the shell soft, and the meat full and easily extracted from its socket.

☞One, two, three and four year old trees for sale. One-year old trees, heavily rooted, sent by mail to any part of California and the United States at $1 per tree, or $10 per dozen, including packing and mailing.

Also, GAND WALNUT, the largest of soft shell varieties.

SEROTINA or LATE WALNUT, a kind that leafs out late in the spring. Very desirable for a cold climate. One-year-old trees of the two above kinds at the same rates as Preparturiens.

FILBERTS, CHESTNUTS,

Pears, Cherries, Peaches, Etc.

STRAWBERRIES, RASPBERRIES,

Blackberries, Currants, Gooseberries, Grapes, Etc., Etc.

Send for descriptive catalogue and price list.

SILKWORM EGGS

From Felix Gillet's Cocoonery,

AT $5 PER OUNCE.

Sent by mail to any part of the United States, packing and mailing included, in quantities from 50 cents and over.

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MULBERRY CUTTINGS FOR SALE,

From choice selected varieties of "MORUS ALBA" or White Mulberry. Also a limited amount of

SILKWORM EGGS.

Address MRS. S. A. SELLERS, Antioch, Cal.

VIZELICH'S

Insect Destroyer

AN IMPORTANT INVENTION

[From a Stockton Paper]

Nicholas Vizelich had his Insect Destroyer on exhibition to-day in Courthouse square before a crowd of admiring farmers. The Destroyer is a box-shaped structure, five feet wide, and mounted on wheels. The machine is supplied with two force pumps, one forward and the other aft, with a small smoke stack in the middle. The liquid with which the scale bugs and the phylloxera are vanquished is a composition specially prepared by Mr. Vizelich, and is stored within the box. In a compartment underneath the liquid is a furnace for heating it so as to melt the frost off the trees and thereby get at the bugs and insects. An additional supply of the liquid may be carried in a barrel mounted on wheels. With the pump the water may be sent through a garden hose to a hight of upwards of 50 ft. Mr. Vizelich gave partial illustrations of the working of his invention to-day in the square, and threw a stream to the top of the clock tower, holding the hose in one hand and working the pump with the other. The new invention worked excellently and the farmers who watched it operate said that it would not be many months before every orchard and farm in the country would have one of Vizelich's Insect Destroyers. They can be manufactured of any size, from those designed to be worked by one man up to a machine large enough to be worked to advantage by a dozen men. The warm liquid runs into the crevices in the bark of the trees and dissolves and kills the vermin.

"VIZELICH'S DESTROYER" will be made in three sizes—one of 65, one of 125 and one of 500 gallons for field use.

For full information address the inventor,

N. VIZELICH,

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California Washer.

This machine is an improvement on the celebrated "Humboldt." For Families or Hotels it will pay for itself in less than six months. Lace curtains and other delicate fabrics can be washed without injury. Price $15. Manufactory, 481 Fourth St., S. F. Local or traveling Agents wanted. G. M. PURSELL, Patentee.

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Importers, growers of, wholesale and retail dealers in

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Field, Grass, Flower and Tree Seeds.

CLOVER, ALFALFA,

BULBS, FRUIT, ORNAMENTAL TREES, ETC.

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We issue the most complete guide to the Vegetable and Flower Garden ever issued upon this coast. It is handsomely illustrated, and contains full descriptions of Vegetables, Flowers, Grasses, Trees, etc., with full instructions as to their culture; mailed free on application.

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For Sale Cheap,

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I have a few thousand left of my half-yearling or June Budded Trees, from 15 to 18 inches, consisting of

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Price, $15 per 100 this season. I am also prepared to make contracts for the season of 1882-83.

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For sale, all kinds of Fruit Trees, Vines and Fruiting Shrubs raised without irrigation. Also, a general assortment of Evergreen Trees and Shrubs, deciduous Flowering Shrubs; Roses in assortment. Conservatory and Bedding Plants in great variety. Send for Catalogue and List of Prices. Address W. H. PEPPER,
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Special attention will be given and prompt returns rendered for Consignments placed with us. Orders for Merchandise of every description promptly and carefully filled at lowest rates.

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In Large Quantities and Offered in Lots to Suit Purchasers.

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Alfalfa, Red and White Clover,

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Also, a large and choice collection of FRUIT and ORNAMENTAL TREES,

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It is manufactured solely of Bones and residues of Meats dried and pulverized in such manner that all the Calcium, Phosphates, Carbonates, Nitrates and Potassium, which are the main assimilators to plants, are entirely preserved in the Fertilizer and render it most valuable to the cultivators of the soil.

Stable manures require frequent irrigation in order to develop its properties; it is expensive, voluminous, and requires great labor to spread and subsoil it; it propagates weeds, worms, snails and destructive animalcules, the pests of the farmer. On the other hand, Bone Powder can be easily handled, transported at low rates of freight, in bags. It checks the propagation of insects and luxuriates the growth of hops, vines, fruit trees, etc.; can easily be spread around the plants and is most efficacious as an impediment to the rapid and terrible encroachment of the PHYLLOXERA.

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The undersigned now have for sale a few choice Thoroughbred and high grade bulls from the best milk strains Our herd consists of "Young Marys," "Daisies," "Imp Britannias," etc. Prices Reasonable.

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The Handsomest, Stiffest, and Most Durable. No Rust. No Decay. Secure Against Fire, Flood and Wind.

IT IS THE ONLY BARB WIRE that will prevent small animals, such as rabbits, hares, pigs, dogs, cats, etc., from passing through, under or over it, the barbs are so near each other.

The Barbs being triangular-shaped, like the teeth of a saw, and close together, there is no *cruelty to animals*, as they cannot pierce the hide; they only prick, which is all that is ever necessary as *no animal will go near a Barb Fence twice.*

AS THE WIRE IS NOT BENT OR TWISTED, its tensile strength is much greater than the Wire in all other Barb Wire Fences, as they are all made of twisted or bent Wire.

HEAT AND COLD CANNOT AFFECT THE AMERICAN BARB FENCE, as it can be allowed to sag when put up, enough to cover contraction and expansion, *because it is a continuous Barb, and cannot slip through the staples one inch.* Each panel of Fence takes care of itself.

The Barbs cannot be displaced or rubbed off, and are not pounded on and indented into the wire to hold them in place, as in other Barb Wire, thereby decreasing the strength of the Wire. The Barbs are short, and broad at the base, where strength is required.

THE PAINTED WEIGHS A POUND TO THE ROD, so that the purchaser knows exactly how much fencing he is getting. Galvanized weighs slightly more.

☞ SEND FOR SAMPLES AND PRICES. ☜

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These horses were imported by

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WAS AWARDED THE

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His Mare **"Mignonette"** was awarded the **1st Prize** $500 and **Grand Gold Medal**; and his Stallion **"Vidocq"** was specially recommended to receive the Society's **Gold Medal**.

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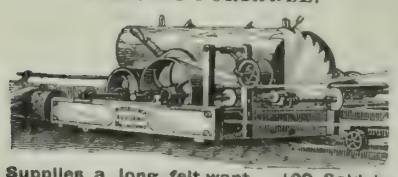

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20,000 Bartlett Pear

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Full assortment of best varieties for family orchard. Bartlett Pears, 1 year, $25 per 100; 2 year, $32.50 per 100. Splendid trees and good roots.

JAPANESE CHESTNUTS, 75 cts each. Nut larger than Italian, and sweeter than American; tree hardy.

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Trees all healthy and free from disease.

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Prices reasonable. Address T. J. SWAYNE, National City, San Diego County, Cal.

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Shrubs, Roses,

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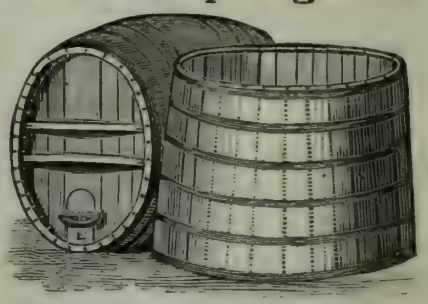

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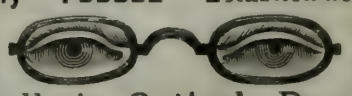
1863  1882

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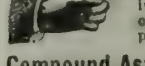

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PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, FEBRUARY 4, 1882. Number 5

False Butter.

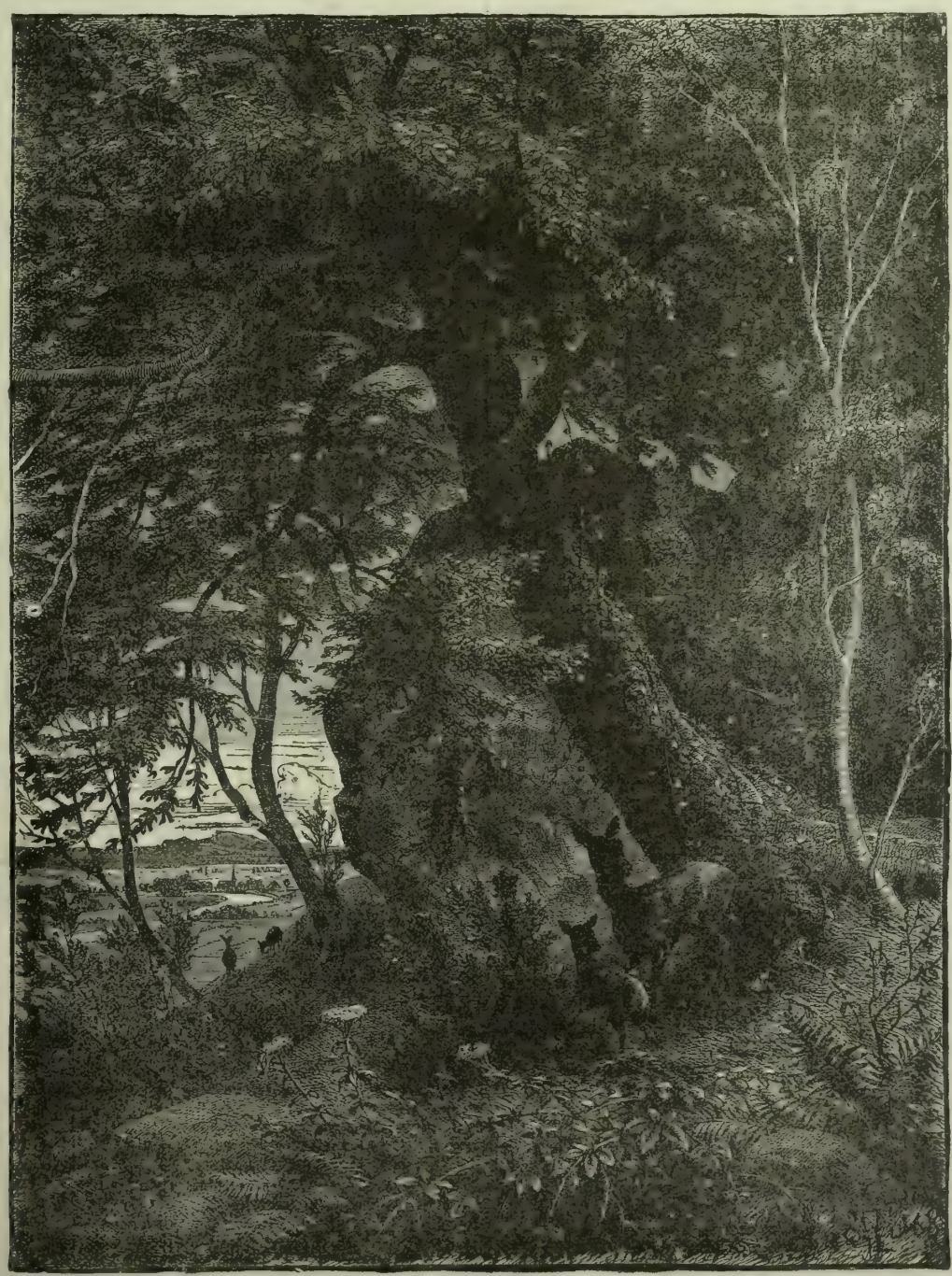
Eastern butter makers are still afflicted by the operations of the oleomargarine makers. The suet-and-sour-milk compound is said to have been generally introduced in the place of the lower grades of butter, and that all the hotels and restaurants of the commoner sort are now using the false article. Beyond this the extent of the manufacture can be seen from the act that more than 7,000,000 lbs. were exported from New York to European ports. The intrusion of such a mass of fraudulent butter, which is so acceptable that people eat it unsuspectingly or with a relish, must have a grievous effect upon the production of the genuine article, although it is true that the best genuine butter is clearly distinguishable from the counterfeit, and sells at a good price in spite of it. Still the competition with the false article is an issue which should not be forced upon the butter makers. In this State we are free from the contest, except, perhaps, in occasional cases. The general quality of California butter is too high and too generally known by all classes of our population to allow a chance of the wide introduction of oleomargarine.

In New York, the dairymen have been sorely troubled from the fact that two laws which were enacted for their protection have been found unconstitutional, but there is still a law which, if enforced, would force the imitation article to sell under its own name. The issue is regarded of such importance that Gov. Cornell, of New York, in his message to the Legislature two weeks ago, makes the following reference to it: The introduction of the new article of manufacture known as oleomargarine, as a substitute for the genuine product of the dairy, has justly caused much dissatisfaction on the part of farmers engaged in the production of butter. Chapter 415 of the laws of 1877, and chapter 439 of the laws of 1880, were enacted for the protection of dairymen, and to prevent deception in the sale of butter. These statutes require that any article in semblance of butter, not the legitimate product of the dairy, and not made exclusively of milk or cream, shall have distinctly marked or stampedon each package the word "Oleomargarine." Complaint is made that these laws are constantly violated, and that large quantities of oleomargarine are sold by dealers as real butter, without the required brand. Two bills were passed by the last Legislature relating to this subject, but unfortunately the provisions of both were in conflict with the Constitution and laws of the United States, and they were, therefore, returned to the House in which they originated without Executive approval.

It is the undoubted duty of the proper authorities to enforce the laws now existing for the protection of the dairy interests, and also in the interests of consumers, to prevent the sale of oleomargarine as butter. If it be found that their provisions are ineffectual, then they should be amended in such manner as to provide stringently against all deception and fraud in the sale of an article of such universal use as butter. While the patent laws of the United States must be duly observed, there ought to be no difficulty in enacting a law that will reasonably protect the producer of natural butter, and likewise the consumer. Oleomargarine is a product of manufacture recognized and protected by Federal statute, and its sale under the patented name cannot be interfered with by State regulation, unless demonstrated to be deleterious to health. But it cannot properly be sold as butter; and all such cases should be strictly forbidden and prevented.

A Vista.

The days are growing longer; the sun is gaining power; the season for rambles is approaching. Soon beauty-lovers will be seeking the adjacent wilds for early growths of wild flowers, and to get glimpses of fair winter scenery, the clear air giving peerless views of verdant valleys, the eye, as it were, drinking in distance and discerning objects which midsummer's haze and dust obscures. Our engraving shows a vista such as can be obtained in many parts of California, for the State has a wealth of hills and narrow valleys, as well as vast seas of area of unbroken level. One can climb the hillsides from north to south, and gain sights of lovely valleys over which farms are spreading and where homes, churches and schools are being planted. He will find noble trees shading immense rocks, and he will not tramp far in some parts of the State before he may see the deer or hear them bounding through the forest before him. The scene is fit to awaken longings for the enjoyment of wild life. One can almost hear the sounds and inhale the fragrance of the forest.



AT THE EDGE OF THE WOODLAND.

THE military reservations reported to the House as no longer needed by the War Department, are: Fort Fetterman, Wyoming Territory; Fort McPherson, Nebraska; Camp Sheridan, Nebraska; Camp Independence, California; Fort Hartruff, Nebraska; Fort Benton, Montana Territory; Fort Steilacoom, Washington Territory; Whipple Barracks, Arizona; Coal reservation, on Sulphur creek, Wyoming Territory; Fort Dodge, Kansas; Fort Lyon, Colorado.

THE verdict in the Guiteau trial elicits from the London *Times* the most offensive article it has published since the Rebellion. It declares that the American people are satisfied with the conduct of the trial, which was a broad farce enacted in court, without one symptom of popular disapprobation.

LEADING Paris financiers have decided to guarantee the loan of 85,000,000 francs, required by authorized brokers.

The Glucose Greed.

We notice that some parties are extolling the cassava as a source of starch for the manufacture of glucose, and advising California farmers to grow it and sell it to someone who will put up a glucose factory, because the yield of cavassa may be 25 tons to the acre, while the yield of corn, from which glucose is usually made, is less than a quarter of that amount. This would all be well enough were it not that glucose is one of the most ill-used substances of the age. It is perhaps the most inveterate adulterant in existence, for as cane sugar enters the food supply at so many points, so glucose, with which cane sugar is debased, enters also. We can hardly see how a man can contribute to the increase of the glucose supply without setting traps for his own feet. The syrups sold in Eastern stores are doubtl ss all made up of mixtures, in which glucose or grape sugar, made from Western corn plays a prominent part. As from 10% to 25% of grape sugar can be mixed with cane sugar, and 75% of corn syrup can be added to sugarhouse syrup without being detected by the taste, it is not to be wondered at that glucose is largely used in this age of adulteration. The product of the Western cornfields now finds a ready market in New Orleans at the sugar and molasses factories, and it is believed that Cuba is becoming a good market for the product.

Again, glucose has been a grievous thorn in the side of the honey producer. At first the artificial honey makers of New York city contented themselves with putting a piece of genuine comb honey in a glass jar and then filling the jar with glucose. Then the purchaser obtained at least a portion of genuine honey. But the city honey makers have extended their manufacture, and are now making a perfect comb from beeswax, and filling the cells with the glucose, direct from the syrup mills. The comb is made by machinery, and after filling is sealed over like bees' comb, and then sold in the markets of the world, perhaps as California honey, or such other trademark as the dealer may fancy.

Glucose has also won the indignation and denunciation of our leading wine makers, for they look upon its use as dangerous to the future of California wines. We dislike the idea of glucose in what we buy or what we sell. It has already done us much harm by competition with our honey product and by weakening the sweetness of our culinary compounds. We do not feel inclined to advocate any attempt at its production.

IMPORTING POTATOES.—The United States seems now to be going short on potatoes. Potatoes are high on both sides of the continent. In this market prices have ruled unusually high for several weeks, which is an unusual thing, for the reserves are usually large, and one weeks' advanceis followed by a following weeks' excess. The last year was apparently an off year in the potato fields and the pri es will no doubt lead to an increased planting the present season. At the East it is reported that great preparations are being made in Germany to export potatoes in large quantities to America. It is seen that in New York potatoes cost fifteen marks per kilogram; whereas, in Germany they only fetch five marks. The English competition will be great, and the *Wiener Landwirthshaftliche Zeitung* says that the large German seaports will have to exert all their energies in order to prevent England getting the best part of the trade. Perhaps California may yet take a hand in the Eastward movement of potatoes in quantity. We understand that some experimental shipments have already been made.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

What Shall We Do with the Birds?

EDITORS PRESS:—This is becoming a very serious question in the San Gabriel valley, where, until recently, the quail have been abundant in the chapparal, and the natural balance of vegetable and animal life has suffered a scarcely perceptible change. It would seem that the birds have been in convention as well as the horticulturalists; and in view of the alarming statistics there presented, have come to the rescue in numbers which have already led to extreme measures—a very "St. Barthol omew" of our feathered friends.

As I came here to invite the birds—hoping that the doves would let me look into their soft eyes and enjoy the changing colors of their glossy necks in the deep shade of the pines; that the mocking-birds would build, season after season, in my chimney flues, as they do in those of my neighbor, Dr. Congar—it is a grief and a disappointment that the fruit growers and I are not in accord upon this subject.

We had a horticultural meeting the other night in our school-house, and I hoped somebody would ask me to say something, for the worthy President having been slaughtering the linnets by lamp-light, I meant to improve the opportunity by reciting the "Birds of Killingsworth," in which the poet Longfellow has put the claims of the birds upon the farmers in poetic phrase. But the meeting was not dull enough for a demand of this kind.

I should like to preach a little sermon on the kind of "dominion over the fowl of the air," which God gave to man as his "image and likeness;" not that of a destroying or fallen angel; for the birds have been my ministers and preachers for many a year, and I have paid my tax in apricots and berries cheerfully. Mr. Dodge, of the United States Bureau of Agriculture, has said delightful things of the birds: The bird is the farmers' poet laureate; that the laborer is worthy of his hire, is a maxim the farmer should respect, and no laborers work so cheaply as the birds.

As a matter of taste I greatly prefer to have these neat-handed servants do my grubbin' and 'tater buggin'. I believe in the principles of co-operation, and am ashamed to begrudge the robin, who has taken a thousand caterpillars from my trees, his dessert of strawberries.

A blackbird will destroy 50 grubs in a day; the woodpecker explores the trunk and the surface roots of the peach for borers. The author of "Wild Sports in the Highlands," killed eight wood pigeons, busy upon a field of clover, and found only seeds of the wild mustard and ragweed in their crops. Of all insectiverous birds the robin is the most industrious. Wilson Flagg, one of the most careful and conscientious observers, has watched the habits of robins attentively, in season and out of season. He says he found a mother bird, during a dry season, feeding her young exclusively upon cut worms. As the robin frequently rears two broods in a season, the consumption of larvæ is something enormous; the old birds prefer these on the hard shell, and give the soft ones to their young.

Some 20 years ago, the horticulturists of Massachusetts petitioned the legislature to take off the name of the robin from the list of protected birds; the friends of the robin interfered, and had, as usual, an investigating committee appointed. Prof. Jenks, chairman of the committee, reported that from daily examinations of hundreds of specimens, the undigested contents of their stomachs from early in March to the first of May, contained not a particle of vegetable food. Nine-tenths of it consisted of the larvæ of the *bibio albipennis*, from 100 to 200 being taken from a single bird. This larvæ is very destructive to strawberry plants and vines, and the fly infests wheat and other products. The larvæ live in swarms, perforating the ground like a honeycomb, the fly depositing all its eggs in one place. When the *bibio* harvest was over the robins resorted to other insects, until late in the season when they feed on elder and poke berries, or, these failing, upon orchard fruits. Fancy a farmer who had shot the industrious gatherer of *bibios* for satisfying his hunger with a few berries, asking the heavenly Father for his daily bread!

How pure and sweet natured should one be who has the meadow lark for a servant! He is an insectivorous bird also, and, his breakfast over, mounts to his half-way house in the sky and showers his blessing down on us, the unthankful and the evil.

In the Department of Agriculture at Washington, there is a collection of the stomachs of birds, prepared by Prof. Glover, which furnishes the most conclusive proof that the favorite and natural food of most of our birds is animal, and that fruits and seeds are taken as condiments. The graminivorous birds feed their young upon insects; a single pair of sparrows will destroy, in the breeding season, 500 insects in an hour.

A curious fact may be noted in connection with the protection of birds. As the country is settled and cultivated singing birds multiply, and that is perhaps the reason why England and the continent of Europe is more vocal with bird music than our own. John Burroughs seems to have the best of the argument in his comments upon the Duke of Argyle's comparison between the songsters of the two continents.

The instructed conscience of communities is expressed in prohibitory laws. In Ohio the penalty is from two to ten dollars for killing or attempting to kill, at any season of the year, any sparrow, robin, blue-bird, martin, thrush, mocking-bird, swallow, meadow lark, pewee, wren, cuckoo, indigo bird, nuthatch, creeper, flicker, warbler or finch, oriole, red-bird or cat-bird.

In Pennsylvania it is forbidden to kill any insectivorous bird. In Vermont the list of protected birds includes ground-birds, chick-a-dees, *linnets*, humming-birds, blue-birds, and cherry-birds. There are fines in many States for the destruction of eggs and nests. In the District of Columbia possession of insectivorous birds, their eggs or nests, is held as *prima facie* evidence of killing, and the law "confiscates the gun of any person carrying or using such weapon on Sundays." This is for the protection of the *birds*, mind, not of the Sunday.

As good citizens we have a common interest in the protection of all insect feeders and destroyers, and should each be a law unto ourselves. But there are "higher utilities," as Mr. Dodge says, "than those that minister to the stomach and back," and the principle of compensation is an irrevocable natural law, which can no more be violated in our dealings with the birds, without violence to our moral nature, than in any other relations of God's creatures.

Who would live in a songless world? Last summer when the famous Mendelsohn Quintette Club were singing in Los Angeles, as I passed down the street I heard a duet between the soprano and a mocking-bird swinging on an eucalyptus tree near the open window—"the last rose of sum—," "tweedle, tweedle," up and down through every note in the scale, completely overpowering the next two lines. The soprano's voice rose clear upon a trill, executed at the end of "no rosebud is nigh;" "i, i, *i*," carolled the bird, emphasizing and drawing out each note. Every pause was filled by the mocker's exultant outpour of his entire repertory, from the chee, chee, chee, of the sparrow's, the canary's softer, shriller, more varied notes, to the mimicry of the cat-bird. The singing ceased, and a violin solo followed, through which the mocking-bird was silent.

The concert of the next afternoon, though most enjoyable, did not please me so much as the voluntary from that treetop.

In our climate we are not prepared by months of wintry silence to welcome the vernal choirs. But what New Englander does not remember the hour when

"The robin and the bluebird, piping loud,
Filled all the blossoming orchards with their glee;
The sparrows chirped as if they still were proud
Their race in Holy Writ should mentioned be;
And hungry crows, assembled in a crowd,
Clamored their piteous prayer incessantly,
Knowing who hears the ravens cry, and said,
Give us, O, Lord, this day our daily bread."

JEANNE C. CARR.

Pasadena, Jan. 21, 1882.

Tuolumne County Notes.

EDITORS PRESS:—Refreshing is our present copious rain; inspiring to our tender infant grain. It strengthens faith in nature's primal law, which stands revealed eternally without a flaw. All our forebodings, as regards a dry and profitless season, are washed away by the blesse rain. It appears as if it was general all over the State. If the South is still left out of the present baptism, she will deserve sympathy. Rain is grain, and grain is flour and food for the millions. Railroads and monster monopolies wield a powerful influence, but how insignificant they appear when the heavens refuse to open up their fountains, so we may receive the promised increase for intelligent labor. Many a heart-prayer of thanksgiving ascends for the present timely outpouring. A large sheep raiser was caught yesterday in the commencement of a copious shower. I asked the dripping occupant of a buggy if he would not come into dry quarters for the shower to pass over. "Oh, no," was the answer; "I like it. It is $500 in my pocket. I have 19,000 sheep requiring to be fed." Not alone was Mr. Reicth, of Merced City, oblivious to personal comfort. Many a happy heart was willing to enjoy the glad tears of Dame Nature when considering the consequences involved by rain or no rain. Rain it is, and seemingly abundant, for all of which we are truly thankful.

The grain amongst the foothills has not suffered from the frost and dry spell. The feed for stock was very short and drying out. The acorn crop was very abundant, which served a good purpose. Hog raisers have realized six and one quarter cents per pound by the lot. All bands en route to market seem in splendid order—ranging from 200 lbs. and upwards. The crop of acorns amongst the foothills is assuming a fixed value, and will compare favorably with fruit-bearing trees. Some families make a business of gathering them for hog dealers, finding a ready sale. They become a God-send when barley and wheat reach their present prices.

Orchardists are making some mistakes in budding the pear into apple stocks. The apple should be grafted or budded into pear stocks. The pear into its own wood. The apple is more liable to be infected by insects than the pear. The quince will thrive to be grafted into pear roots, as they are comparatively free from suckers. I fully agree with your correspondents regarding the long method of pruning the grapevine and the distances mentioned for planting. Let anyone mark a strong vine which is allowed to extend its borders, grasping support by its fingers, twisting small twigs, and mark its healthy, strong and robust growth compared to closely-trimmed and stunted vines. It is certainly remarkable how such experiences should have continued the present system so long. Less labor and expense, healthier vines and a better product would follow the adoption of the rule laid down in your last issue by the Portuguese system.

Our railroad is assuming a healthy existence. Before two years pass away, Tuolumne county will be in communication by rail with the outside world. Fruit culture will then begin in earnest; the codlin moth to the contrary notwithstanding. It is to be hoped that our county papers will give a little more attention to agriculture and horticultural industries in the future. Mining is well enough, but other sources of wealth should receive some little attention. Local papers should be well posted regarding the products of the county they represent, or they fail to fulfill the obligations which their position requires. All this must be gained and attained by a wide-awake visitor, who is not afraid of a ride upon a buck-board or a tramp with a stout pair of stoga boots to repel the dog of the farm or orchard.

We again thank kind nature for her down-pouring rains. It contains grand possibilities within its falling drops. It is a theme for poet, priest or king, and awakes a religious reverence as it gleefully comes down to banish dispairing forebodings. JOHN TAYLOR.

Chinese Camp, Cal.

Vines With Long Canes.

EDITORS PRESS:—We have no phylloxera here now, but in other matters besides protection from this pest I have tested the relative values of long and short canes. The Reisling bears best with us with a stem at least 4 ft. tall and canes half as long as the stem. All varieties of Muscats bear best on short stems, with canes cut back to only a few inches in length, thus making the vine with its loads of fruit lie on the ground nearly as closely as a cucumber vine. This, of course, would produce mildew in cool climates with damp surface of soil. But my greatest success with long canes was in my seedless White Corinth grapes. I grafted a quantity on Mission and Rose of Peru roots, in March, 1879. Last spring the union between graft and stock was so imperfect as to endanger their breaking when handling them in pruning, so we left them wholly unpruned; for a like reason they were left without hoeing or plowing. One of these vines produced 42 lbs. of the finest seedless grapes. All left unpruned did about as well, while those pruned in the usual style did not yield a fourth of that quantity.

W. A. SANDERS.

Fresno County, Cal.

HORTICULTURE.

Orchard Notes.

EDITORS PRESS:—I address you from a new locality; shall write you no more from "Cosy Nook," as it has passed from my possession into the hands of those "who reap that they did not sow, and gather that they did not strew." Oh, these awful "Spanish grants!" Will the last one ever be laid, and its "floats" and "resurveys" and "rejectments" and "affirmed," and other unknowable qualities, be a thing of the past? Let us hope so!

During the past three months I have looked about this noble valley, chatted with hundreds of people and examined many orchards. The successes and pleasures of the people are far more numerous than their defeats and sorrows, but success and pleasure are so common that a touch of defeat or sorrow seems to stand out in a rather prominent position.

Leaves and Fruit.

Most of the new orchards I have seen are in good condition and are getting a thorough dose of some kind of insect-destroying spray. The larger part of the old orchards are never likely to show the trees of two, three, or more feet in diameter, that can be found in Eastern orchards. We can calculate on our young trees being far more productive and profitable than those of the same age in the States. Must we also expect them to decay sooner? If so, and the cause is in our climate, then we must adapt our cultivation and style of pruning to our climate. I am not sure we have fully learned how to do this. Most of the old orchards were deprived of all natural shade and coolness at the trunk, and extensively cut back or headed in at the top. I think it will be found, as a rule, the longer and less shaded the trunk, the thinner and harder its bark, and the greater tendency of the top to spindle and require heading in. Such trees often show about as much fruit as leaf, and look well until within a few weeks of time to mature the fruit, when the leaf begins to change color and the fruit fails to ripen up in shape. Half as much fruit and twice as much leaf might show a different result. I wish some one who has a home and orchard would try grafting (instead of cutting) the tips of his trees to some heavy-leafing, scant, or non-bearing variety, thus giving the tree a better chance to get some help from the atmosphere.

Suckers.

I wish now to make some points in favor of that much abused natural help called the "sucker." A truer name would be the "helper," or protector. Mother nature throws it up at the base of all large growing stalwart trees. If not interfered with it lives to shade, protect and invigorate the tree, until the bark of the tree is quite thick, and not easily cooked or blistered by the sun, then like all things that have fulfilled their mission it passes away. Orchardists, as a rule, treat it as an enemy, cut it out and then try to replace with a board, sack or other artificial shade. The result is a trunk with its south side covered with a thin hard bark, easily blistered by the sun and the blistered spot is soon taken possession of by the borer. I have never known borers to get into a trunk shaded and kept cool by its own natural shade.

The sucker protects the trunk from tools and animals. Under their protection the bark on the south side of a tree is as thick and spongy, as little liable to knock off in large flakes, as on the north side. The base of the tree is much thicker and stronger, giving more room for roots to attach; and what is, perhaps, of more consequence than all else, the sap or unripe plant food gathered by the rootlets can get a chance to ripen in the air cells of the leaves near the ground, and return to push forward root growth much sooner than it could if it had to pass up a long body to find a leaf, and then return down a heated tree trunk, for the heat of the trunk would probably be an opposing force.

I firmly believe planning and pruning for more leaves and less fruit on young trees will insure more vitality for old age. I am aware that low-branching trees are in favor in many places, and low branches take the place of suckers somewhat, but many object to low branches on account of difficulty in cultivating. Such growing varieties as the White Winter Pearmain are hard to keep off the ground.

Suckers may be trimmed, split, headed in, and handled in any way to make the most leaf, and it will be found *wet* about the base of the tree hours after a suckerless tree trunk is dry and hot. A land to catch codlin moth may be put above them. If of interest to your readers, I hope to read the experience of others on this point. I suppose the value of good tough suckers in school and family discipline need not be mentioned. CHAS. A. WYMAN.

San Jose, Cal.

[We sincerely sympathize with our correspondent in the loss of his home, where by 16 years' labor he had made a rocky canyon into a very nice and productive retreat. His courage seems still strong, and the future is assured to such an one, although the present may seem dark.—EDS. PRESS.]

The Other Side Again.

EDITORS PRESS:—We should let Mr. Brier's answer to "The Other Side" pass unnoticed, had it not been for the first paragraph, in which he tells us it is "for the sake of truth, and to encourage beginners, he answered the article 'The Other Side.'" Well, that is pretty good!

Let us see who is writing truth or articles calculated to mislead the poor man. Hear what he says in the issue of the 21st of this month, in his article on bugs:

> I have been humbugged for about 20 years by writers who create bug bears to frighten the fruit men.

Now, Mr. Editor, he would have you think all this got up about the fruit pests in San Jose and other localities, is just to keep him from selling that little nursery of his. Read his article of Aug. 13, 1881. I think there was never an article published that did more harm and more misrepresented the fruit interest on this coast.

Here is a paragraph:

> If you want to grow good peaches, you must select deep, well-drained alluvial soil extending down to permanent water, which should not vary much from 12 ft. below the surface; even then, summer irrigation is needed. Trees may grow a few years in other places, but they will fail when failure goes hard. There are other places in the foothills where peaches may be produced with the aid of summer irrigation.

When he wrote that article he ought to have known better, for it does not require any such location or irrigation to grow as fine peaches as were ever exhibited. The China cling peaches on exhibition by G. W. Hinclay, in the fall of 1880 at the Mechanics' fair, were awarded the premium for beauty and size, one being four inches in diameter. They were grown on his "sky high ranch," a mountain farm; no water near the trees, less than 100 ft., and that reached only by digging.

Hear what he says in the third paragraph of his article on bugs in the RURAL of Jan. 21, 1882:

> The time is coming soon when nothing except good fruit will sell. Even now, poor fruit does not pay for handling.

We agree with him exactly. Does that sound as though he was going to get rich selling peaches at 2 cents ℔ lb. In the fall of 1881, when fruit sold better than it has for the last

15 years, there were hundreds of men, nay, thousands of them setting out trees that must have 3 or 4 cents ℔ lb. to make it pay. For none but the best of fruit will sell, hence to raise fruit that will pay, we have got to prune well, cultivate thoroughly and thin close; hence the yield will be small. Our estimate, based upon many years' experience and close observation is as follows: Ten acres of peach trees with 160 trees per acre, 50 lbs., or two 25-lb boxes to the tree of good marketable peaches, for a period of ten years, is a good yield on trees planted so close (16x16 ft.), for at the age of eight years they are robbing each other. Fifty lbs. at 2 cents ℔ lb. equals $1, and 160 trees, $1 per tree, equals $160. Ten acres one year equals $1,600. Ten acres ten years equals $16,000. Commission, $16,000, at eight per cent., equals $1,280; $16,000 minus $1,280, equals $14,720; net proceeds for ten years, $14,720.

Mr. Brier says he sold $640 from each acre of six-year-old peach trees last season. Is there any man who thinks he can plant 10 acres in peach trees and make them average him $640 per acre for the period of 10 years? It is in the outcome we must make it pay.

First-class fruit land in this section sells at $100 per acre, while near Vacaville, in small lots, some unimproved land has sold for $200 per acre. We make our estimate on good land at $100 per acre—$1,000 for 10 acres. Interest on $1,000, one year, at 1%, equals $120; 10 years' interest and principal, equals $2,200—to say nothing about compound interest, which we poor devils have always had to pay until 1881 let us out, and we could sing the doxology.

He says a good man can take care of 10 acres and not work hard. A good hand will cost $40 per month, and one year costs $480; 10 years, equals $4,800; board, $4 per week, one year, $250; 10 years, $2,500. Additional expenses, wear and tear of farming implements, horses, harness and wagons, and interest on the same, $25 per acre, or for 10 years, $2,500. Cost of picking and delivering in San Francisco, two 25-lb. boxes, or fruit from one tree, amounts to 50 cents for 160 trees, or one acre, $80; 10 acres for 10 years, $8,000. Total expenses of 10 acres for 10 years, $20,300; minus $14,720, gives the net proceeds of 10 acres for 10 years, $5,580—a nice little debt to saddle on the poor man's shoulder. Unless we get at least 3 cents per lb. for good marketable peaches in this section, it will not pay.

We have two apricot orchards in our minds that, for the last six years, have not averaged 50 lbs. to the tree. One orchard is on the best of land, trees set 18 ft. apart; the other is rolling hills, and the trees set 20 ft.; and yet those orchards have paid for the reason that they are in the earliest locations in the State. Much of the fruit has sold at 12½ cents per lb. If it had sold at 2 cents, the orchards would have run behind.

If the canners want good fruit and get it cheap, they must erect canneries near the orchards. If we had a cannery in Winters or Vacaville, we could furnish fruit of much better quality. All the fruit shipped to San Francisco from here is picked at least two days before it should be. If it is left till it is ripe, then it will be too soft. The boxing of it up while hot, then packed in a tight car, will cause it to rot very fast. We would advise the poor canner to go to Mr. Brier next season if he wants cheap peaches; two cents per lb. is all he wants; that's good enough. They can't get ours for that; we will dry them before we will take two cents.

Mr. Brier says: "If H. P. is discouraged up at Winters, I will show him land where trees will pay, and no bugs near it. The land is near what I have bought." Then, in his article on bugs, in the same issue, he tells us the woolly terror had spread all over his orchard. Now, his stories don't hang together; and unless we get encouragement from some other source, we will be likely to stay in Winters. We have been here 25 years. We sold 12,000 boxes of fruit last season, the most of them apricots.

H. P.

Winters, Jan. 26, 1881.

[We wish our readers to take the bitter with the sweet in this discussion of the fruit interest. We think our correspondent's computation too dark in several particulars, but it will serve a good purpose in getting all planters to figure more closely on cost and product, and it will draw out the views and experience of others on the points advanced. With reference to the apparent contradiction, which is shown in the last paragraph above, we may remark that we suppose Mr. Brier referred in one case to his old orchard, and in the other to land he has recently bought at a distance therefrom. We hope the discussion of the prospects of the fruit interest, etc., will go on, for all will be edified; but we hope all contributors will guard against epithets or imputations. Let the matter be discussed calmly and in a dignified manner.—EDS. PRESS.]

THE use of salicylic acid for the preservation of articles of food, has been forbidden by the French government. This action is based on the allegation, which is claimed to be proven, that this substance is dangerous to health when used in sufficient quantity to effect the object of preserving food.

FORESTRY.

Four Rare Trees of Arizona.

[Read before the California Academy of Sciences, by J. G. LEMMON, Oakland, Nov. 21, 1881.]

Two Pines, a Cypress and a Sycamore.

During the present and the preceding season the writer has contributed to the Botanical Museum of the California Academy of Sciences specimens of several rare or little-known trees, collected in the mountains of Arizona, and which, for want of time or strength, have been presented almost without comment.

Agreeable to the request of several members of the Academy, an attempt will be made in this paper to give some points of presumed interest concerning a few of these trees.

But, first, it is necessary to assert, in the hearing of the ordinary traveler, that there are trees of any kind in the arid territory of Arizona. This consideration prompts to a few words of general description.

Arizona Territory comprises a large cross-section of that broad interior region between the Rockies and the Nevadas that is often miscalled the Great Basin. This region is characterized by areas of desert land, so-called, undulating plains of white or reddish sand, sparsely dotted with shrubs such as creosote bush, mesquite, palo verde, acacia, etc., plants that thrive with little water and that love the sun. Also, this is the home, *par excellence*, of the cacti, of all forms and sizes from the little pincushion to the large and stately tree cactus.

Rising out of these plains are bald mountains of many hues and shapes in accordance with their rock composition. Some of these mountains are disposed in long parallel chains, especially those in the north end of the Great Basin and mostly included in the State of Nevada. Southward in Arizona the mountains are generally so deeply submerged with sand and gravel, the bed of a recent vast inland sea, that only a few of the most elevated peaks remain uncovered. These peaks are thus more or less isolated and separated by wide stretches of arid desert, and this isolation inevitably leads to the production of peculiarities of its products, especially to differentiation and varieties of floral objects. As most of these mountains are not high and are but a few miles in circuit, with no living springs in them, their flora is limited to dry-weather vegetation and such annuals as are nourished by the rains and coolness of a short winter and the few days of rainy season in midsummer. It will be many years before botanical exploration on this coast will be conducted so thoroughly as to comprise a complete knowledge of all the peculiar plants that are annually spreading their petals to the sun on those lonely mountains and telling to the untutored aborigines the story of their mysterious origin, and revealing to his dull eyes the beauty of their peculiar forms.

Other Higher Mountains

Are usually found disposed in chains of several miles in length.

These chains are the more distinct vestiges of great submerged ranges that traverse the whole region parallel with the great Rocky and Nevada ranges. These high chains are often of considerable breadth, and their outlying peaks frequently enclose valleys of great fertility, which are usually well forested on the north slopes as well as on the floors of the valleys, if high enough to be cool and well watered. In fact some most delightful parks have been discovered, almost inaccessible, fenced round with bristling peaks and upheld close to the sky and the stars.

It is in these alpine valleys and slopes that most of the new things are found, the descriptions of which are fast appearing in botanical journals at the East.

As stated in a former paragraph, many of the

Trees of our Great Sierra and Coast Ranges

Are found also on the highest mountains of Arizona. In several localities lumber factories have been in operation for years. An especially rich valley of pine timber is located in the Chiricahua mountains, utilized by a large factory, which for years has supplied the market of Tombstone.

Large plateaus of good timber are crossed by the line of the Atlantic & Pacific R. R., near the middle of Arizona, on the parallel of 35°.

These forests are composed principally of *Pinus ponderosa*, Douglas spruce and white fir, with several species of oak. Among these trees, or apart from them, on the highest peaks are found the rare and little known trees to be described.

No. 1.—"Charles Wright's Sycamore."

Platanus Wrightii, Watson—The sycamore is a small genus of but six species; the only genus of the order of *Platanacea*, or broad-leaved plants; found only in the northern hemisphere—two species being in the Levant, one in north Africa, one in the Mississippi valley, and along the Atlantic sea-board; a fifth species is found growing in the banks of lowland streams in California and Oregon, while a sixth very distinct species has lately been detected as growing along the lower washes of certain streams of Arizona.

The sycamore is always a striking object from its usually very large size, the smoothness of its bark, the epidermis being removed annually, the great size of its many lobed leaves, and the singularity of its button-ball fruit hanging down on long peduncles. The Eastern species, *Platanus occidentalis*, is the largest, though not the tallest tree in the United States, east of the Sierra Nevada. Specimens have been measured, in the bottom lands of the Ohio, that are 40, and even 50 ft. in circuit; more than 13 ft. in diameter.

Our common California tree, *P. racemosa*, has never been found so large, the largest measurement being reported from near Los Angeles, of trees over 29 ft. in circumference. The new Arizona species is not a large tree—only 10 to 15 ft. in circumference—while much more of the epidermis remains on the trunk than in other species. In other respects this tree differs most from the other two United States species in characters of the leaf and fruit. The leaf of the Eastern sycamore is very large, often 18 inches to two ft. wide, and sinuate-lobed into three to five large divisions. The fertile ament is globular, about three-quarters of an inch through, and is solitary upon a long, string-like peduncle.

The leaf of our California sycamore is smaller, very variable, as regards the number of lobes, usually five-lobed beyond the middle, densely tomentose when young, with white or rusty short hairs. The button-balls are about an inch in diameter, arranged in numbers varying from two to seven along a moniliform or necklace-like spike, which depends among the leaves.

The leaf on mature trees of the new species from Arizona is smaller, very acutely and deeply, 5 to 7-lobed with a little tomentum beneath. The lower lobes project backward, and form a deep sinus around the long petiole, 2 to 5 inches. The raceme of fruit is equal to the length of the leaves, and is composed of three balls of about three-quarters of an inch in diameter.

History.

It appears that Charles Wright first collected specimens of this tree while on the survey of the United States and Mexican boundary in 1851–2, but not until recently was a careful examination given to the specimens, together with others collected by later botanists, by Prof. Sereno Watson, at the Harvard herbarium. He found characters decidedly distinct from all known species, and published a description in "Contributions to American Botany," issued April, 1875.

We found *Plantanus Wrightii* sparsely along the streams flowing out of the Santa Catalina mountains north of Tucson, the Santa Ritas south of Tucson, the Patagonia mountains, on the Mexican boundary, and especially fine trees, seemingly entirely at home in the Chiricahua mountains, some in the north end of the range near Dos Cabasas, others near the south end in Rucker valley.

No. 2.—"New Arizona Pine."

Pinus Arizonica, Engel—The pine family comprises a large number of the most useful trees on the earth; justly entitling the family to the appellation recently given to it of "the beneficent pine."

There are found throughout the globe nearly 70 species of pine, 11 of which are in the Atlantic States, and 19 in the Pacific States, 7 of which are in Arizona. Not one of the Atlantic species extends to our division, and vice versa. Three of the Arizonians, however, are the most common species of California, namely, *Pinus monophylla*, Tor., *P. contorta*, Doug., and *P. ponderosa*, Doug. Two of the others, namely, *P. edulis*, Engel., and *P. Chihuahuana*, Engel., are found also in Mexico, and are but little known, while the two remaining, *P. Arizonica*, Engel., and *P. reflexa*, Engel., have but lately been discovered in Arizona and are, perhaps, local species limited to a few peaks.

Pinus Arizonica was first detected by Dr. J. T. Rothrock while with Lieut. Wheeler's expedition through the border States in 1874. He found a north ravine of the Santa Rita mountains, 40 miles south of Tucson, partly clothed with a kind of pine closely resembling small trees of *Pinus ponderosa*, our common yellow pine so abundant in the Nevadas; but his tree bore its leaves in fascicles of *fives*, instead of *threes*, as in the *ponderosa*. This aroused his suspicion, and he forwarded his specimens to Dr. Engelmann, with the remark that this tree was "the best lumber of that region, and there called yellow pine." Dr. Engelmann seized upon its meager differences, and at once announced a new species, but admitted that it bore too many characters of *ponderosa*, and also some of a Mexican species, *P. Montezumæ*. It remained for other botanists to gather other specimens from other peaks, and finally, for Dr. Engelmann himself to make a pilgrimage last September to the original locality, and receive confirmation through his own eyes of those wonderful deductions which the masters make in their closets, based upon fragments of plants sent them by field botanists.

We first met with the *Pinus Arizonica* on the summit of Mt. Graham, at an elevation of about 10,000 ft., and as a component part of a thin forest of pine, spruce, fir and juniper, forming a lovely open park on the mountain top. This was in August of '80. Dr. Engelmann declared the specimens were very satisfactory, and rather strengthened the supposition of distinctness. In September, Prof. Sargent, of the Census Bureau of Forestry, with Drs. Engelmann and Parry as assistants, arrived on this coast, and the two first-named gentlemen went down to Arizona and with much effort climbed up into the Santa Rita mountains, to the altitude of 7,000 ft., found abundance of the pine in question, and became confirmed in the conviction that it was indeed a new species.

During the present year it has been collected in several localities, widely removed. In April, Mr. Pringle, employed by Prof. Sargent, thoroughly explored the Santa Rita mountains, making full specimens of the *Arizonica*, its branches, cones, cross-sections of timber, etc., to be deposited in a New York museum.

In May, we found the puzzling tree sparsely inhabiting the deer park on the summit of the Santa Catalina mountains, mixed with a form of *ponderosa*, that also bore leaves in fascicles of fives. This led the writer to doubt the distinctness of this species, and caused him to desire to see it in still other localities. The wish was gratified fully a few weeks after, when botanizing the lofty range of Chirricahua mountains, in the extreme southeast portions of Arizona. In the little valleys on the north side of the highest peaks of this noble range, was growing this remarkable pine, along with its usual companion, the *ponderosa*. Here the differences were decidedly more marked. The *Arizonica* is always smaller, with darker bark broken into smaller plates, glaucous-green branchlets, and with shorter, narrower leaves, always in fascicles of fives. In vain we sought for abberant forms of this species, or of the *ponderosa*, beside it. They certainly appear very distinct in this locality, despite the similarity of the cones, etc.

Both species have many features in common with four-fifths of all known pines, and forming the large section called *Pinaster*.

From the other small section, *Strobus*, the first section is distinguished as having the cone-scales generally thicker, the upper exposed portion called the apophysis having a dorsal tubercle called the umbo, which is generally armed with a prickle; leaves 1 to 5 in a fascicle, their sheaths usually persistent; wood generally harder, heavier, and more resinous.

Characters Compared.

The salient and seemingly distinctive characters separating ponderosa and Arizonica may be thus compared:

Pinus ponderosa—A large tree, often 15 to 20 feet in diameter, with usually yellowish, grayish, or reddish-brown bark, sometimes quite dark, generally divided by longitudinal fissures into large plates; cones often very large, 6 to 8 inches long; branchlets brownish green; leaves usually long, 10 to 15 inches, large and strong, normally in fascicles of threes. The species is of wide range, from Alaska to Mexico, and eastward to the Rocky mountains. It is also exceedingly variable.

Pinus Arizonica—A small tree not exceeding four ft. in diameter, with dark, finely divided bark; small cones, 3 to 4 inches in length; glaucous-green branchlets; leaves, 4 to 8 inches long, very slender, weak, in fascicles of fives. These characters are constant so far as detected.

The only absolutely invariable distinction between the species is microscopic and was detected by Dr. Engelmann. He discovered that *Ponderosa* has the strengthing cells of the leaf near the epidermis and also *around* the few longitudinal resin ducts, while *Arizonica* has *none* around the ducts.

At two localities in Arizona this *Pinus Arizonica* is sufficiently abundant and at so low an altitude, 7,000 to 10,000 ft., as to be obtained by lumbermen, who have erected factories and have manufactured considerable quantities of lumber annually. Of course this lumber is not so free from knots as are the immense, tall, limbless pines of our royal Sierra, but as the timber is hard and durable it serves many useful purposes in the mining and building enterprises of that fast growing community.

Principal Localities.

One of these localities is that so often alluded to in this paper—the large canyon coming out of the north side of the Santa Rita mountains, where the specimens were first collected by Dr. Rothrock. A factory erected there several years ago suspended operations only a few months ago, when the progress of the S. P. R. R. brought our superb Truckee lumber into Tucson at much less cost.

The other locality is in the distant Chiricahua mountains, spoken of, where is found a deep, well-forested valley, or rather a broad canyon coming out of the north side of the highest peaks of that lofty range. A lumber factory there of several saws is still actively employed in getting out boards, planks and square timbers for the mines and buildings at Tombstone and vicinity. The principal trees of this valley are *Pinus ponderosa* and Douglas spruce, but trees of the new species are not unfrequent, and are often of the largest size.

[TO BE CONTINUED.]

THE FUSIBILITY OF SOFT SOLDERS is increased by adding bismuth to the composition. An alloy of lead 4 parts, tin 4 parts and bismuth 1 part, is easily melted; but this alloy may itself be soldered with an alloy of lead 2 parts, bismuth 2 parts and tin 1 part. By adding mercury, a still more fusible solder can be made. Equal parts of lead, bismuth and mercury, with 2 parts of tin, will make a composition that melts at 122° F.; or an alloy of tin 5 parts, lead 3 parts and bismuth 3 parts, will melt in boiling water. In mixing these solders, melt the least fusible metal first in an iron ladle; then add the others in accordance with their infusibility. To cast strips of solder, pour the molten metal on a flat surface of stone or metal, drawing the ladle along the while, to leave a thread of metal of the desired substance.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

Grange Notes.

As an educational force, the Grange has been an abundant success. This feature stands well to the front among the great benefits to be derived from our organization. The Grange is a great school doing an immense good to a class of people who have not in their power to turn back to boyhood's days, and do over the things which have, from neglect or necessity, been left undone, but must now be obtained from other sources.

Little by little the world is finding out that the Grange was created for noble purposes, and slowly the people outside the Order are acknowledging the value of the Grange. Let these tributes (oftimes hard-wrung) stimulate us the more to be constant in the work of doing good to all mankind as well as benefiting ourselves. The Grange is an assured success. Let us help spread the light so that all mankind may receive its effulgent rays and be warmed into a better manhood and womanhood.

The Grange and its teachings have awakened many dormant faculties that have previously existed, and for the want of an opportunity to bring them out were entirely useless. This has now been changed; we are now demanding a higher standard in agricultural journalism—that thorough, practical kind, adapted to the wants of the people. The fancy, theoretical, kid-gloved article is and should be laid aside. The Grange press throughout the country, by their devotion to the cause, has been the means of awakening this desire to a great extent, and for a better acquaintance with their duty as citizens. Urge upon each individual Patron the necessity of supporting, with a liberal patronage, the papers that are boldly standing to the front, advocating our principles and fighting our battles. These efforts should be sustained; more Grange papers should be read by Patrons. The Grange has taught us forcibly that the higher attainments are reached only by greater knowledge and skill.—*Patron of Husbandry.*

Not only the social amenities and the lessons of high morals are taught in the Grange, together with the habit of fostering aspirations beyond the monotonous present, but intellectual truths of the first importance and magnitude are disseminated through its agency. The principles of social and political economy are made familiar by its means. The narrow limitations of ordinary practical life are enlarged, and broader and healthier views are inculcated. The best methods of legislation are impressed on the mind, and the proper topics of it are sagaciously selected. The vital relations of producer and consumer are more clearly understood. Farmers are made to comprehend that they are freemen in the truest sense and for the highest ends. This is not by any means an imaginary picture. Those who have been in the Grange since its formation and establishment, will readily testify to the truth of more than we have stated. They will freely admit that the Grange is an educator, and a thorough one; that it effectually stops the waste from which the agricultural character so long suffered, and tutors it in the art of saving and satisfying resources on which men in other avocations, when they happen to possess them, make constant drafts for the successful conduct of their lives, and the enjoyment of their mature age. It is well to keep these simple facts in mind, that by so doing, this timely organization may have the widest scope for the employment of its many and valuable influences.—*Massachusetts Plowman.*

Co-operation Sentiments.

MOTTO.—"We seek the good of each through the good of all."

Co-operation assumes as its basis that the well-being of mankind depends on the voluntary acceptance of that principle of perfect love which, for the Catholic faith, is embodied in the life of Jesus—and on its consistent application as a constructive social force, to that world of industrial activity which hitherto it has only touched by the attempt, ever renewed and never more than partially successful, to remedy here and there some of the many evils constantly springing out of its present selfish structure. It is the office of its promoters to work out this conception into its details, and thus show the connection between co-operation as a practical system of industry, commerce and social life, and the principle of religious trust. This religious foundation identifies co operation with the Catholic faith in the divine nature of Christ.—E. V. NEALE, England.

The greatest service that those whose position in life has given them the advantage of greater intellectual development can render to the laboring classes, is to teach them to grasp the means of self-help which lie within their reach, and strengthen their trust in their own power.—SCHULZE DELITZSCH, Germany.

How easy it would be for large layers-up of wealth to form associations; and how easy would it be for them to bring about, as by a charm, a social regeneration, if they could elevate their sentiments to the pleasure of working for the welfare of other men. They could then, by simply appealing to intelligence, employ that capital which they don't know what to do with, to such social amelioration, and give the first signal of peace to the entire humanity.—JEAN BAPTISTE ANDRE GODIN, France.

Profits of low sales will be recouped somewhere. If no other way offers, they will be squeezed out of labor, or slipped away from the customer. The workers or the work will suffer. In the stores of competition, dealers are goaded by buyers' screws to resort to all manner of shifts to under-sell one another. The blind demand for cheapness puts a premium upon fraud.

Co operation is the gospel of hope and peace which sorely needs to-day to be preached among our people.—R. HEBER NEWTON, U. S.

Grange Elections.

NORTH BUTTE GRANGE.—C. C. Partridge, M.; F. F. Clyma, O.; Dr. M. Murtry, L; Thos. Bruce, S.; D. Hedger, A. S.; Mrs. Mary Graves, C.; L. D. Hedger, T.; Mrs. Mary E. Durley, Sec'y; F. A. Hedger, G. K.; Jennie Hedger, Pomona; Ella Hedger, Flora; Ella Stevenson, Ceres; Mrs. Mary Partridge, L. A. S.

SUTTER CREEK GRANGE.—John M. Post, M.; Wm. Strickland, O.; Edmond Andrews, L; John Richards, S.; Thomas A. Rice, A. S.; Sister Millikin, C.; Josiah McKindley, T.; Mrs. Josiah McKindley, Sec'y; Charles Henderson, G. K; Miss Leonia Kneiss, Ceres; Mrs. Malissa Theile, Pomona; Miss Marilla Harmon, Flora; Georgie Post, L. A. S.

MAGNOLIA GRANGE.—I. N. Ritchie, M.; J. R. Nickeson, O.; D. Bilderback, L.; G. W. Sales, S; B. B. Nickeson, A. S.; Emma Nickeson, C.; J. W. Gautier, T.; G. W. Cunningham, Sec'y; Monroe Rollins, G. K.; Mrs. J. R. Nickeson, Ceres; Mrs. I. N. Ritchie, Pomona; Mrs. G. W. Sales, Flora; Mrs. D. Bilderback, L. A. S.; J. W. Gautier, Trustee for three years.

SOCIAL GRANGE.—W. H. Atkinson, M; Mrs. J. H. Hamilton, L.; J. O. Reeves, O.; J. H. Hamilton, S.; Robert Pollock, A. S.; J. O. Sherwood, Sec'y; James Putnam, G. K,; Mrs. Alice Pollock, Ceres; Miss Priscilla Pollock, Pomona; Miss Emma Dunlap, Flora; Miss Anna Hamilton, L. A. S.

SOUTH SUTTER GRANGE.—John Dyer, M.; A. S. Jackson, O.; Alex. Donaldson, L.; Charles Brown, S.; James Jones, A. S.; Cyrus Briggs, C.; Homer Sankey, T.; Benton Hudson, Sec'y; Wm. E. Roberts, G. K.; Mrs. Julia Dyer, Ceres; Miss Ella Jones, Pomona; Mrs. Harriet Harris, Flora; Mrs. Mary E. Hudson, L. A. S.

SACRAMENTO BUSINESS ASSOCIATION.—Geo. Rich sends the *Patron* an account of the progress of the Sacramento Valley Business Association: At the semi-annual meeting held in the parlor of the State House, reports of the Secretary, Treasurer, and the business of the association were submitted, and other details relative to the corporation discussed. On the election of three directors, the choice fell on Wm. Johnston (re-elected), Geo. Rich (re-elected) and Chas. A. Hull, for the term of three years. The house has a good business, and during the past year the sales have kept up a fair monthly average, with an upward tendency. The opening year is expected to still increase the sales and enlarge the trade on this coast. The following-named officers constitute the new Board of Directors for the ensuing year: Wm. Johnston, Pres't; J. T. Fletcher, Vice-Pres't; Geo. Rich, Sec'y; D. H. Fassett, Treas.; Geo. W. Hancock, A. M. Plummer, N. Mortis, Daniel Flint, C. A. Hull.

PICKING LEMONS.—Lemons should be picked at the right time and properly graded and sweated before being sent to market. The fruit should be picked when it is ripening. If it gets too ripe the rind begins to thicken and the acid is liable to deteriorate. The lemons should be put into large boxes and covered up, or if there is no danger of rain they can be piled up on the ground in the orchard and covered with sacks. In four or six weeks the fruit can be taken and carefully sorted; all large, overgrown, and all small lemons should be put to one side and shipped by themselves. Each lemon should then be rubbed with a woolen cloth thoroughly, to make it perfectly clean; this rubbing will give the rind a glossy appearance. Wrap each lemon in tissue paper, or a light-colored, thin manilla paper; pack carefully, and if the fruit is a good variety to start with, the result will be satisfactory.—*Riverside Press.*

KEEP YOUR BOILERS CLEAN.—Concerning cleanliness of boilers the *American Machinist* says: If dirty water is used in boilers of any kind, they should be frequently washed out. If they require it every week, it should be done. We remember an instance some months ago where a set of tubes were greatly damaged and several of the bottom rows burned out by reason of the dirt within the boiler. They were repaired, and the same thing occurred again. Finally, the suggestion was made to wash the boilers once a week if they were dirty, which suggestion was carried out, since which time there has been no trouble from that source. It has also been noticed that the valve seats and cylinders are not scratched as much as previously, and the boilers steam very freely, which, of course, reduces the coal consumption. Boilers should be always washed when they are dirty.

THE Walker river has been frozen to a depth sufficient to allow its crossing by heavy teams.

Agricultural Notes.

CALIFORNIA.

ALAMEDA.

CROPS.—Washington *Reporter:* The farmers do not manifest as much anxiety about the crop outlook as they did last week. The severe north and northeast winds had hardened the earth until plowing was in some places impossible, and harrowing was next to useless; yet the large area of land already into grain looked well. The rain of the last few days came before any serious damage had been done, and everything is now in the best possible condition. The showers have come in such a way as to do the greatest possible good, the smallest posible quantity of water running off in the water courses. The prospect for a royal crop was never better at this time in the season.

BUTTE.

STRAW BARRELS.—Chico *Record*, Jan. 21: Warren Hibbard intends, before long, to manufacture barrels and fruit boxes from the straw which is yearly wasted by our farmers. Experiments already instituted show that it is possible to make "wood," or its substitute, from straw of a tensile strength surpassing ordinary building wood. Mr. Hibbard informs us that he has handled a great many flour barrels that were made of straw, and that they are cheaper than wood and are much lighter and easier to handle. He intends using them in his new mill in Chico. He says that this material is capable of being carried through all the manipulations that wood is, does not shrink, takes a high polish and is water-proof. In short, it not only answers all the purposes of wood, but is vastly better than it.

CROPS.—Biggs *Recorder:* In conversation with a number of farmers in this vicinity, we are informed that the young grain never looked better in this valley than at the present time. The fields are generally clear of wild oats, while the stand of wheat is even and growing rapidly. At the present writing everything gives evidence that a large crop will be harvested during the coming season.

FRESNO.

VINEYARD ENTERPRISES.—*Expositor*, Jan. 25: From our old friend, Col. French, we glean these items of interest: Near Fowler Switch is a vineyard enterprise under the joint proprietorship and generalship of C. H. Kirby and H. A. Pearson, with E. B. Kirby as Chief of Staff, and W. N. Kirby as First Assistant Adjutant General. Active operations were commenced in October last, and a contract let to County Surveyor, C. D. Davis, to lay out checks and run the line of ditch. Since then nine miles of ditch have been constructed, which, as it runs through what is known as white, ashy land, was no small job, on account of the settling of the ground when the water was run on it for the first time. This portion of the work was placed under the immediate charge of A. McCall, and as he was kept supplied with everything needed, it was a sufficient guarantee that every obstacle would be overcome. The work has been accomplished, and a large volume of water is now flowing through the ditch, and the work of irrigating the checks is progressing finely. Four hundred acres have been leveed or checked off, and a considerable portion of the same leveled. The entire force, which is a large one, will be employed between this and planting time in leveling checks, by which time it is expected that the full section will be prepared for planting. A fine residence has been built and is now occupied by the family. Comfortable quarters have been erected for the employees, and a stable and other outbuildings put up that would well serve as a model for others. The impression that everything about the place conveys to the mind of a visitor is that, if ample means, intelligently and energetically applied, will force a success, dry year or not, it will be forthcoming. Two miles south of Kirby & Pearson's is the location of B. F. Godfrey's tract, the checking and leveling of 100 acres of which and the construction of a ditch to the same, is under contract and the work is progressing daily. By those that know him, Mr. Godfrey is considered a valuable acquisition to the county. In Yolo county, whence he came, he was connected with one of the large fruit farms, and while so engaged, being naturally a close investigator and earnest student, as well as a hard worker, he studied up the characters of the different vine and fruit pests, in their various stages and transformations, saving specimens of each particular form. An evening in conversation with him, over his little bottles, is equally as instructive and interesting as a set lecture from a high-toned, scientific cuss. Mr. Godfrey intends to devote his entire attention for the present to the raisin grape.

LAKE.

A GOOD YEAR.—Lakeport *Bee:* The past week we have had an opportunity of conversing with farmers from all parts of the county. They all agree in the opinion that the season up to the present time has never been more favorable for farmers. In Big valley especially, the ground has never been in better condition for seeding, and the farmers have taken advantage of these favors to put in a much larger area of grain than ever before. A very large majority of the farmers of this garden spot of Lake county are through seeding. In Scott's valley comparatively little plowing and seeding has been done, as their valley is much wetter and has a great deal more frost than in Big valley, the farmers prefer to wait until later in the spring, as it is safer and will bring the harvest just as early as if sowed in the fall. On the whole the prospects for Lake county were never more flattering than at the present time.—Since the above was penned a nice gentle rain has fallen which cannot help but brighten the prospects still more.

LOS ANGELES.

TUSTIN.—EDITORS PRESS: Yesterday we had the first good rain of the season—about 1½ inches. We have had slight showers before, but it always turned cold and windy after them, drying the ground and preventing vegetation from starting. However, this little rain that we had last came right, and it has been warm and pleasant since, with signs of more soon. It is surprising how soon the young grass will start and show itself after a warm rain, as already the plains begin to assume a green tinge from the starting grass, which is just beginning to make its appearance. The shower has had the effect to change the shape of the faces of the farmers around here; as before the rain their faces were as long as the moral law, but now they are as round and smiling as the full moon. If the season had not been so backward, 1882 would have witnessed a greater improvement here than ever before, as there had been a good many purchases of large tracts by men of means with a view to their improvement, and a great many new and elegant residences have already gone up. Should the season change, there is yet time, and the probability is there will be some 600 or 700 acres of vines set out, both of the raisin and wine varieties. However, if we should have no more rain, we are better able to bear it this season than ever before, as our irrigating facilities are better than ever, and most of our citizens have taken the precaution to thoroughly soak their ground while there is an abundance of water. The only drawback is a scarcity of hay, which is selling at from $25 to $30 per ton here now, as there was too much sent to Arizona during last summer.—I. H. LEIHY, Tustin City, Jan. 25th.

MARIN.

FINE PORK.—L. Hechhemier last week butchered a hog, from the thoroughbred band of Mr. J. B. Redmond, which weighed alive 828 lbs., and dressed, 639 lbs.—the largest porker ever raised hereabout, and as fine and beautiful meat as ever graced a shamble.

MENDOCINO.

COAST FARMING.—Mendocino *Beacon*, Jan. 28: In a late issue we referred to the lumber interests as being the predominant interest on this coast. But it offers inducements, also, for the agriculturist seeking a permanent home. There is a fine body of agricultural land, from a quarter to a mile and more in width, skirting the coast line of the Pacific ocean. These lands, though varying somewhat in richness, according to location and nature of soil, are very productive, and well adapted to the growth of small grains, such as oats, barley, rye and wheat. Of the cultivated grasses, timothy yields excellent returns on the wet lands, and rye grass and orchard grass are successfully raised on the dryer lands. But, so far, mesquit has been found to be the most successful grass raised on the coast, as it seems best adapted to the climatic influences, is hardy and aggressive by reason of its spreading and thick turf, stifling the prevailing weeds, affording green pasture during the dry season of the year when most of the natural grasses have become dry, and giving a good return in hay if the stock is kept off in the spring. So far, the cultivation of clover has not proved a success yet on the coast, the climate being too harsh for alfalfa, but eventually some of the hardier clovers, especially esparsette, may prove available in the line of rotation of crops, which is essential to successful farming everywhere. But our soil and climate are pre-eminently adapted to the culture of root crops, such as potatoes, beets, turnips, particularly the Ruta Baga, carrots, parsnips and all of the hardier vegetables. Wherever by the configuration of the surface of the land, protecting trees or timber belts a shelter is afforded against the spring-prevailing northwest wind, apples, pears, quinces, cherries, plums and berries of every kind can be raised, and even the peach and apricot will mature in many localities. Adjoining the level lands on the plateau next to the ocean, and the bottoms at the mouth of the rivers, is more or less open hill land, which affords fine pasturage for cattle or sheep, and goats will eventually become an important factor there, as they find ample browse on the adjoining brush-lands. But while the lands adjacent to the coast, with the exception of a few hundred acres of barren land, have long since been all taken up, and the title thereto been acquired from the government, yet small or large tracts of lands to suit the means and fancy of the new comer can be procured at comparatively reasonable prices, and though the tendency has been rather to the aggregation of the lands in the hands of the few, yet the principle of small farming is already successfully represented on the coast by a number of farms, from 20 to 40 acres in extent, and the farther demand for small available tracts can be readily supplied. Besides the advantages of a healthy, invigorating clime, of palatable and wholesome water, of never-failing seasonable rains for crops, of a productive soil, we have in addition a home market for the farmer, who will try to adapt his productions to the requirements of the men and teams engaged in the lumber business. And by thus making himself independent of the San Francisco market caprices, his toil, if intel-

ligently applied, will be sure to be well remunerated.

MERCED.

RAIN.—*Valley Argus*, Jan. 28: The severe drouth which has prevailed throughout this valley this winter, was broken in upon this week by copious showers which in the aggregate amounted to nearly an inch of water, saturating the thirsty soil four or five inches in depth and changing the despair of farmers to hope of reaping where they have sown. With a few showers more this month we can tide over until March, when the usual spring rains would be sufficient to make us good average crops. The stock men had commenced to lose heavily of their flocks and herds, but they, too, are relieved for the present, and will have more time to hunt spring and summer pasture if the country should be doomed to suffer from drouth during the spring months.

SAN BERNARDINO.

PLANTING.—Colton *Semi-Tropic:* Two carloads of nursery stock, apricot, nectarine, peach and pear trees, were received at this depot this week, and numbers of farmers have been in town during the week taking away trees by the wagon load. There seems to be no slacking up on the planting out of fruit orchards, notwithstanding the fact that the season is very backward, and we are threatened with a dry year.

SAN JOAQUIN.

RAIN ITEMS.—Stockton *Independent*, Jan. 25: Peter Baker, who resides near Linden, was in town yesterday. He reports a heavy rain of a few hours duration, and thinks the rainfall fully an inch. He thinks the farmers in his section are assured of fair crops, with the ordinary spring rains. He was at Peters station when the rain began, and thinks, from appearances, that the rainfall there was still greater. In and around that locality a large acreage has been plowed, but not seeded. Mr. Baker is of the opinion that this land will now be planted. From a gentleman who resides eight miles from Farmington, on the plains near J. Jones' ranch, it is learned that the rainfall there of Monday afternoon and evening was very heavy. He says that the rainfall there for a few hours was heavier than he has previously seen it in that locality. He thinks the farmers now have all the rain they need for the present, and with an equal amount of rain in each of the months of February and March, a good harvest will be assured.

SONOMA.

THE SEASON.—Petaluma *Courier*, Jan. 25: The welcome rains of Sunday and Monday nights last, scoring .38 of an inch, came in the nick of time. The continuous cold north winds had dried the ground to a crust on top, and that, together with the severe frosts, had stopped the growth of vegetation, and in a few places killed the grain just sprouted. But now everything is lovely, and farmers' prospects hang higher than any goose that ever lived. We have interviewed several farmers since the last rains, and all say that the crops of old Sonoma are assured beyond a peradventure. G. D. Green, a large farmer on the adobe lands of Vallejo township, says: "The prospects for farmers could not be better." E. Denman, who farms largely near Two Rock, says: "We will have the best crop in this section that we have had since 1864." All agree that there will be fully as much, if not more, grain planted about here than there was two years ago. It is too early yet to speculate about the potato crop, but the probability is that the good prices for spuds ruling recently will stimulate farmers and cause an increase in the acerage over last year. Stock is in a fair condition generally, notwithstanding the long spell of cold weather (for this country), during which many farmers had again to feed them with hay. The outlook here is unusually promising.

STANISLAUS.

RAIN.—Modesto *Herald*, Jan. 26: The long dry spell is broken at last, and after all the discouraging features of the past few weeks, owing to the severe cold weather and blighting north winds, a ray of hope beams from the eyes of our anxious people. The clouds, which have been gathering for some days, opened their windows on Monday last, for the first time in many weeks, and poured forth their liquid treasures upon the parched earth and almost dying blades of grass and grain, resuscitating them and changing the spirits of our people from deep despondency to buoyant hope. While the rainfall at this place was but .40 of an inch, still the clouds indicate more rain, and the young grain, which was just beginning to show the signs of decay, has taken a fresh start, and on summer-fallowed land, unless heavy frosts or unusual north winds intervene, a fair crop may be anticipated.

TULARE.

ARTESIAN WELLS.—J. W. A. W. in *Evening Post:* The flowing wells lately bored near Tulare City, and others that parties are now boring, will afford material aid in the matter of irrigation this dry year. Your correspondent visited these fine artesian wells lately. To date there are but two already flowing, both on the Page and Morton ranches. The one two miles west of Tulare is 295 ft. deep. The flow is not very large, but is perhaps as much as 100,000 gallons in 24 hours. The water is very pure, leaving no sediment and causing no stain on wood exposed to it. Its temperature is 70° Fahr. Its flow is perhaps sufficient to irrigate several acres of vines and trees, and perhaps from 5 to 10 acres of alfalfa. Its owners propose to sink it deeper with a view to increasing the flow. The larger well, called the "Enterprise," is four miles southeast of Tulare, and about eight miles northeast of Tulare lake. Its depth is 330 ft., the temperature of its waters 70°, and in every other regard it is like the first named, except that the flow is larger. It has been estimated that its flow is over 700,000 gallons in 24 hours. This estimate having been made by the very indefinite mode of calculating miners' inches, we must seriously question its correctness. The size of the stream and other facts indicate that its flow hardly exceeds half that amount. Yet it is undoubtedly of great value, and can probably keep from 20 to 40 acres of vines, trees and alfalfa sufficiently irrigated to make them thrive, in even so dry a year as this. A great trouble is to confine this water sufficiently to the surface to irrigate with it. The depth to hard-pan there is considerable, the soil is exceedingly thirsty, and it drinks up an immense amount of water. Two large reservoirs have been constructed of earth to collect the water from this large well, one 100 ft. in diameter, the other 200 ft. The latter is formed of a circular levee 15 ft. wide at base, and 5½ ft. high. Its surface is about three-quarters of an acre. An interesting fact showing how thoroughly land is saturated by such a steady flow as this well yields, was told me by Mr. Morton. Before the flow began a few weeks ago, it was 16 ft. to water in a surface well 100 yards or more distant from the artesian; but now the water in the old well is only four feet from the surface. On the Castle brothers' ranch, two miles farther southeast, W. G. Spence, who succeeded in getting these new flowing wells, is boring another, and is now down about 250 ft., and northwest of this four miles, on the place of M. Premo, about midway between Packwood creek and Cross creek, Messrs. Littlepage and Wiggins are boring another. Saturday night last they were down 377 ft. and have passed through a thick stratum of blue, but there is as yet no flow. Others of these wells will be bored now as rapidly as can be done, and there is no doubt this unceasing source of water which has transformed into oases numerous spots on the desert of Sahara, will soon aid in fertilizing many dry parts of Tulare county.

Meeting of the State Viticultural Commission.

Answering to the call of the President, the Board of State Viticultural Commissioners held a meeting at their office, 111 Leidesdorf street, on Jan. 27th, President Haraszthy presiding. Present, Messrs. Chas. Krug, I. DeTurk, R. B. Blowers, Geo. West, Chas. A. Wetmore, Matthew Cooke and the Secretary, J. H. Wheeler. The minutes of the preceding meeting were read and approved. The president stated that pursuant to instructions from the Commission he had, since the last meeting of the board, communicated with Congressmen Page and Berry, and ex-Senator Sargent, who had kindly signified their willingness to enlist their efforts in behalf of California viticulture. A committee of three—Messrs. Blowers, DeTurk and West—was appointed to tender the thanks of the Commission to these gentlemen.

The resolution proposed at the last meeting of the Horticultural Commission concerning quarantine was read, and the following resolution was offered by Commissioner Blowers and was adopted.

Resolved: That the Chief Executive Horticulutral Officer is and shall be authorized to prepare a classification of the different horticultural sections of the State, with special reference to the degree of health or disease therein prevailing among fruit trees; such classification to serve as a basis for the general and legal application of quarantine rules, varying in effect according to the classes of such sections to be affected thereby; and that he be requested to prepare the same carefully and with due regard to the interests of all parties engaged in horticulture, taking sufficient time to acquire the necessary information for this purpose.

A second communication was read from the Horticultural Commission, requesting the immediate publication of the reports of the several Horticultural Commissioners as already accepted.

Mr. West offered a resolution which was carried, to the effect that Mr. Cooke be requested to collate the reports and prepare and publish them as soon as possible.

Mr. Wetmore presented his report as Chief Executive Officer (which may be had by those interested in viticulture by applying to the commissioner of the different districts, or by addressing the Secretary of the Board, at 111 Leidesdorff street, and sending stamps—7 cts.).

This report is made up of the following contents:

First annual report of the Chief Executive Viticultural Officer, with illustrations.

Appendix A.—Translation of the Practical Manual of Viticulture for the Re-constitution of Southern French Vineyards, by Prof. Gustave Foex, of the National School of Agriculture, Montpellier, France. Illustrated.

Appendix B.—Studies of certain species of wild vines of North America; translated from the French of Prof. M. A. Millardet, Professor of the Faculty of Sciences of Bordeaux. Illustrated.

Appendix C.—Bisulphide of Carbon and Sulphocarbonates, by J. H. Wheeler, Secretary of the Board of State Viticultural Commissioners. Illustrated.

Appendix D.—Second annual report of the Committee on Phylloxera, vine pests and diseases of the vine.

Mr. Wetmore further reported on having appointed a large number of inspectors who were now laboring assiduously throughout the State. In this connection, Mr. Krug suggested that the Chief Health Officer inform each Commissioner of the Inspectors appointed in his district. Agreed to.

It was stated by the Chief Executive Officer that a case had been encountered since the enactment of quarantine laws for the disinfection of imported cuttings, in which the law, if enforced, would prove a hardship without a resulting benefit, inasmuch as the receiving of infected cuttings into a vineyard already infested could do no damage; but, according to law, it was necessary to disinfect at the point of consignment. Mr. Blowers therefore offered a resolution which was adopted, that the Chief Executive Viticultural Officer be allowed to use his discretion in changing the place for disinfection whenever a hardship would result, without good, and whenever there is no danger.

On call for reports, the following Commissioners presented their reports for 1881: Messrs. Haraszthy, Blowers, De Turk, Cooke and Wetmore, which were referred to the Chief Executive Officer for publication.

Resignation of Mr. Wetmore.

At this point Mr. Charles A. Wetmore offered his resignation, as follows:

Arpad Haraszthy, Esq., President Board of State Viticultural Commissioners—DEAR SIR:—When I was honored by this Commission by being selected to serve as its Chief Executive Officer, I accepted the same with the distinct understanding that my resignation should be accepted whenever it might appear that any considerable number of the vine growers of the State were dissatisfied with my administration of the office with which I was entrusted. I do not presume to believe that it is possible for any one to fill a public office without encountering some antagonisms, or without making some mistakes. Nevertheless, I voluntarily made the promise that I would resign my position whenever I found that I could not give entire satisfaction to all reasonable persons interested in the welfare of our viticultural industries, and in good faith I now respectfully tender my resignation as Chief Executive Viticultural and Health Officer, giving as my reasons therefor, as follows:

First.—The compensation allowed by law is insufficient to enable me to support myself and family, and to meet the incidental expenses that necessarily are incurred, unless I continue in private business also.

Second.—To economize my time, labor and resources, and to avoid being diverted from the subjects involved in my official duties, I have confined myself to business in connection with the development of our viticultural industries. This has given occasion and opportunity for some very worthy gentlemen that I know—how many others I do not know—to criticise the propriety of such occupations. Because I am the Executive Officer of this Commission, your member of the Los Angeles district considers that I have no right to engage in the business of importing grape cuttings, or of distributing and supplying those produced within the State. No formal complaint has been made, and therefore I have had no opportunity to reply; but his objections have been stated so frequently to many different persons that I feel compelled to notice them. I have nothing to say in reference to his own occupations, while acting as a member of this commission, because I have no reason to object to them. It is sufficient for me to know that he is not satisfied with what I am doing.

Third.—I am informed that certain vine growers in the St. Helena district are offended because I have purchased a large number of the most valuable cuttings of grape vines in that vicinity to be supplied to such of my clients as desired to plant them elsewhere, thereby, as they think, materially injuring the St. Helena district. I will not explain how I have selected choice varieties of vines which have heretofore not been appreciated as they deserve; how I have purchased them by the usual and ordinary methods and paid for them. It is sufficient for me to know that some in that section are not pleased with my efforts to improve the character of the new vineyards of the State. How serious the opposition may be, I do not know.

Fourth.—In Los Angeles county I learn that statements have been set afloat that I am hostile to and injuring the interests of its people. In what manner I am supposed to have injured them I do not know. It is sufficient for me to know that for some reason there is some dissatisfaction there.

Fifth.—To continue in this office, which is certainly an unprofitable one, so far as my private interests are concerned, without feeling that I have full support and cordial sympathy of all reasonable people who are interested in the work I have to perform, is what I can never consent to do.

Therefore, I respectfully tender my resignation, requesting your acceptance of the same at as early a date as may suit the interests of the Commission agreeing to perform the duties of my office during such a reasonable period of time as you and the members of the Commission may require for the selection of a suitable successor.

Thanking you for the honor of the trust imposed in me, and assuring the members of the Commission of my hearty good will and intention to continue to serve the State to the best of my ability so long as I remain in this Commission as simple Commissioner for the State at large, I remain, with great respect,

CHAS. A. WETMORE,
Chief Executive Viticultural Officer.

Mr. Wetmore had been excused during the reading of the above. At its close there came a general manifestation of surprise, and marked regret on the part of the Commissioners present. Each Commissioner present took occasion to express himself in vindication of the Chief Executive Officer. To Mr. Wetmore was accredited mainly the marked advance of viticulture in California—each one felt in honor bound to sustain him in every act done up to the present. The sentiment of the Commission was expressed in the following resolution, unanimously passed:

It is moved (by Mr. De Turk) and seconded (by Mr. Krug) that Mr. Wetmore's resignation as Chief Viticultural Officer be not accepted by this board; that his services to the viticultural interests of the State have been so eminent, so disinterested and so extensive that he cannot be spared; that, in the opinion of the members present at this meeting, he has done more to further this industry than any other man in California and that they only regret that anyone of intelligence and standing in the community should object to any work, which could only advance their own interests. That it ignores entirely any cause of complaint and wishes, hereby, to endorse Mr. Wetmore's entire action, his devotion to the common cause, and expresses its complete satisfaction at all his official actions.

On the return of Mr. Wetmore to the meeting, he thanked the members present for their very kind expression in his behalf, but positively objected to their refusing to accept his resignation. "Gentlemen, I insist upon this office becoming, from the present, open to other aspirants. I am in earnest in saying that this chair must be free; I will continue to serve, without salary, until such time as my successor may be chosen." After repeated expressions of regret from the Commissioners, Mr. Wetmore was, at the solicitation of all present, induced to continue in his office until such time as they should be enabled to further consider his action and deliberate on same.

The Commission adjourned to the call of the President.

News in Brief.

PNEUMONIA is very prevalent in Tombstone, Arizona.

LIEUT. MELVILLE will form five separate parties to search for Com. DeLong.

PIETRO MALDINI, a Swiss, was killed on Saturday at Santa Cruz by a large limb of a tree falling on him.

A MINING man named Adams, from San Francisco, died of hemorrhage of the lungs last Friday at Tombstone.

THERE is every indication of an enormous travel to Europe next summer, and nearly all the steamship lines are increasing their fleets.

IMMENSE amounts of property have been destroyed and much suffering caused by the great floods in the Cumberland and Tennessee rivers.

DAN'L B. FOSTER, a well-known river man, formerly purser on the Sacramento river boats, died at Portland, Or., recently, of acute rheumatism, aged 58.

CHICAGO is happy over the removal to that city of more than one large manufacturer of Cincinnati, who complains that he is overtaxed in "the Paris of America."

THE Joint Committee on the Death and Memorial Services of the late President Garfield, decided upon a programme substantially the same as that adopted for President Lincoln.

THE bill prepared by the Judiciary Committee of the Senate, for the suppression of polygamy, provides that no polygamist shall sit on juries, exercise the right of suffrage, or hold office.

THE jury in the Sproul murder case, at Oroville, returned a verdict of not guilty, after an absence of 30 minutes, on Saturday. The verdict was enthusiastically received by the crowded courtroom.

A BILL has been introduced to extend the operations of the Lighthouse Board over the Willamette and Columbia rivers, from Portland to the sea, and appropriates $3,000 for the erection and maintenance of lights along these rivers.

THE weather east of the Cascade mountains is severely cold, and the river above The Dalles is full of running ice. Boats have been sheathed, but the managers of the O. R. & N. Co. do not hope to be able to force the steamers through.

REVIEWING its various articles on the anti-Mormon boom, the New York *Tribune* says: There is a fair prospect that some action will be taken by the present Congress by which the Mormon evil may be effectively reached at last.

THE coinage executed at the United States Mint during January aggregated 7,734,360 pieces, valued at $6,276,000. Of this amount there were 285,600 eagles, 556,760 half-eagles, 1,000,000 silver dollars, 722,000 five-cent pieces and 5,170,000 cents.

NEW YORK has established an experimental farm station of some 300 acres at Geneva, at a cost of $20,000 in a first appropriation, and a like sum will be asked of the present Legislature for its annual support. This is the first State farm of the kind in the country.

IN the great mining suit of the Contention vs. the Head Center mine, the jury, on the 28th, brought in a verdict fixing a line between the two mines, and giving the Head Center nearly all the valuable ground. The Contention Co. gets 300 ft. of the southern end of Head Center ground.

THE persecution of Jews in Russia continues to awaken the deepest sympathy among all classes in England, and to provoke strong feeling against Russia. Gladstone's refusal to remonstrate with the Russian government is strongly condemned.

THE latest news from Irkutsk states that Engineer Melville has proceeded to the mouth of the river Lena, to resume the search for Lieutenant-Commander De Long with the greatest energy, aided by natives. Provisions are plentiful, so the search can be prolonged. The captain of the steamer *Lena* accompanies Engineer Melville.

THE Amador *Ledger* makes a note of the return to the early system of freighting. It says: "A good deal of freight for Plymouth and Oleta is being hauled direct from Sacramento, the merchants finding it to be cheaper than to have it sent to Ione by rail. It takes two days to make the trip to Ione and back; whereas, the round trip to Sacramento can be made, when the roads are in anything like condition, in about three days. The teamsters prefer to haul clear from Sacramento."

SENATOR GROVER has introduced bills appropriating $500,000 for the improvement of the mouth of the Columbia river, $750,000 for the construction of a canal and locks at the Cascades of the Columbia, and $200,000 for continuing the improvements at the entrance to Yaquina bay, Oregon. These bills, at the request of Senator Grover, were temporarily laid on the table, in order to afford him opportunity to call them up and submit some remarks on them, before their reference to the committee, at an early day.

The Petrified Fern.

In a valley, centuries ago,
Grew a little fern leaf, green and slender,
Veining delicate, and fibers tender;
Waving when the wind crept down so low;
Rushes tall, and moss, and grass grew round it,
Playful sunbeams darted in and found it,
Drops of dew stole in by night, and crowned it,
But no foot of man e'er trod that way;
Earth was young, and keeping holiday.

Monster fishes swam the silent main,
Stately forests waved their giant branches,
Mountains hurled their snowy avalanches,
Mammoth creatures stalked across the plain;
Nature reveled in grand mysteries,
But the little fern was not of these,
Did not number with the hills and trees;
Only grew and waved its wild sweet way,
None came to note it day by day.

Earth, one time, put on a frolic mood,
Heaved the rocks and changed the mighty motion
Of the deep, strong currents of the ocean;
Moved the plain and shook the haughty wood,
Crushed the little fern in soft moist clay,
Covered it, and hid it safe away;
Oh, the long, long centuries since that day!
Oh the agony! oh life's bitter cost,
Since that useless little fern was lost!

Useless? Lost? There came a thoughtful man
Searching Nature's secrets, far and deep;
From a fissure in a rocky steep
He withdrew a stone, o'er which there ran
Fairy pencilings, a quaint design,
Veinings, leafage, fibers clear and fine,
And the fern's life lay in every line!
So, I think, God hides some souls away,
Sweetly to surprise us the last day.

—*Mary L. Boles.*

A Foolish Mistake.

"Lucy, which of us are you going to give up, Mark Beauclere or me? It must be one of us, dear, and the sooner you decide the better."

The speaker—a tall, lithe, brown-haired, brown-skinned young fellow of three-and-twenty, with an honest face and a pair of earnest blue eyes, placed himself very deliberately in Lucy Armstrong's way, as she was strolling under the trees in the shady old garden, with her hat pulled over her eyes and a pocket volume of some poet in her hands. It was a scorching July afternoon and Lucy had quietly slipped away from the half-dozen ladies who were sitting round her Aunt Hester's tea table, discussing all the latest news of the parish.

Mark Beauclere, an æthetic young gentleman of 30, with a very fine voice, rather weak sight, and a large income, was there too, but as he generally was to be found at Miss Hester Armstrong's tea table, he counted almost as one of the ladies; and Lucy was a little tired of them all, and wanted to be alone. She looked as if she were having some very pleasant thoughts as she sauntered under the trees, and seemed in no way prepared for the sudden interruption.

"Why, George, you quite startled me," she said, standing still, for George Leslie had placed himself in her way. "Why didn't you go in and have some tea?"

"Because I wented to talk to you, Lucy. I've been trying to get an opportunity of talking to you for the last week, and I couldn't. I want to know which of us you are going to give up, Mark or me?"

"Seeing that I never possessed either of you, it would be rather premature of me to say," and she glanced up at him from under the shelter of her hat. "Why, George, what's the matter?" she asked, laying her hand lightly upon his arm. "Are you ill—or—angry?"

"No, only heart-sick and sorry, and disappointed," and the young fellow looked quite haggard. "I suppose I ought to congratulate you and then efface myself as speedily as possible; but when a fellow has cared about somebody all his life, as I have cared about you, it's not so easy, Lucy."

"What's not easy, George? I really have not the slightest idea of what you're talking about," Lucy cried, growing very red and confused. "Do tell me exactly what you mean, like a good boy."

George winced and turned aside with rather a savage expression. To be called "a good boy" by Lucy under certain circumstances would be all very well, but in that tolerant, almost patronising tone it was too much.

"Am I not to congratulate you on your engagement to Mr. Beauclere?" he said, grimly.

"Certainly not!" was the very grave reply.

"Then you've refused him, Lucy?" with humiliating eagerness. "I guessed you would."

"Mr. Beauclere has not done me the honor of asking me."

"Oh!" and George's face fell perceptibly. "But you will refuse him, Loo, won't you?" he continued. "He told me he was going to propose this very day," in a savage whisper.

"Then, perhaps he will inform you of my reply in due course," and she looked up with a droll twinkle in her bright hazel eyes. "Now, George, if you're not coming in to have some tea, let me pass, please."

"But you don't care about him, Loo, do you?" he whispered, with a very penitent glance.

"Pardon me, I like Mr. Beauclere very much indeed! Why shouldn't I? And I thought, George, you and he were friends."

George turned away with an exclamation that sounded like "Confound him!" and Lucy returned to the house, serenely smiling under her broad-brimmed hat.

The drawing-room was empty, but in a little snuggery beyond, which her aunt called her own boudoir, there was a muffled hum of voices, and Lucy smiled more comically than ever as she went upstairs to change her dress for dinner. Both George Leslie and Mr. Mark Beauclere were to dine at "The Nest," and Lucy, brimful of mischief, resolved to tease George thoroughly before she put him out of his misery.

So she donned a fresh muslin gown, and fastened a crimson rose in her hair, and then went down and took a seat near the drawing-room window, which commanded the entrance to the front garden, and, with a very demure smile, awaited the course of events.

Presently she was joined by her aunt, looking gravely important and bristling all over with a secret. Miss Hester was a tall, slender, keen-eyed, thin-lipped lady of as near 40 as possible, with smooth, dark hair, regular features, and a stately, not to say commanding presence; she had very beautiful white hands, and she used them a good deal in a majestic way. When dinner was announced, it was by a wave of them she signified to her niece that she meant to proceed at once to the dining-room. Lucy followed her with suppressed amusement beaming from every feature of her face. She guessed pretty accurately what her aunt's secret was, though, till Miss Hester opened the subject, she would not breathe even a hint of it. As the dinner progressed in impressive silence, she found herself wondering why George did not come. Later on, as she sat at the piano, in the twilight, and played over her favorite songs, singing snatches of them, wandering aimlessly from "Auld Lang Syne" to the "Lass of Richmond Hill," and then to "Home, Sweet Home," she little thought who was listening to her on the other side of the lilac tree that shaded the drawing-room window. There, in safe obscurity, George Leslie listened, till he heard the piano closed with just the suspicion of a bang, and saw Lucy's slight, white-robed figure cross the room and approach the open window; then he stole away noiselessly with something between a sob and a sigh. There was even a suspicious and a humiliating moisture in the poor fellow's eyes as he hurried across the fields in the direction of the railway station.

"She's treated me very badly—but for all that I hope she may be happy. Heaven bless her!" he said, as he caught a glimpse of "The Nest" as the train shrieked past. Then he shrank back into his corner and gave himself up to the bitterest reflection. He found it difficult to realise that he was rejected, yet Beauclere had told him distinctly that he had proposed to Miss Armstrong that afternoon and had been accepted. There was no further reason for his staying at Westwater, and he was going to ask his uncle, of the firm of Leslie & Longhampton, to send him on a confidential mission to the extreme end of the earth, where they were supposed to do business. George could not be philosophical enough to look at happiness "through another man's eyes," so he determined to get completely out of the way of Mr. Mark Beauclere; and he could not even summon up courage to congratulate Lucy, or say good-bye, but he wrote her a nice little letter, in which a good deal of real feeling was hidden under some stiff formal phrases, and through it all peeped a very sore, bruised, affronted, but still faithful love.

Lucy laughed at it at first and then cried over it, then wiped her eyes and wrote an explanatory and affectionate reply; but, alas! George was gone on the confidential mission. His letter said that he was on the eve of starting for China and bore the Southampton post-mark. He said he might be absent for years, or forever. To poor Lucy, in the first dismay of her discovery that George was really gone, it seemed the same thing.

CHAPTER II.

"My dear Leslie, this is a surprise and a pleasure! How are you? When did you get back?" and George Leslie found his hand grasped by a portly, comfortable-looking gentleman in gold-rimmed glasses and wideawake hat.

"I—I beg your pardon, I don't—I can't quite recall you, though I seem to remember your voice," George stammered.

The portly gentleman laughed. "Well, you're more changed than I am, I dare say, and yet I knew you in a moment. Is it possible that you've forgotten——"

"Beauclere? Why, of course! how stupid of me!" and George's brown face grew a very curious brick-color as he wrung his old friend's hand. "I've been away five years, Mark, and it tells on all of us."

"I wish it told such a flattering tale on me as it does on you," Mark said, with a smile. "Come and dine with me, old fellow—no excuses—it won't put us out in the least. Mrs. Beauclere is at Brighton with Miss Armstrong, so I'm *en garcon*. We live at Putney—jump in," as a "bus" came up, "and tell me all about your adventures, and when you returned."

"I only landed three days ago, and I haven't had any adventures, except of the most commonplace, practical kind. The business I went out to manage turned out very well. I made some money, and I've come to England to settle down—that's all. How is Mrs. Beauclere?"

"Quite well, thanks. Have you put on the halter yet, George?"

"No. The Celestial Empire is certainly not the place of all others to tempt a man to matrimony."

"Lucky fellow! I wish I had gone there with you."

George was silent—it seemed like treason to echo the wish. It was just like that monster Mark ever to express it. Of course, he made poor Lucy miserable; that was only to be expected. How he ever could have become so supremely dull and commonplace George couldn't imagine. When he entered the drawing-room he couldn't help noticing little evidences of Lucy about—her old-fashioned work-table; a black cat, which he seemed dimly to remember; books, and a drawing or two. His heart beat a little quickly; and on the whole he was glad that he had not to meet her on that first evening. "Does Miss Armstrong always live with you?" he asked presently.

"Yes, of course; where else could she live? Indeed, I don't know in the least how the house would get on without her. You see, my wife and I go in for politics and literature, and that sort of thing; and if we hadn't some one to keep us in order and see to our creature comforts, I'm afraid we'd starve. If ever you do marry, George, don't select a clever woman with a taste for logic and metaphysics," Mark whispered, looking round cautiously. "It's simply awful!"

"I never fancied Mrs. Beauclere would develop a taste for those subjects," George replied; and then he smiled a little sadly as he thought of Lucy as a bluestocking, and Aunt Hester, who had always been his special horror, whisking about the house, upsetting the domestic comfort of everyone, and waving her hands in command or disapproval, unceasingly.

"I never could stand it, I know," he said to himself, as Mark went on giving him some details of the establishment, with a sort of rueful good humor. "A clever wife and an energetic aunt-in-law would be to much for me."

And it had evidently proved too much for poor Mark Beauclere. He was no longer slender, sentimental, and æsthetic; indeed, his chief idea in life seemed to be thorough enjoyment of such pleasures as remained to him. He enjoyed his dinner, for instance, thoroughly, and grew quite confidential over his coffee after.

"It was very sudden, your going away, George," he remarked, after a long chat over the old times at Westwater, and the pleasant evenings they used to have at "The Nest." "Do you know, I thought once that you had rather a fancy for Lucy."

George grew brick-red again, and bent his eyes resolutely on the table.

"It would have been a capital thing for you; and I believe she liked you, for she seemed altogether out of sorts when she got your letter. In fact, George, you might have done much worse than have married Lucy Armstrong."

Still silence and steady contemplation of his glass, on the part of George.

"And for that matter, you might do worse than marry her still."

George looked up with a sudden angry dash, then he grew quite white. Mark was not chaffing in the least, he felt that; still he could not take it all in at once.

"I believe it's entirely on your account she has remained single, Mark continued, with good-natured garrulity "in spite of all her aunt's efforts to get her well married."

"Did you say Mrs. Beauclere was staying at Brighton?" George presently asked, in a very meek voice; "because I thought of running down there for a few days. Will you come, Mark?"

"No, thank you," with a droll shrug. "My wife and Lucy are staying at the Royal; give them my love, and tell them they need not hurry back, as I'm all right."

* * * * * * * *

"Lucy, dearest, can you forgive me? It was all a dreadful mistake from first to last! I thought it was you Mark wanted to marry; and when he told me that evening that he had proposed and been accepted, I was frantic. Aunt Hester never once entered my head."

Lucy's reply was a little unintelligible, but after a time they managed to understand each other. Miss Armstrong could not long resist a lover who had been faithful to her for five years, even when he believed her lost to him forever; and George resolved to marry her out of hand, so that there should be no more misunderstandings. Sometimes Mark Beauclere chaffs them both a little about George's mistake; but he always boldly asserts that the great mistake was Mark's after all.

"I WISH to ask the court," said a facetious barrister, who had been called to testify as an expert, "if I am compelled to come into this case, in which I have no personal interest, and give a legal opinion for nothing?" "Yes, yes, certainly," replied the mild-mannered judge; "give it for what it is worth."

A GERMANTOWN man, who owned the house next to him, refused to rent it to a young couple, because they had children. He has since rented it to four old maids, who, for the sake of companionship, have bought a peacock, a pair of guinea fowls, two howling dogs and a parrot.

Give the Children a Chance.

[Written for the RURAL PRESS by KATE DASHWOOD.]

The columns of the RURAL PRESS show that there is unusual mental activity in all parts of the State. New methods are given for cultivating old varieties of fruits and flowers, and great inducements are offered to those who may be so fortunate as to raise valuable new varieties. Rip Van Winkle, who has been sleeping so many years in the mountains, has come down into the valley, and is shaking off his dreams and lethargy in the whirl of busy life. Deer paths and sheep walks are being obliterated forever by the plow of the horticulturist. The future is very bright, and young California will come into a richer inheritance than the pioneers found here in the gold mines. It is safe to say that California will soon be so far ahead of every other State in orchard and vineyard products, that her cultivated lands will be worth two or three hundred per cent. more, acre for acre, than the lands in any other State. As an inevitable result there will be more charming homes and picturesque villages than can be found in any other section of the country containing the same number of people, if we wisely give the children a chance to develop their intellectual powers and their love of the beautiful.

We are too apt to think that a child has no natural gifts in a certain direction because there is no strong manifestation of natural power. But a child should have a chance, under the training of a teacher, to show what it can do, before it is condemned as dull and unqualified for a higher position.

As land does not bear good fruit without culture, so the mind will not produce rich fruit if it be neglected. It is strange that some people will spend thousands of dollars in cleaning brush and stumps from land, while they let their boys and girls grow up in ignorance. There is nothing that will yield a better return than the cultivation of young brains. The sub-soil plow, sub-irrigation and sunshine applied to the intellect, will reveal greater riches than can be found where all the energy is spent upon the land. Artists, inventors, musicians, orators and writers, will come forth if kindly hands will but crack the shells that now confine them in their dungeons. In most cases children are uneducated or half educated because their parents are poor. In States where the soil is barren and the climate is bad, there is some excuse for this. The hardest labor there gains but a bare subsistence, perhaps, and the young must work for bread; but in this State where a double reward is offered to industry, and the educational advantages are so good, there will soon be but little excuse for letting children grow up in ignorance. When I say that a double reward is offered to industry, I mean that any one in fair health who will take up a piece of vacant land, can make it support them and give their children a good education and, in addition, they will secure a competence for old age. Industry is the finger-board that always points to success.

When I urge the importance of giving children a chance, I do not refer entirely to studies taught in schools. Quite often lessons out of the regular course are the ones that do the most good. Take art, for example. Almost any one who has had experience in teaching can cite instances where they have unexpectedly discovered pupils of quite remarkable talents. There is, on this coast, to-day, an artist whose pictures command a high price; his income is probably over $500 a month, though he struggled against the advice of friends when they first tried to get him to devote himself to art. He was then earning $100 a month in another occupation and did not believe that he could ever make his brush pay as much as that. He can sell one picture now for more than he used to earn in an entire year.

There are scores of cases where young ladies have become quite proficient as artists, though they began with little or no expectation of achieving any good results. In not a few cases married women have discovered that they possessed artistic talents of a high order.

No doubt a great many people who now write a poor hand, could, by earnest and continued application, learn to write well; and it would not be far from the truth to add, that the same amount of application would enable the same number of people to reproduce in colors a fair representation of fruits, flowers, birds, animals and other objects.

What is true of art and penmanship is also true of many other things—the ability to put thoughts on paper, for instance. There are hundreds of business men, farmers and mechanics, whose minds are richly stored with experience, and they would gladly contribute their knowledge to the press if they understood the art of writing half as well as those who have little of their experience, and far less mental capacity, but who are able, nevertheless, to do much good with their pens. A man who cannot put his thoughts on paper in this age of printing is half dumb, and a man who cannot or will not read, is more than half blind.

If people wrote as well as they talked, the problem would be solved. Why can't they do so? Men will reel off page after page of good literature, wit and wisdom, capitalized and punctuated to a dot, but if you give them pen and paper they would stumble, blunder and botch up their ideas in a way that would throw Josh Billings entirely into the shade. This need

not be so. Their tongues and hands should be better acquainted with each other. The awkward thumb and fingers should be labored with until they are able to transfer to paper the displays of elastic energy; the richness and vast resources of the tongue to which they belong.

Thermal Belt, Napa Co., Cal.

The Ideal Editor.

[From the address of REV. H. W. FOOTE, Rector of King's Chapel, Boston, at the funeral of the late editor Goddard.]

"Think for a moment what it is which is demanded of him who stands in such a post of duty! Like the pilot, his hand always on the helm, he watches the atmospheric current of opinion and feeling, and the tides of events as they affect the public good. An unresting fidelity holds him constant to the most exacting form of professional duty, with little respite for health and none for pleasure. It is for him to guard against the schemers who seek to gain the public ear, to protect the ignorant and innocent, to lift journalism from the function of a mere gatherer of news, which tends to make the world a vast whispering-gallery in which the monstrous and distorted echoes of countless matters which had best sleep in oblivion reverberate, to that of a wise and just organ of public opinion giving clearness and balance to the general mind, on the one hand, and on the other, speaking the general mind of the weightiest part of the community with a force and character that make it heard and heeded in the councils of the nation. To do such a work at all demands rare gifts of intellect and culture, of courage and tact. To do it worthily, demands how much of truth and of wisdom, bravery to fight a wrong, insight to see the path of practicable duty, gentleness in dealing with opponents, magnanimity in judging motives, the absolute elimination of personal and selfish considerations; above all, a self-abnegation—a merging of self in the truth and duty which is the very spirit of the disciple of Him who is truth itself, who hath said: "He that loseth his life for my sake, shall find it." It is his to see men of less gifts, less training, less experience, less capacity for public service, rise to eminence by his help, while he remains unseen, a power rather than a person, pouring his life into the channels of public service and losing it utterly, to find it again, doubtless, as the Master promised, in the knowledge which must surely come some day, somewhere, that the world is the better thereby.

"No man can stand in such a place without trials of which the outside public know nothing, and which search out every joint in his armor to try if it may be penetrable. Solicitations to aid with influence, where to refuse makes an enemy, political considerations, the temptations of comfort and ease, the wounds given by those who strike without remembering that behind the impersonal form of a great newspaper is a sensitive human heart."

How Tommy Tended the Baby.

Tommy Teale was just six years old. It was his birthday, but instead of having a good time to celebrate such a grand event, he had to take care of the baby. His mother went to do some errands, and left him alone with his little sister. Tommy felt very bad about it. Little Nellie cried a good deal. Tommy did not know what to do with her. He loved her very much, but he did not like to take care of her when she was cross.

As he stood at the window, Ned Brown came out to play on the sidewalk.

"Come out, Tommy!" he shouted.

"I can't," Tommy shouted back; "I've got to tend the baby."

"Shut the door tight and she can't get out," Ned said.

Tommy thought it over; he knew more about babies than Ned Brown did. Nellie might burn herself on the stove, or pull the cover off the table or break the lamp. An idea came into Tommy's head; he ran to the closet for the tacks and hammer. He drove four tacks through her dress and fastened her down to the floor. When this was done, he ran out of doors as fast as his legs would carry him.

In about an hour Tommy's mother came home. He had not shut the door tight because he was in such a hurry. Right on the top step she found the baby; but her little neck and arms were bare; she had no dress on. Her mother carried her into the sitting-room. There was the dress nailed to the floor. The baby had torn it all off trying to get away, and it had to go into the rag-bag.

Tommy came in a few minutes after. He was very much surprised to hear what his mother told him.

"I never did see such a baby!" he said. "I thought you only wanted me to keep her out of mischief, and I guessed the nails would do it sure."

FRIEND of the family to the boy twins: "I'm afraid you little fellows don't always agree. You fight each other sometimes, don't you?" Twins: "Yeth, thir, thumtimth." F. of the F.: "Ah, I thought so. Well, who whips?" Twins: "Mamma whips!"

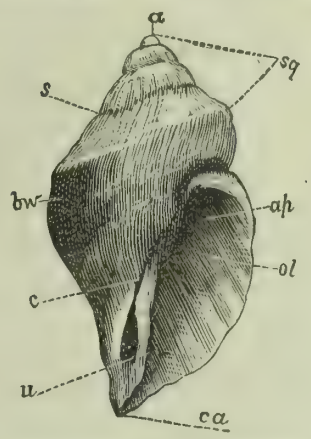
A LITTLE boy of seven had been in the habit of sitting with his three-year-old sister in church. Last Sabbath he refused to sit in his usual place with his little sister. "For," said he "folks might think we were married."

Young Folks' Column.

Science Club.—No. 2.

[All communications for this department should be addressed "RURAL PRESS Science Club," Berkeley, Cal.]

The univalve shell is different from the bivalve in that it consists of only one valve or piece. Holding in our hand some of the common coast shells, as the *Purpura*, with the top or *apex* uppermost, and the mouth or *aperture* facing you, you will then observe many whorls passing obliquely around the central axis or *columella*, especially if a portion of the whorls are decayed sufficiently to show the interior. If this columella is hollowed out for a short distance, it is called *umbilicus*. One side of the aperture is called the *outer lip;* the other, or *inner lip*, is generally attached to the columella or last spiral, called the *body whorl*. The lines or grooves formed by the junction of the whorls are called *sutures*. The *spire* consists of all the whorls above the body whorl. In some carnivorous univalves a *canal* or notch for the respiratory siphon is noticed; round-mouthed shells are generally vegetable feeders. Shells having the aperture to the right are termed *dextral;* when the spiral is turned to the left they are termed *sinistral*.



Anterior View of a Univalve.

Illustration: *a*, apex; *sq*, spire; *ap*, aperture; *o*, *l*, outer lip; *ca*, canal; *u*, umbilicus; *c*, columella; *b*, *w*, body whorl; *s*, suture.

Dr. Thomas, Superintendent of Schools for Mendocino, has sent us a box of representative rocks and minerals from his county. He is a good mineralogist, and he says that he found near Vacaville a specimen of carnelian, which, for richness of color and magnitude, is surpassed by few that have ever been found. Pupils of his county should refer to him when they wish to furnish cabinets for their schools.

F. S. Wallace, Superintendent of Schools for Kern county, is a diligent student of natural history. The specific *Wallacensis* will have to be attached, if he continues to furnish more of those fossils that cause us to search through the entire "Geological Survey" and "R. R. Reports" for duplicates. Those concretions of sandstone are quite unique; the shell concretions are composed of nassa, lunatia and denticulata of the tertiary period. We would advise him to search for the rest of the vertebræ of that whale 2,000 ft. above the Kern river. The geology of his county is well worth exploring, that produces such fine specimens as *Pecten San Pabloensis*, *P. Veatchii*, and large fossil ostrea.

Carl Purdy, a botanist of Ukiah, writes: "The season for flowers will open here again soon. Ranunculus is out by New Year's, and the beautiful little *Dodecatheon Meadia* is no laggard. The erigonums still linger, and the oaks afford the botanist a little employment for the time." Amateur botanists of his section should avail themselves of his services in naming the specimens for their herbariums.

We will send, on application, to our young readers, the names of several species of northern coast flora, which would be a highly prized addition by Eastern collectors.

Miss Ida Milner, Newcastle, Jefferson county, Ala., wishes to exchange fine ores and fossils for coral and handsome Pacific coast shells. We received from her yesterday a box of calamites and rare fossil nuts, etc.; but that which delighted us most was two fern impressions. The "Lemmon herbarium," of Oakland, with all its wealth of Arizona and tropical "tender points", cannot produce anything as beautiful as these delicate impressions of the carboniferous age of thousands of years ago. We have asked the editor to print in another corner a story of this fern. [It may be found in another column.—EDS. PRESS.]

M. J. Parke, Olena, Ohio, wishes "sea dollars" and echinoderms from this State for Eastern shells and minerals. He is one of the best Eastern collectors.

The "RURAL PRESS Science Club" would like to exchange Josiah Keep's book on "Common Sea-Shells of California" for plants and minerals of this coast.

TOMMY don't like fat meat. One day, the steak was very fat. "Tommy," asked the professor, "will you have some beefsteak?" "Yes, sir; but I don't want any that has pork all round it."

Good Health.

Digestability of Bread.

The readiness of assimilation in digesting bread depends on its greater or lesser porosity, which is also dependent on the nature of the bread stuffs employed and the treatment of the dough. The less gluten the flour contains, the more compact will be the baked loaf, and the more gluten it has the more porous it will become. The cereal flour containing the most gluten is wheat flour; rye flour has less. The starchy component of the kernels of cereals are principally all nutritious matter, being no chemical combination with nitrogen. The starchy matter is changed during the process of baking into starch-paste, and is thereby made more easily digestible. The crust is still easier to digest, as it is the starch-paste converted into dextrine and sugar. It is, perhaps, advisable to have a little bran in the dough, or to have the kernels ground coarsely, producing Graham flour, for the branny particles, intermixed with the nutritious matter, mechanically irritates the inside lining of the stomach, inciting the peptine glands to discharge more of their digestive fluid.

As the nerves of the stomach lining of older persons are rather weakened, this mechanical irritation is decidedly to be preferred to the imitation induced by stimulant drinks or aromatic, spicy substances, which only produce a momentary increase of the discharge of the peptine fluid, while the branny particles of Graham bread act continuously and energetically. Bread must always be well salted, as it contains considerable quantities of alkali salts which would withdraw a great portion of salt from the system by making chemical combinations therewith.

Next to porosity of bread, its contents of water influence its digestability. Dry, old bread is easier to digest, as it must be chewed more than fresh bread; hence it will be better masticated, and the stomach will have less work. It is supposed to be known that mastication is part of digestion, saliva being as well an assimilator as the fluid of the peptine glands of the stomach.

There is but little fat in the bread baked of cereal flour. Wheat contains 1.2% rye, 1.6% of fatty substance. Corn contains very much of it, 4.6%, this being the reason why corn bread is so recommendable for hard-working men.

For men of sedentary habits, corn bread would be hard to digest; wheat bread is better adapted to their requirements. The human body needs the daily supply of fatty substance which can be easily assimilated; thus, the mixing of the dough with milk is very good, the digestion of such bread being rapid and easy.—*United States Miller.*

Pasteur's Discoveries.

The researches of Pasteur among the lower forms of life, especially those associated with certain malignant diseases, have given results which are, perhaps, more pregnant of benefits to come to humanity than any other work of the century.

That scientist, having discovered that an infant's saliva contains septic germs and is poisonous when inoculated into the skin, is now reported to have made a similar discovery in regard to the saliva of *fasting* adults. It is only when fasting that the parasites are found in the saliva. They are swallowed with the food and do no harm in the stomach. If, by cultivating the specific virus of our more malignant diseases, the morbific elements may be deprived of their malignant character and yet remain capable, when inoculated, of making the organism as proof against the true disease, as a real attack of it would, preventive medicine has entered upon a stage of infinite importance to mankind. So far, the tests seem to justify the most hopeful anticipations.

Still, says a cotemporary, that eminent microscopist will scarcely receive the thanks of the community for telling us that our mouth is full of venom before dinner. Can he not turn his explorations in some other direction? We are beginning to shudder at the sight of his name, lest he may reveal some still greater horror.

THE SALICYLIC TREATMENT OF RHEUMATISM. Dr. Maclagan, of England, who introduced the salicylic treatment of rheumatism, has recently published a work defending the treatment and insisting on its advantages over every other method. Of the 30 salicylic compounds, but two besides salicine itself are employed—salicylic acid and salicylate of soda. After an ample trial carried through several years of practice, he concludes, that in rheumatism, 30 grains of salicine should be given every hour, until pain abates, and then every two hours during the day for a few days, and afterwards gradually withdrawn. He insists on the large doses as necessary to develop the full benefits of the medicine. Much complaint has been made in various quarters of the failure of the salicylic treatment, and it is quite probable that this has resulted from insufficient doses. We ourselves have generally been content with 15 or 20-grain doses every two hours in the form of salylate of soda, from which good results follow in the large proportion of cases.—*Pacific Med. and Surg. Journal.*

Domestic Economy.

How Cheaply One Can Live.

Bread, after all, is the cheapest diet one can live on, and also the best. A story is told that shows just how cheap a man can live, when he gets "down to mush," figuratively and literally speaking. Colonel Fitzgibbon was many years colonial agent at London for the Canadian government, and was wholly dependent upon remittances from Canada for his support. On one occasion these remittances failed to arrive, and as there was no cable in those days, he was compelled to write to his Canadian friends to know the reason of the delay. Meanwhile he had just one sovereign to live upon. He found that he could live upon sixpence per day, or about 12½ cents of our money—four pennyworths of bread, one pennyworth of milk, and one pennyworth of sugar. He made pudding of some of the bread and sugar, which served for breakfast, dinner and supper, the milk being reserved for the last meal. When his remittances arrived, about a month afterward, he had five shillings remaining of his sovereign, and he liked his frugal diet so well that he kept it up for over two years, possibly longer. Twelve cents a day is certainly a small amount to expend for food; but a man in Minnesota, about three years ago, worried through a whole year on $10. He lived on "Johnny cake."

We know of a theological student in an Ohio college who, sustained by grace, rice and corn bread, lived 13 weeks on $7; but there were several good apple orchards near the college, and the farmers kept no dogs. It is not the necessities of life that cost much, but the luxuries; and it is with the major part of mankind as it was with the Frenchman who said that if he had the luxuries of life, he could dispense with the necessities. Mere living is cheap, but as the hymnologist says, "It is not all of life to live."—*American Miller.*

VARIETY CAKE.—One cup of butter, three cups of sugar, five eggs, one cup of sweet milk, four cups of flour, one teaspoonful of soda, two of cream of tartar, flavored with lemon. This makes the white part, and the following mixture for the dark part gives the name to the cake—(to be put into one-half of the mixture above given): One cup of raisins, two tablespoonfuls of molasses and spice to taste. This will make three good-sized cakes. Butter the cake pans, put in first the dark, and the light on top, and bake in a quick oven. It is better for children than the richer spiced cake, and pleases them just as well.

TO WASH DELICATE MUSLINS.—Put three pints of wheat bran and a handful of salt into a loose bag, and boil half an hour in six quarts of soft water. Use this water for washing muslins or lawns with delicate colors, keeping at hand the bag of bran to use instead of soap on any soiled spot that will not yield to slight hand-rubbing. Rinse the muslin in clear water and dry quickly in the shade. Many colors in calico goods, which are injured by using the most delicate soap, can be safely washed if wheat bran (or, if more convenient, wheat flour) is boiled and used instead.

ALMOND CAKE.—Take half a pound of butter, one pound of sugar, one pound of flour, one cup of sweet milk, six eggs, two teaspoonfuls of baking powder (when so many eggs are used do not heap the baking powder in the spoons), one cup of blanched and chopped almonds, one cup of seedless raisins (also chopped), one cup of citron cut in small pieces; stir the almonds, raisins and citron in with the flour. This is a very rich cake, but it has the merit of keeping well.

CHESS PIE.—Beat one-half cup butter to a cream; then add the yelks, well beaten, of three eggs, two-thirds cup of sugar and a little flavoring. Bake in a rich open crust. Beat the whites, add three tablespoonfuls of sugar, flavor to taste, spread on the top and slightly brown. Serve hot.

POP-CORN BALLS.—Moisten a cup of sugar with three tablespoons of water, and one of vinegar, add a tablespoon of butter and boil until it hardens in cold water. Make the pop-corn into balls with it, using only enough candy to stick the corn together.

HASTY PUDDING.—Let sweet milk boil, then stir in flour until the same thickness as mush. Boil until the flour is cooked; add a little salt. Serve very hot with sweetened cream with nutmeg flavoring, or with syrup. A cheap pudding and a favorite with the children.

INDIAN PUDDING.—Boil one quart sweet milk and stir into it one teacup corn meal, and when cool add one ounce butter, four beaten eggs, one-quarter pound sugar, one-half pound raisins. Bake one and one-half hours and serve with sauce. The raisins may be omitted.

CRUMB PIE.—Soak in a little warm water one teacupful bread crumbs, then add three tablespoonfuls sugar, one-half tablespoonful butter, one-half cup cold water, a little vinegar and nutmeg to taste. Bake between crusts.

MILK BISCUIT.—One quart of milk, pound of butter, enough flour to thicken it, and a small teacupful of yeast; set them to rise early in the morning.

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TABLE OF CONTENTS.

EDITORIALS.—False Butter; A Vista; The Glucose Greed, 73. The Week; The Australians and the Wool Interest; State Horticultural Society, 80. Silk Culture in California; Immigration Association of California; A Flume on the Face of a Cliff, 81. Rainfall and Temperature in California; This Year's Rain, 85.
ILLUSTRATIONS.—At the Edge of the Woodland, 72. Bracket Flume of Miocene Mining Company's Ditch, Butte Co., Cal., 81.
CORRESPONDENCE.—What Shall we do with the Birds? Tuolumne County Notes; Vines with Long Canes, 74. Arizona, 86.
HORTICULTURE.—Orchard Notes; The Other Side Again, 74-75.
FORESTRY.—Four Rare Trees of Arizona, 74.
PATRONS OF HUSBANDRY.—Grange Notes; Co-operation Sentiments; Grange Elections; Sacramento Business Association, 76.
AGRICULTURAL NOTES, from the various Counties of California, 76-77.
NEWS IN BRIEF on page 77 and other pages.
HOME CIRCLE.—The Petrified Fern (poetry); A Foolish Mistake; Give the Children a Chance, 78. The Ideal Editor; How Tommy Tended the Baby, 79.
YOUNG FOLKS' COLUMN.—Science Club, 79.
GOOD HEALTH.—Digestability of Bread; Pasteur's Discoveries; The Salicylic Treatment of Rheumatism, 79
DOMESTIC ECONOMY. How Cheaply One Can Live; Variety Cake; To Wash Delicate Muslins; Almond Cake; Chess Pie; Pop-Corn Balls; Hasty Pudding; Indian Pudding; Crumb Pie; Milk Biscuits, 79.
ARBORICULTURE.—The Growth of the Eucalyptus, 82
THE STABLE.—Horse Breeding in California, 82-3
THE VINEYARD.—Grape Growing in California; Black-Knot on Grape Vines; Results of Vine Fertilization, 93.
MISCELLANEOUS. — Artificial Cultivation of Sponges; Solvent Action of Canned Food on Tin; Clover Insects, 86.
THE FIELD.—Wheat Lands of the Sacramento and San Joaquin Valleys, 89.

Business Announcements.

"Abel Stearns Ranchos"—E. F. Northam, S.F.
Seeds, Thomas A. Cox & Co., San Francisco.
Seeds and Plants, Peter Henderson & Co., N. Y.
Annual Statement, Fireman's Fund Insurance Co., S. F.
Agricultural Implements, A. S. Babcock & Co., San Jose.
Horse-Power Rotary Pump, R. M. Beebee, Gridley, Cal.

The Week.

The showers have continued at intervals, and during the week, if our information is correct, all parts of the State have received a moistening to a greater or less degree. As yet, however, the dose has been by spoonfuls where it should have been administered by bucketfuls, and although the outlook is improved, it might still be much better. Enough has fallen upon the pastures of the South to give the sheep owners courage, and the sheep buyers who have come from Texas, New Mexico and Colorado to gather flocks of sheep at famine prices, have found a greater valuation than they expected. The feed, we hear, has started rapidly on the southern fields, and if the rain should be enough, it will take but a few days to cover the landscape with a carpet of verdure. One of the curious features of affairs is the excess of forage and the scarcity of cattle in Nevada and the reversed condition at the South. In Nevada, hay is quoted at $4 per ton, and no sale, while at the South, before the rain, hay was $30 per ton, and there was talk of carrying it down by rail from San Francisco.

The Australians and the Wool Interest.

The Australians are laboring with much zeal to advance their wool interest in different ways. They are continually endeavoring to improve its quality and at the same time are doing their best to break down the tariff barrier against Australian wool in the United States. These are both commendable endeavors, judged from an Australian point of view. The vast pasturage of that island continent gives unequaled advantages for the cheap production of wool, and if they can only secure free access to our great wool market, their fortunes are made. They are just now making special inquiry concerning the entrance of their wool to this country.

There arrived in San Francisco last week, Sir Henry Parkes, K. C. M. G., Premier and Colonial Secretary for New South Wales. He may be said to be the most prominent man that the Australian colonies have produced, having commenced life in New South Wales as a mechanic, and from that risen to his present high position. The immediate object of his visit to this country, as stated by himself, is for the benefit of his health. The Australian people, desiring to profit by his journey to the United States, requested him to bring the matter of the tariff imposed on Australian wool to the notice of American statesmen, with a view to obtaining a repeal of the duty. The duties of his mission are clearly set forth in the commission issued under the great seal of the province of South Australia, by the Governor of that colony:

"To discuss the terms on which an agreement or an arrangement with the Government of the said United States can be arrived at for the purpose of procuring either the absolute repeal, or a modification of the import duties now imposed by the U. S. Government upon Australian wool imported into the said United States."

Sir Henry Parkes has, apparently, some hopes of succeeding in this, basing them on the fact that New South Wales makes distinction in American manufactures, all of which enter duty free, and he asks why the United States should discriminate between the grades of their wool. New South Wales is especially interested in this question, as it produces more wool than all the rest of the Australian Colonies put together, and at the same time, he states, imports more American manufactures than all the rest of the Colonies. New South Wales, he says, proposes to send the raw material to this country and in return buy it back in the manufactured form. All American products are free from duty with the exception of staple grains, salted and preserved fish, preserved fruits, hops and rough lumber. The number of sheep in the Australasian Colonies, on Dec. 31, 1880, was as follows: New South Wales, 32,399,547; Victoria, 10,355,266; South Australia, 6,463,897; Queensland, 6,935,967; Tasmania, 1,783,611; Western Australia, 1,231,717. Total, 59,170,005. New Zealand, 13,069,388, making a grand total for the Australasian Colonies of 72,239,343.

Such is an outline of the aims and arguments which Sir Henry Parks cherishes and desires to present to the attention of the United States Government. It contains of course a menace to our own wool interest which is now growing so finely under the protection of the tariff, and which would fall to the ground if the tariff were removed, because the cheap pasturage of Australia and other advantages there enables Australian wool growers to produce at much less cost than our flock owners can. It is a poor time now to bring forward a proposition of this kind, as the United States are now reveling in the sunshine of prosperity, supporting her own people and selling to the world, and there is a very strong feeling against the entering of any wedge which may break down the protective system under which the growth has been achieved.

But we have another matter pertaining to Australian wool growing which is of general interest to our sheep breeders. There went out from San Francisco by the last steamer to Sydney a remarkable band of thoroughbred merinos, selected with the greatest care at the East, and to be used for the improvement of the flocks of New South Wales. We have just read an account of this enterprise in the *Breeders' Gazette*, from which it appears that W. G. Markham, of Avon, N. Y. (who, two years ago, was in California on his way to Japan with a shipment of selected sheep), was engaged by certain leading Australian wool growers to select 13 rams and five ewes for them. The *Gazette* says: Over two months were spent in their selection, during which time prominent flocks in no less than eight States have been examined. This wide range for selection was made necessary by reason of the difference in standard sought by American and Australian breeders. In the selection of this shipment the prominent considerations were, evenness of fleece, quality and length of wool, while quantity, though held secondary to other considerations, was by no means ignored, as witness the shearing records of rams from 25 lbs. to 29 lbs., and of ewes from 16 lbs. to 22 lbs. Purchases were made from 10 breeders, and the lot, according to the *Gazette*, may truthfully be said to contain 18 of the best sheep ever brought together in this or any other country. The sheep were shipped from the home of Mr. Markham, on the 23d of December, in an admirably arranged car, with appointments for feeding and watering, without unloading or other detention. This car, arranged for accommodating 20 sheep, ran through to San Francisco without change. The expense, outside of purchase of stock and risk of shipment, will be $2,000.

Thus it appears that the Australians at the same time that they are endeavoring to break down our wool tariff, afford the best possible proof of the good results of that tariff by sending to our breeders and incurring the great expense of taking thither 18 of our best sheep. If it had not been for the decades of protection there would have been no such sheep in this country. All the improvement of the last score of years has been gained by great study, effort and outlay, because there was a profitable wool-growing industry to minister to, and while working for ourselves we have secured a quality of sheep which the world is now seeking. There could hardly be more forcible testimony to the value of protection, so far as the wool industry is concerned.

State Horticultural Society.

The regular monthly meeting of the State Horticultural Society was held yesterday afternoon in the Academy of Sciences. The meeting was called to order by Secretary Wickson, and in the absence of President Hilgard, A. T. Hatch, of Solano county, was elected President pro tem. During the transaction of routine business President Hilgard arrived and assumed the chair as presiding officer. W. H. Turner, of Suisun, and Prof. Geo. Husman, of Napa, were elected members of the association.

The committee appointed to confer with the manager of the Mechanics' Institute relative to a display of fruits at the next fair reported that a conference had been held, but no definite conclusion had been arrived at. It was the prevailing opinion upon the part of the Conference Committee that if a better display of California fruits could not be made than was made two years ago, that no display should be made. The committee decided to report the question back to the association for discussion and expression of opinion.

W. H. Jessup, one of the committee, read the following paper on the

Advantages of Fruit Fairs.

In no country in the world has the fruit industry been so rapidly developed as in California. Nowhere else has the trade reached the gigantic proportions in so short a period of time as it has here in California. The superior excellence of our fruits has attracted the attention of the whole civilized world.

California travelers have been greeted by the pleasant sight of California canned fruits in the islands, Australia, China, Japan, in the mountains of Switzerland and in the Holy Land, and even in the very interior of India. Wherever the traveler has pushed his way, he has found the foot-prints of the enterprising trader. Our canners and merchants seem far more anxious to extend and develop the fruit industry than we ourselves do, sending out their agents every year to make contracts for the sale of our fruits in advance, straining every nerve and taking desperate chances to give our fruits a still wider reputation. And what have we done? What has the producer done to assist in the developing and building up of an industry that ere long is to be the specialty and mainstay of California? Simply to raise our fruit, sell it, and receive its equivalent in money.

It may be asked, what else can we do? I answer, we can do a great deal more. We can organize a system of horticultural fairs, exhibit our best and choicest fruits, and bring them more prominently before the traveling public in its fresh and most attractive form. It is well known that we have in San Francisco an annual fair, held by the Mechanics' Institute, continuing for 30 days, commencing in August, and at its close the State fair at Sacramento opens, and continues for one week—besides district fairs all over the State.

In all of those (especially the two former) are the fruit raisers solicited and urged to make exhibits. We can do much to aid in bringing our fruits into more favorable notice through the medium of those fairs—a thing that we have never yet done. We have never had in this State an exhibition of fruit that would reflect credit on our boasted fruit products. It is true that some of our fruit growers are always to be found at those fairs with a creditable display, but this does not effect the desired object. What is wanted is a general turnout.

It is well known that California at the time of the annual fairs is full of wealthy travelers from all parts of the world, and that they visit those fairs day and night during their continuance by the thousands. A creditable exhibit of our finest fruits, fresh and bright from the orchard, would work wonders in further expanding the already enviable reputation our fruits have.

There is nothing like a first favorable impression. Many of those travelers are to become our customers, and possibly many of them would give their orders for fruits before leaving our shores. So we should spare no pains to create that favorable impression.

An opportunity is now offered us by the Mechanics' Institute to exhibit at their pavilion at their next fair, if a satisfactory arrangement can be made with their committee, and I do hope for the good of our society and for the benefit of the industry, that no objections will be urged, and that all will exhibit and do their best to make the showing a credit to the State, to ourselves, and sustaining to our already acquired reputation. The money thus expended is but a trifle compared to the benefits to be derived through the expansion of the fruit trade. It is but money loaned.

It has been frequently alleged that the conduct of our fairs has been the reverse of satisfactory. That, in a measure, is true. That there has been just cause of complaint cannot be denied, but this can all be corrected by exhibitors, and we should examine closely to see if we are not ourselves in a measure to blame. Could we not, in a great degree, correct those evils by taking a deeper interest in our exhibitions, as they do in older communities, where they make far less profits than we do?

I have for years exhibited as a manufacturer and producer and I have never yet left a fair without a premium, in fair competition with other exhibitors. This, of course, was gratifying, not in receiving the prize, but in having the best article on exhibition. I always try to do everything I do well, and to obtain the best possible results, and hold no feelings toward the successful competitors, feeling satisfied that I, in common with them, will receive the benefits derived through the general improvement.

It is the opinion of a great many that this society should organize a system of horticultural fairs for the advancement of the horticultural interest of the State. As desirable as this may be, it is, at the present time, out of the power of this society to attempt it with any prospect of success, at least until there is a more active interest taken in its welfare by leading and able horticulturists. Until then I think it advisable for this society to accept any fair and liberal offer made by the Mechanics' Institute, providing, always, that that department be under the exclusive control of this society.

Discussion on the Fair Problem.

After Mr. Jessup's paper, a general discussion was had on the subject of horticultural fairs. In answer to an inquiry, as to what proposition had been made by the Mechanics' Institute, Secretary Wickson said that the proposition was somewhat vague in detail. The Mechanics' Institute would pay the premiums and place the fruit exhibit under the control of the Horticultural Society, but they would require a better display than the last one made.

R. J. Trumbull said that a good exhibit of fruit should be made. It was necessary that the best fruit in the State should be exhibited, but an appeal should be made to all the fruit growers in the State. He favored having the fruit fair exclusively under the auspices of the State Horticultural Society. He suggested the propriety of sending an agent all over the State to solicit co-operation, and induce every section to send its best fruit to this proposed exhibition.

A. T. Hatch, of Solano county, Prof. C. H. Dwinelle, J. V. Webster and others, made addresses upon the subject, each expressing the opinion that a first-class horticultural fair could be held if the proper preparations are made and adequate inducements are held out in the way of premiums, and proper rules are framed for the exhibition and competition.

A Committee Appointed.

Prof. Dwinelle moved that a committee of three be appointed to prepare a set of rules to govern fairs held under the auspices of the society. The motion was adopted, and the Chair appointed C. H. Dwinelle, W. H. Jessup and E. Meyer as the committee to draw up a set of rules for the association.

It was moved that the subject of holding a fruit and flower exhibition be referred back to the committee with instructions to decide what amount of money will be required as premiums, and then make the result of their deliberations known to the managers of the Mechanics' Institute, and report the result to the association. It was observed that the committee would not know the sentiments of the society as to the amount required any more than they did at the preceding conference, and it was suggested that the amount be decided upon by the society in open session. The motion to refer back to the old committee was lost.

After discussion, it was moved by Mr. Rixford that it was the opinion of the meeting that the sum of $2,000 would be the least sum of money which should be offered as premiums, and the committee was instructed to notify the Mechanics' Institute managers of the decision.

On motion, the old Committee on Conference was discharged, and the Secretary appointed a Committee on Conference with the Mechanics' Institute managers.

The Secretary remarked that the first thing the Institute would ask would be, what assurance could be given that the exhibit would be better than the one made two years ago? He had no data upon which to answer the question except that the society was older, the interest in horticulture was more acute and general, and other considerations of that kind.

On motion, the roll of those members present was called to see their disposition toward exhibiting. All answered that they would exhibit whatever they might have at the time that they considered worthy of exhibiting. Prof. Hilgard promised a full exhibit of plants, etc., from the University, and Matthew Cooke, Chief Horticultural Officer, agreed to show bugs in great variety.

It was moved that the secretary, as soon as he was furnished with the report of the committee on rules, should send a copy of them to each member of the Society and ask them if they would exhibit, and what they expected to have

(CONTINUED ON PAGE 92.)

Silk Culture in California.

Contrary to general belief, the production of raw silk appears to have become quite extensively and firmly established in various parts of the country—so much so as to bid fair to become, in the near future, an important national industry. From the early settlement of the colonies, this industry has been more or less extensively carried on, and with greater or less success. In the year 1759 the then colony of Georgia exported 10,000 lbs. of raw silk, which sold in the European market at from 50 to 75 cents per lb. higher than any similar product from any other country. In 1771 the culture was commenced in Pennsylvania and New Jersey; and in 1810 the value of raw silk and sewing silk produced in three counties in Connecticut amounted to $28,503.

Most of our readers are aware of the success which has attended the several experimental efforts which have been undertaken in this State, so far as the production of a good quality of silk is concerned. It has been shown that, beyond a doubt, raw silk and silk worm eggs can be produced in California superior in quality to similar products in any other part of the world.

From the time of our last war with England until 1830 and 1837, this industry was allowed to languish; but in 1834 the National and several of the State Governments became once more interested in the subject. Congress appointed commissioners to collect and distribute among the people general information in regard to the culture and manufacture of silk. So far as its cultivation was concerned the matter culminated in what was known at the time as the "Morus multicaules speculation." The cultivators lost sight of the object of establishing a legitimate industry, and attempted to get rich by speculation in trees. Hence this portion of the business soon became involved in ruin, and much injury was at the same time done to the manufacturing industry.

Capital, however, as usual, being more cautious and shrewd than labor, finally succeeded in advancing the latter industry to a legitimate position, from which it has gradually risen, until it is now on a safe and permanent basis. The census of 1880 shows the gross annual value of American manufactured silk goods to be within a small fraction of $41,000,000. These goods are the product of 18,467 looms and 34,440 hands, operating upon a capital of $22,000,000, and involving an annual wages payment of nearly $10,000,000.

The value of silk goods now manufactured in the United States is in excess of our import of that class of goods, and so superior is the quality of much of our silk dress goods, that they are now sold in Paris as genuine French manufacture; and, according to the inexorable logic of facts, much of the superior trimmings, frills and furbelows, with which our wives and daughters now deck themselves, and which are sold in the stores of New York, Philadelphia and San Francisco for genuine French make, must be credited to the skilled workmen of New Jersey and Connecticut.

Singularly enough, one of the most serious hindrances to the progress of silk culture in the United States during the two or three last decades has been the hostility of the silk manufacturers themselves. They are thus opposed, because they fear that if silk culture should attain to any great importance in this country, its friends would become clamorous for a protective duty on the importation of raw silk, and thus reduce the manufacturers' profit by increasing the cost of the raw material. But the friends of silk culture have nevertheless pursued the even tenor of their way, quietly but energetically, until they have now laid the foundation of what promises to be, in the course of a few years, a great national industry, and a feeder and helper instead of a drawback to our already established silk manufacturing industry.

The Ladies at the Front.

It is largely due to an association of patriotic and energetic ladies in Philadelphia that a new impetus has lately been given to this industry in the Atlantic States. This association was given the place of honor at the late textile exhibition at Atlanta, and it most worthily occupied the prominence which was given to it. Cocoons from 24 States, and superior specimens of reeled silk from quite as many sources, were exhibited there. All the various processes of feeding the worms, forming the cocoons, reeling and weaving the silk in the richest and most varied patterns, was shown there. The exhibit attracted most marked and profound attention, not only from our own people, but also from experts from Europe, who saw in that exhibit the evidence that this country would soon not only supply itself with such luxuries, but meet the producers of Europe, as well, in the various markets of the world.

The ladies who comprise that Association have well earned the honors of leadership in the exercise of some of the highest qualities of force and business energy in a direction seldom successfully trodden by any of their sex. They have been frequently and forcibly warned of the magnitude and doubtful return of the enterprise in which they are engaged, and the memorable failure of 1838 has been frequently thrown up to them as a warning. But they have not been frightened from their noble work either by the warnings of doubters or the menaces of the all too real difficulties which have stood in their way.

Purely a Philanthropic Work.

Moreover, their work has not been one of either present or prospective gain. They have been moved to action by purely patriotic and philanthropic motives. Their only purpose and expectation has been to show the way to others to found a new business and create a new circle of industries for the intelligent and would-be industrious, but almost helpless thousands of their own sex who are ready and anxious to work, but to whom no opportunity is presented, except under the hard conditions of abandonment of home and family and friends. These ladies have now demonstrated the fact that thousands of families throughout the middle and southern States of the Union may find really elegant and remunerative employment in feeding worms for cocoons and eggs, and in reeling silk for the home supply of our manufacturers.

What our California Ladies are Doing.

Prompted by this noble example of their sisters of the Quaker City, a few philanthropic and energetic ladies of California have recently banded themselves together under the name of "The California Silk Culture Association," to accomplish substantially the same ends as those held in view by the ladies of Philadelphia. Thus far most marked success has attended their efforts. They have given freely of their money, their labor and their time to accomplish this work, and are still pushing forward the enterprise with a most enthusiastic and persevering zeal. They have shown by honest perseverance of hand and brain, that there are vast possibilities in this direction in store for California. They have shown that California may be made the Eden of silk culture, as well as of horticulture, and that this industry will fully answer the question, What shall we do with our girls and boys? Already this industry has reached encouraging beginnings in some 15 counties of the State, from which favorable reports have been received by the society, with calls for still more seeds, slips and information.

The society now numbers a membership of about 150, and is constantly increasing, each and everyone of which pays in annual dues, from which and by free contributions from numbers of enthusiastic friends, the society derives the means by which it is enabled to carry on its work. The association has now on hand a quantity of eggs, a sample of which it is about to send to Paris as an evidence of what California can do in that direction. These eggs have been carefully examined, microscopically, by Drs. Behr and Harkness, who have pronounced them remarkably free from all appearance of disease. The society hopes by this means to open up a market for California silkworm eggs, which shall turn to this State the millions that are now annually being sent to Japan for this important article of commerce.

The Need of Silk Training Schools.

It is the wish of the society to establish in San Francisco a training school where girls and boys and young women can receive instruction in the rearing of silk worms, the production of eggs and the reeling of silk. It is by such means that the nations of Europe have been enabled to make silk culture one of great national importance. There, as here, it is the noble and patriotic women who have taken the lead in this matter. The name of Elise Semonier is, throughout Europe, a household word, and her noble work and self-sacrificing life has culminated in the establishment of industrial schools of the character needed in this city, which have served as models throughout France, Belgium, Germany, Italy and Switzerland.

In France, silk culture is a part of the common school education of young ladies in all their schools, convents and academies. In our own country, Pennsylvania, Louisiana and Alabama have been carrying on silk schools for several years.

An Appeal for Help.

The noble women of this city who are engaged in this work here call upon our citizens to aid them in establishing such a school for San Francisco, where our idle boys and girls can learn how to make their labor useful and profitable to themselves and to the community. By such means it is believed that thousands who are now suffering for the necessaries of life, or, through pinching poverty, entering upon the downward road to ruin, will take heart again, and enter once more upon a life of industry and general usefulness.

This is an appeal which should be heeded by all who would check the growth of the hoodlum element in this city. It is an appeal which should challenge the Christian charity of our churches, as a means whereby the greatest amount of good can be done in reclaiming from their downward way many of our youth who from mere want of employment are surely drifting into perdition within the very sound of our church bells.

Teach and encourage the children in the country to produce the cocoon, and teach and furnish facilities for the children of the city to reel those cocoons and thus produce the raw silk for our factories, instead of sending to Europe and Japan for it, and you will at one and the same time establish an industry of the highest national importance, and set on foot a plan whereby you may elevate to a high moral plane a large element in this city which is now furnishing two-thirds of those who fill our workhouses, our State prisons, and the debased purlieus which disgrace our city and degrade our young men.

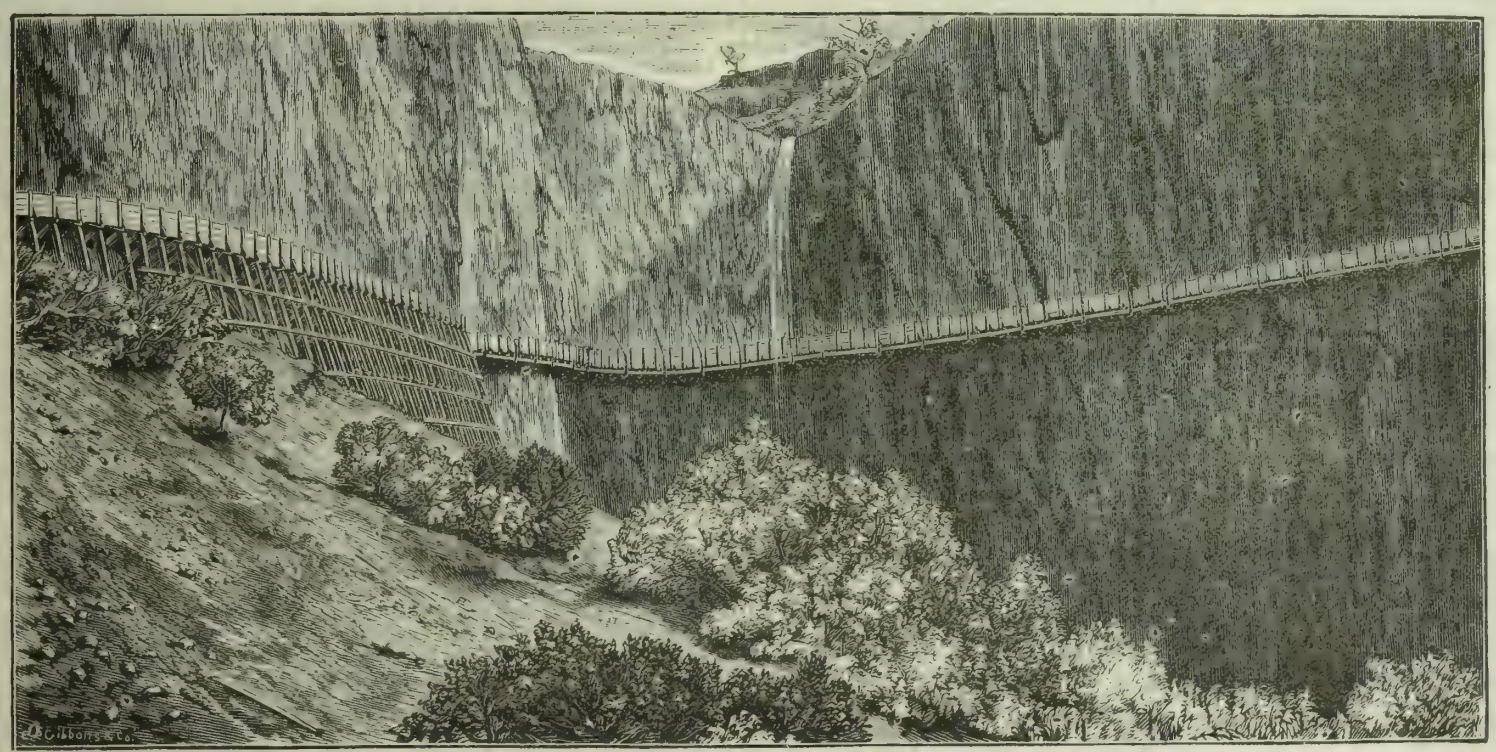
A San Bernardino paper reports that the snow fell to the depth of six feet at Swarthout canyon recently. The inhabitants were compelled to go about on showshoes.

Immigration Association of California.

Persons intending to come to California, and desiring information concerning various parts of the region, can, by writing to the above-named association, receive such information, with reference to land, climate, soil and productions, as may be useful to them. The association is incorporated under the laws of this State. It has no connection with any land or other private scheme, its object being solely to exercise an influence on the immigration into California, and to aid in a proper development of the State.

It is the intention of the association to obtain and disseminate such information as can be obtained from reliable sources in reference to lands which may be purchased; climate, character of soil and its productions; opportunities for obtaining building material and fuel; water supply, transportation facilities; location with reference to markets, towns, schools, etc., and any and all practical information (with maps and statistics of California) which may be beneficial to immigrants seeking homes; to have the same compiled and published in different languages, when necessary, and distributed in the States east of the Rocky Mts., and in Europe.

The Directors of the Association are: Arthur R. Briggs, President; Wm. L. Merry, Vice-President; W. Steinhart, Treasurer; and James R. Kelly, James Duffy, Wm. Blanding, W. N. Hawley, T. L. Barker and J. V. Webster. The Secretary is Col. A. W. Preston, and the Land Officer is C. H. Street. The office of the association is No. 10 California, a short distance from the ferries, California opening into Market near the lower end of the latter street.



BRACKET FLUME OF MIOCENE MINING COMPANY'S DITCH, BUTTE CO., CAL.

A Flume on the Face of a Cliff.

Very interesting are some of the feats of the California engineers in the conduct of water over difficult ways, both for irrigation and for mining. This is due to the rugged character of the country, formed as it is of steep mountains, high ridges, deep canyons, gulches dry for months and then filled suddenly with foaming torrents of water. Some of the finest engineering work in the world has been done in these mountain regions. The engraving on this page shows how W. H. Bellows, Superintendent of Construction for the Miocene Mining Co., carried a flume along the face of a cliff in order to escape the necessity of a trestle-work 186 ft. high, as designed by the engineer who located the line. Mr. Bellows determined to run the line of ditch up the canyon some 200 yards, where it ends against a perpendicular wall of rock 350 ft. high. Around this wall the flume was carried on iron brackets set eight ft. apart, each bracket capable of sustaining a weight of 14½ tons. The length of this bracketed portion is 486 ft. The flume runs around 118 ft. above the bed of the ravine, and from the flume to the top of the cliff above is over 200 ft.

Solano Olive Oil.—Mrs. L. E. McMahon & Son, of Dixon, are now pressing the olives from 350 bearing trees (on the Wolfskill ranch), samples of which we have seen that look very favorable. We understand that the Grangers' Business Association, as general agents, will have a supply for the market soon.

Jute in Egypt.—Some Egyptian jute fiber has been sent to the *Times of India*. It is said to be very good, and was prepared in four days, by a machine invented by a Mr. Garwood, Locomotive Supt. of the Egyptian railway. Efforts are being made to grow jute on a large scale in the Delta of the Nile.

ARBORICULTURE.

The Growth of the Eucalyptus.

At the last meeting of the State Horticultural Society, the President, Prof. Hilgard, brought forward interesting and important data, which he had secured from growers of the eucalyptus in this State. He remarked that he had long contemplated collecting facts concerning the growth of this genus of trees in this State, and the matter had been brought to a head by a request from the French Consul for information. As the French government is fostering eucalyptus growing in Algiers, it was thought some important data could be gained from those having experience in this State; hence the request of the Consul. Prof. Hilgard prepared a circular and sent it out to the growers whose names occurred to him. But few responded, which was a disappointment to him; but he hoped that bringing the subject before the society and the publication of the matter in the RURAL PRESS would lead many others to bring forward their experience and observation.

The Secretary then read the questions sent out by Prof. Hilgard and the answers received, as follows:

San Diego County.

Name of person planting: Rev. R. V. Dodge.

Location: San Diego Co., Cal., 2 miles from the bay.

Variety planted: Blue gum.

Number of acres planted: Seven.

Number of trees per acre: Six hundred.

Distance apart: Eight ft.—too close.

When planted; seed or cuttings: Seed.

Seedlings of what age: One year, and less.

Has cultivation or irrigation been given? Both in slight degree.

Average hight of trees at present: Twenty ft.

Maximum hight of trees at present: Twenty-five ft.

Girth at 3 ft.: Twelve inches.

Estimate as to yield in cord-wood: Can form no estimate as yet; none of my trees have reached as yet the age of two years.

Damage by frost or hot northers: Some few were injured by frost, and some have died during the late dry spell; but the growth is generally very thrifty and satisfactory.

Santa Barbara County.

Name of person planting: J. L. Barker, Ellwood Cooper.

Location: Santa Barbara county.

Variety planted: Mostly eucalyptus globulus and eucalyptus rostrata.

Number of acres planted: Over 100.

Number of trees per acre: About 1,000.

Distance apart: Four, 6 and 8 ft.

When planted; seed or cuttings; seedlings of what age: All grown from seeds. Planted 1872, 1873, 1874, 1875 and 1876.

Has cultivation or irrigation been given? One year thorough cultivation. No irrigation.

Average hight of trees at present: From 40 to 80 ft.

Maximum hight of trees at present: One hundred ft.

Girth at 3 ft.: Largest tree 2 ft. in diameter.

Estimate as to yield in cord-wood: Impossible to give.

Railroad ties or timber: Those on outside of forests two cuts railroad ties and one telegraph pole.

Damage by frost or hot northers: No damage by frost or hot winds.

Objections to culture: None.

Value of land before planting: Ten dollars to $25 per acre.

Value of land after planting: From $100 to $400 per acre.

Remarks:—I have answered the questions and enclose Mr. Barker's statement. This gentleman is the only party excepting myself, who has planted eucalyptus trees in forest form. In hedges and clumps there are in the county about 10,000 trees. Mr. Barker has 15,000. I have planted in clumps, hedges and forests about 150,000; mostly blue gum and red gum (*E. Globulus* and *E. Rostrata*). I have, however, in all 24 varieties, nearly all of them doing well. The blue gum seems to grow more rapidly than the other varieties. The red gum (*E. Rostrata*), however, is a good grower and will stand more drouth than the blue gum. When they are so thick they do not grow so fast. Planting 6 by 7 ft. one acre will contain 1,000 trees; at 6 years the outside trees will give one-quarter cord of wood each. Planting 12 ft. apart many of the trees will give one-half to three-quarters of a cord. Lone trees with plenty of space, 8 years old, will give one cord of wood. I have one tree 22 inches in diameter 115 ft. high, only 8 years old. Another, same age, over 2 ft. in diameter and 85 ft. high.—ELLWOOD COOPER, Santa Barbara, Jan. 7, 1882.

Berkeley, Alameda County.

Name of person planting: R. P. Thomas.

Location: La Loma, or Berkeley Hights.

Variety planted: Blue gum.

Number of acres planted: Seven.

Number of trees per acre: Six hundred and eighty.

Distance apart: Eight ft.

When planted; seed or cuttings: From seed planted in 1876.

Has cultivation or irrigation been given? No irrigation.

Average hight of trees at present: Sixty ft.

Maximum hight of trees at present: One hundred ft

Girth at 3 ft.: Two and one-half ft.

Estimate as to yield in cord-wood: Each tree one-fourth cord.

Railroad ties or timber: Not suitable for ties, but good timber, if kept dry.

Damage by frost or hot northers: No damage in this line.

Objections to culture: Should be cultivated the first year.

Value of land before planting: One hundred dollars.

Value of land after planting: Six hundred dollars.

Remarks:—I would state in connection with the above that for planting the gum tree or eucalyptus, I would recommend particular attention to be given to deep and thorough cultivation before planting, and to plant only thrifty young trees. They should not be over six or eight inches high, and should not be planted less than 16 ft. apart. If planted closer, the trees will run up slender, and not make as much wood. My trees are planted altogether too thick, and I don't think thinning out would remedy the thing, unless it is done before the trees get much of a growth. Great care should be taken in the selection of the young plants. A stunted tree when young will always be a stunted tree. Thrifty vigorous plants make a thrifty and vigorous growth under all circumstances. Thorough cultivation should be given the first year—keeping the ground soft and all weeds down. There is no difficulty afterwards. Squirrels are a great pest in planting these trees, as they will cut off the young plants apparently for pleasure, or you might say to prevent an obstruction, as they prefer the open field. They do not eat the plants, but pass on just biting them off apparently for mischief. It is next to impossible to destroy them, when all the surrounding fields are alive with them. I had great annoyance in this way, but obviated it by putting old coal oil cans around the trees after cutting out both ends of the can. This seemed to frighten them off. The cans may be removed entirely after the first year. The cost of these tins is comparatively nothing. They can be found in abundance at any soap factory, where they have been used for packing tallow. I am now burning the wood of the blue gum in an open fire place, and am astonished to see how well it burns green; in fact when burned green, it is quite equal to most kinds of dry woods—giving a fire like unto hickory wood. I feel that the importance of this tree to California is not appreciated. It will in time clothe the surrounding hills with forests at great profit to the planter. I repeat that in planting the trees too much care cannot be given in preparing the ground. There should be no haste in planting; first get the land in condition, and when planted, guard against the squirrels, and you have no risk to take.—R. P. THOMAS, Berkeley, Cal.

Haywards, Alameda County.

Name of person planting: J. T. Stratton.

Location: Near Haywards, Alameda county.

Number of acres planted: In winters 1869 and 1870, 43 acres of blue gum and 2 acres *viminalis*.

Number of trees per acre: Six hundred and eighty-one.

Distance apart: Eight ft. by eight ft.

When planted; seed or cuttings: Winters of 1869 and 1870. Seedlings.

Seedlings of what age. Sown 7th of April, 1869.

Has cultivation or irrigation been given? Had cultivation; no irrigation.

Average hight of trees at present: From 80 to 100 ft.

Maximum hight of trees at present: About 100 ft.

Girth at three ft.: Six ft. (some larger trees been cut down).

Estimate as to yield in cord-wood: The past season, 20 acres have been cleared; product in cord-wood, 600 cords, 130 of roots.

Railroad ties or timber: In 1876, C. P. R. R. got 40 ties for trial, and Telegraph Co. bought 800 poles for trial.

Damage by frost or hot northers: Never the least.

Objections to culture: None as a forest tree.

Remarks: Briefly I may state that 20 acres of eucalyptus timber land was purchased 1½ years ago by a party, price $210 per acre. He formed the plan of clearing it, and planting thereon a fruit orchard. He let out the contract of clearing off the eucalyptus to a party in Haywards on the following basis: The contractors to pay $800; they to clear the land of the timber and stumps, plow it and prepare it for the trees, dig the holes for trees. For all that labor and money paid, they received all the timber as their pay. The job has just been or is nearly completed, and they give me a statement of its yield, viz.: Six hundred cords of wood and 130 cords of split stumps. The owner of the property seems inclined to doubt their statement. He appears to think the quantity much in excess of 600 cords. Before they commenced clearing, or after they had cut and corded a few trees, I estimated that it would give 800 cords, but taking their statement as correct, the returns from the 20 acres from the beginning are, wood cut previous to 1876, 14 cords; wood cut in 1876, 149 cords; wood cut in 1877, 100 cords; wood cut in 1881, 730 cords; total, 983 cords, at $6 per cord, $5,898; 800 telegraph poles, 75 cents each, $600; 40 railway ties at 50 cents each, $20; total, $6,518.

And to that amount add the $800 will give $7,318 in 11 years as the gross return. The same land if rented for farming purposes at $5 per year (20 acres at $5 per acre per year), would give during the term of 11 years $1,100.

From the sum of $7,318 would have to be deducted the cost of labor, raising the young trees, etc., as follows:

13,620 seedling trees, at $8 per 1,000	$ 108 96
Cost of planting, plowing, etc., at $3 per acre	60 00
For 11 years cost of cultivating, etc., at $20 per acre	400 00
Total	$568 96
Rental of land 11 years	$1,100 00
Total cost of plantation	$1,668 96

From the value of the wood, $6,518, deducting the labor, $1 per cord, gives $5,535; and taking from this $1,668.96, the cost of the plantation, there remains a clear profit of $3,866.04 on 20 acres of eucalyptus in 11 years.—ISAAC COLLINS, Haywards, Cal.

San Mateo County.

Remarks:—My experience in planting the eucalyptus does not enable me to answer your inquiries. I planted 300 or 400 of them in this deep alluvial soil for ornamental purposes. Afterward, finding them, as a general thing, anything but ornamental, removed them, until now I have not perhaps more than a dozen left, and in a year more will probably have none.

When spaded round and watered, they grow like weeds. Even neglected they are rapid growers, but I could not contribute a particle of evidence that they possess any value, and I have so little opinion of them from my own experience, that I do not think I would accept a gift of a tract of land covered with them unless I could simultaneously bargain with some one for their removal, root and branch.

I know this is contrary to the opinion of the gentlemen who farm in the newspapers, but I have long since lost confidence in newspaper farming.

I cut last year 1,000 cords of wood here—white oak trees from 12 to 24 inches thick. A newspaper farmer would have made a fortune off of it. I did the work as cheaply as I could, and would be happy to have back a new dollar for an old one. It can of course be proved that there is money to be made by planting trees and waiting 10 or 15 years for them to mature to cord-wood, but the man who puts it into practice is generally some city man who is getting his sparrow-grass experience, or he has land to sell and is romancing for the purpose. Excuse this free dissertation on tree planting. I have paid several thousand dollars for the information I here offer you gratis, and I want a partner to share my experience with.—JOHN T. DOYLE.

Comments.

In commenting on the foregoing letters at the meeting, Prof. Hilgard made many interesting remarks, of which we are able only to give a scant outline. He remarked that Mr. Doyle's experience was unusual. Apart from the eucalyptus, his experience would indicate that cord-wood in the tree was worth less than nothing, which would be a peculiar condition of affairs in a State needing firewood as badly as some parts of California.

Of the eucalyptus, Prof. Hilgard said that it was no doubt a great pest when it was planted in the wrong place, but still there is abundant use and space somewhere for a rapidly-growing, drouth-resisting tree, which grows well in half the State. Part of our State, because of its lack of trees is called an arid region. If all the lands capable of bearing the eucalyptus were forest, who would call it so? Not only the name, but the climate would change.

We need fuel, lumber, railroad ties, etc. If the blue gum does not make good ties, other kinds of eucalyptus will. The wood is no softer or more porous than redwood; probably as durable and resistant of insects or decay. It is bettel fuel than cottonwood, and it is good for inner cabinet work, if not for outside.

Beggars should not be choosers. If we are in a Californian hurry to get rich in tree growing, we cannot grow first-class woods. We are trying all sorts of trees. At the University they are now being set out. It is desirable that hard-wood trees should be planted for future use. But let us not despise the *Eucalyptus globulus* for immediate use. Let us clothe the Coast Range and foothills with forests, if only to increase the rainfall and the beauty of the country.

Suppose even that the estimated returns from planting given us are too high for the average; still, if we can get even full farm rent off millions of acres now lying out, it will add greatly to the wealth, and promote the industries of the State. We cannot grow hard-wood forests in time for the giving out of the redwood supply. Let us have something to fall back upon!

CORRECTING STATISTICS.—Among recent publications of the census bureau is an extra census bulletin containing tables showing the approximate areas of the United States, the several States and their counties. It has been prepared by Mr. Henry Gannett, the geographer and special agent of the tenth census. It appears that of several States a number of estimates of area have been in use, differing from one another by thousands of square miles, and none of them perhaps traceable to any authentic source; while many of the results are palpably wrong, being so far from the truth that it is a source of surprise that they were not corrected before. A map defining the gross areas of the States and Territories accompanies this useful bulletin.

THE STABLE.

Horse Breeding in California.

[Written for the PRESS by JOSEPH CAIRN SIMPSON.]

The origin of the American trotter has led to many conjectures and theories, which were as trifling as they were absurd. A genius who has taken a prominent position, according to his own notion, in genealogy ascribes that faculty to the Lyster Turk, on account of that horse being also called the Straddling Turk. He reasoned that as trotting horses went with their hind legs wide apart, that the horse entitled to such an appellation must be a trotter. Had he been better informed he would have known that many of the fastest had not that peculiar action, while some of the fastest of race horses straddled so that, in the common vernacular, "a barrel could be rolled between their legs." There was a burlesque on this theory in the shape of communications in the *Turf, Field and Farm*, about ten years ago, in which the writer claimed that the Godolphin Arabian was the real patriarch, supporting this view with a very plausible story, and with what purported to be old drawings of a trotting race made in the early part of the 18th century. The hoax deceived a good many people, and a wood-cut copy of one of the sketches was republished only a short time ago. In a late number of the *Breeders' Gazette*, "Observer" claims that Messenger inherited his faculty for producing the trotting step from his ancestor, Sampson, as Sampson had a flaw in his pedigree, and this divergence from the blood of the desert enabled descendants with an infinitesimal portion of that strain to trot fast. To follow a fraction of the vagaries would require a volume, though to expose the fallacy of a great majority a paragraph or two would be ample space.

The four prominent families of the trotting tribes are Hambletonians, Mambrinos, Clays and Bashaws, and the Morgans rank nearly as high. These are again divided into sub-families, among the most distinguished of which are the Vermont and Long Island Black Hawks, Patchens, Goldusts, etc. Wilson's Blue Bull has taken a prominent position, and so quite a number of others outside of the quintette named, and which will be noticed hereafter. The Hambletonian is par excellence the trotting family of the world—the superiority established beyond a doubt, though there are a few who are hypercritical enough to question it. It is not so easy to decide where the second award should go, and fortunately it will not be found necessary to decide which is entitled to the red ribbon.

The four distinguished clans have sprung in the paternal line from two sires—the Hambletonians and Mambrinos from Mambrino, a thoroughbred son of imported Messenger, and the Clays and Bashaws from Young Bashaw, a nearly thoroughbred son of imported Grand Bashaw. The founder of the Morgan family is generally accredited to a high-bred origin, but as there is a chance for doubt, it will not have the same standing as the others. The founder of the Hambletonians, Rysdyk's Hambletonian, was by a son of Mambrino, Abdallah, and the founder of the Mambrino Chiefs was by another son called Mambrino Paymaster.

I hold that to the farmer who engages in breeding roadsters and fast trotting horses pedigree is of the greatest importance. He must look for other qualities than the capacity to trot fast to be sure of a certain remuneration, and the mere fact that a stallion has got a number in the 2:30 list, does not warrant him in overlooking other characteristics.

For this reason I shall dwell on the pedigr and in connection with that the form, size, style, beauty, temper, endurance and other traits, which add to the market value, as well as the speed lines. Every breeder who has the least acquaintance with horses is aware of the benefit in securing the qualities named above in connection with trotting speed. There are few, however, who are not more or less carried away by the *glamourie* which surrounds the victor of fast races, and are prone to give the preference to an ill-shaped inferiorly-bred hero of fast time than one which is far better adapted for their purposes. I would give the capacity to trot fast the credit it so truly is entitled to. The speed is one of the most valuable qualities in a sire, and yet that may be so counterbalanced by lack of other essentials, to say nothing of actual defects, that the fast horse may be the very worst which the breeder could select. This is not usually the case, as a majority of the fast trotting stallions of the present day have been bred with an eye to form as well as speed. There is no question that the rage for the Morgan and Vermont Black Hawk horses, which took the form of an epidemic thirty or more years ago, had a bad influence on the general stock of the country. There was merit in the families which properly used, has been of service, but the merit was overshadowed by the defects, and a valuable element wasted by indiscriminate use. Ponies of 14 hands were used to get farm stock, and when size was referred to the weight was the answer to the question. These little compact horses would take on flesh almost as rapidly as Suffolk swine, and adipose was made to represent muscle. For generations these horses had been bred in a country of rigorous climate,

and that and inbreeding caused a small horse on the start to become smaller as the generations came farther from the parent stock. In that rough and hilly country they were valuable. In combination with work oxen they were admirably adapted for the wants of the people of that day. It was not surprising that the active New Englanders eulogized them, for they were active, hardy, good travelers, docile, trappy, and performed well on snow paths, or during the heat of summer. In their palmiest days agricultural business was carried on in a comparatively primitive style. The cradle and scythe were the synonyms of the reaper and mower, and the writer has a scar on the left hand which a sickle made in a newly-cleared field, where the stumps were too numerous to swing the cradle between them.

In these hilly counties with light, stony soil, and still encumbered with rocks and the stumps of trees, big horses were out of place. In fact, horses were secondary in importance in the work of the farm to oxen. A yoke and chain was all the gear required. A cart, sled, stone-boat, a harrow, made from the fork of a tree, cast-iron plow and the minor tools, made by the neighborhood blacksmith, constituted the "outfit" of the farm.

The prompt little steeds would slip over the ground when covered with the winter mantle of snow very acceptably. The summers brought busy times, too busy for much social interchange, and on Sundays, those who were "well enough to do" to have a light wagon, found the little team just the thing to take them to the "meeting-house." On the Western prairies, on the bottoms of the Ohio, the Wabash, the Mississippi, and in nearly all others of the new sections of the country, there was an entirely different state of affairs; and in California there are still more peculiar conditions attached to almost every branch of business. The little horses, however, overran the West, and many of the members of the tribes came to the Pacific coast, though more attention was paid to obtaining those which had the most size for the journey across the plains. Even on the first settlement of Iowa, and for many years after, powerful horses were not such an absolute essential as they are now. The prairie was "broken" with oxen attached to a plow which would cut from 20 to 36 inches of a furrow, and this size was thought essential to properly perform the job. The team subsisted entirely on the prairie grasses, which would not have sustained horses, and it was only when turned over, during the months of June and July, that the rotting of the sod would follow. It was also necessary that the depth should be slight, two or three inches, and then in the autumn, or the following spring, it would harrow up into as fine tilth as could be desired. Succeeding plowings consisted in stirring that thin stratum of friable soil, and a little pair of horses would walk along with the light steel plow, polished like a looking-glass, as though it were nothing. The prairie roads then were as fine as could be, save when the rains filled the "sloughs," and there was comparatively little marketing to do. It was evident that there must be a change of tactics when there was a change of conditions. The plowing would have to be more thorough, the roads would be forced on to the section lines, and in place of following the "divides" and most favorable routes, boundaries between farms would govern, steeper grades and the wear of constant travel, compelling the use of greater force in the team. There were more of the products of the farm to market, and in place of having the whole of the winter to deposit it in the ware-houses, ready for the opening of navigation in the spring, the railways whirled it off continuously. Oftentimes the price was dependent upon speedy delivery, and this increase of value might happen during the time when other work was pressing. The huge ox teams and the small horses were unfitted for this change, and an entirely different animal was required. As these articles progress it will be seen where another extreme was inaugurated, and there was another craze, if not so virulent as that which marked the demand for the Morgan and Vermont Black Hawks. This may appear to be a digression from the topic which is to treat of breeding roadsters and fast trotters, though it will be found closely identified with the subject when coupled with farm production of the desired animals. The breeder who makes fast trotters a specialty, bases his stud on the speed lines. His catalogue enumerates those of the ancestry which have fast records, and in the most complete of them little space is occupied in describing the size, form, or general appearance of the progenitors. In a few instances the information is furnished in a part, and in the list of the stock of one of the great trotting-horse breeding farms, the hight of stallions and brood mares is given. Had this plan been followed by all those who have issued catalogues, and this information supplemented with the hight and marked points of conformation of the horses which have done the most towards originating the roadster and fast trotter, there would have been a better foundation to judge. It is evident that the weight test is fallacious in the extreme. A horse which shows 1,200 lbs. on the scales may be smaller than one of 200 lbs. less, and with an inferior capacity for work of any kind. Hight, too, is a doubtful criterion, though far more tangible than weight. The hight of the matured animal can only be varied a trifle, and a statement of so many hands carries to those who have a knowledge, slight even though it be, of what it is probably adapted for. Hight, length and weight, when in good working order, neither lean or fat, will give most of breeders a fair understanding of the size, and even the stature of breeds which are well-known will convey a fair idea. Thus the get of American Eclipse, which were 15½ hands, were known to have substance enough to give them power, and a 16-hand Expedition was known to be a coacher and with the other qualities which were needed for the carriage. The Eclipses were muscular, generally smoothly built, while the Expeditions were more angular, ragged in the hips, deep through the shoulders and breast, and with longer heads and ears. This, of course, was modulated by other strains with which they were commingled; and I have seen sons and daughters of Eclipse, and those in the second generation, which had few of the family characteristics. When the source of the blood horse is recalled, and the Barbs, Spanish, Turkish and Arab horses compared with the animals of the present day, it does not require much argument to show the effects of care in the increased hight and bulk of the progeny. Thus, the descendants of the horses which were bred on the hills of New England and northern New York, and which rarely reached more than 15 hands, can be found in California with size enough for any purpose. This not only came from the importations being above the usual size of the family, but they have been mingled with other races of greater bulk, and the soil and climate perfected the combination.

THE VINEYARD.

Grape Growing in California.

The year 1882 opens with bright prospects for the future of the grape-growing interest of California. It has not only recovered from the period of deepest depression, six years ago, but it has taken a leap upward and forward, which it will never retrace unless by the most grievous fault of those who have it in their hands. The increase in the area of vineyards is this season actually limited by the supply of cuttings of desirable grape varieties obtainable on this coast. And it is encouraging to note that the deficiency is in part being supplied by importations from the East, of cuttings of American stock that defy the attacks of the phylloxera, as well as by seedlings and cuttings of the native wild grape, whose resistance to the pestilent insect is by this time very nearly demonstrated. Most of these American cuttings will probably be used as stocks upon which to graft the best varieties of the European grape heretofore cultivated in California; but not a few will be grown for their own fruit, thus increasing the variety of wine produced in California, and enabling us to test combinations never before tried, of the European with the American varieties. Thus the opportunities of our grape-growers are great, greater probably than have ever been offered before in the long history of grape culture; for in addition to the unusual advantages offered by the climate, the freedom from administrative vexations, unexhausted soils yielding returns that seem fabulous to the vintners of the old world, and a progressive population untrammeled by the traditions of the past centuries, Californian grape-growers have been favored by the misfortune that has befallen the foremost wine-producing countries of the world, whose vintages thus far California alone can even approximately imitate. Even the threat that seemed to be hanging over the industry from the inroads of the phylloxera in the Sonoma valley, and the demonstration of its prevalence over a large portion of the State where its presence was never suspected, have failed to impede seriously its development, since investigation proved at the same time the fact that the insect labors under some special disability which renders its spread controllable to a degree not realized elsewhere. In any case, the timely warning now given will prevent any heavy investments in vineyards not protected either by irrigation or grafting; and should all the vineyards now in bearing ultimately fall a victim to the attacks of the pest, they will bear but an insignificant proportion to the total area that will then have been planted and secured from its inroads. According to the census returns the total area of vineyards in the State was only 36,539 in 1880, with a wine product in 1879 of 3,144,620 gallons, outside of grapes sold and raisins made; the total of tilled lands in the State being reported at 2,204,627 acres, out of over thirty millions estimated to be readily susceptible of cultivation. The area devoted to grape culture can therefore be increased one hundred fold, and still cover but little more than one-tenth of the cultivateable area. Should the same proportion of wine production be then maintained, the three hundred million gallons of wine will form a somewhat notable fraction of the world's production, about equal to one-fifth of that of France, or one-tenth of the whole; and at present rates would alone constitute a value of over $100,000,000 per annum. But to attain these and even greater results than now seem within our grasp, it is well to consider and keep in mind the causes that led to the depression, during which it was thought more profitable to turn hogs into the vineyards than to make wine. Now is the golden opportunity for establishing the position and reputation of California wines and raisins in the world's market, and we should diligently strive to turn it to the best account before the rehabilitation of the French and Spanish vineyard renders their competition more pressing. What has been done before can be done again, and the throwing on the market of inferior articles in large quantities can bring a return of the low values of 1875-6.

There can be no doubt that the low estimate then placed upon the California wines was chiefly due to the fact, that the vast majority of what had then been put on the market was the product of the Mission vine, and even that to a great extent poorly prepared. Failing to find favor with wine consumers under their own names, the California products were then disguised under those of French or German wines, either pure or blended with something intended to give them the desired character. It thus became the current opinion that it was only thus that wines grown in California could be made to "go down" with wine consumers, while those claiming a more refined taste could, or thought they could, always detect the "California flavor" under the thin disguise.

As the better class of wine grapes came into bearing, the wines made of them, or of blends with the Mission, gradually ventured again into the market under their own names; and it gradually came to be understood that first-class wines could be produced in California. But the channels of trade, once established, are not easily changed, and still our wines were, and are this day, chiefly sold and consumed under foreign labels, often after a double voyage across the Atlantic and around the Horn. And however we may increase the quantity produced, the profits of the industry will mainly go into other pockets than those of the producer, until *quality* is made a more prominent object than has thus far been the case; and especially unless the art of blending so as to the produce, year after year, definite kinds and qualities, that the consumer will be able to order with the confidence that his palate will not have to undergo a laborious process of readjustment with each case or pipe of wine that he orders. This is probably the most common and best justified complaint now made in respect to our wines, and it is manifestly due to want of proper knowledge of the business on the part of many of those engaged in it. We need more first-class wine experts who know how to equalize, by judicious blending, the inevitable inequalities in the vintage of different years, without resorting to the chemist's shelves for the materials. We must study the character of the different localities and regions of the State, and determine what is the best use to be made of its grape- or wine-producing powers; not only with a view to the successful imitation of established foreign wines, but with that of obtaining products having a character of their own, and as such deserving, and sure to obtain in the end, the approval of wine-drinking nations. It must become generally understood that high quality and large production do not readily go together, and that whenever the wine industry is placed on a rational basis, the segregation of what is naturally inferior and what is superior will be as much a matter of course, with a view to the highest profit, as in the case of the smelting of high-grade ores separate from low-grade ones. It goes without saying, that it is on the reputation of their high-grade wines that wine-growing countries manage to dispose profitably of their low-grade products, which naturally form the great bulk.

The management of wine-making by good experts implies, of course, the concentration of that process in large wineries, and largely distinct from the industry of grape-growing. It should emphatically *not* imply, however, the manipulation of wines into artificial compounds. In no country in the world is there so little excuse for the practice of the more recondite arts of the wine-doctor. With the variety of material that is or can be at the command of the wine maker in California, the use of the condiments elsewhere added to wines, or serving to make them out of whole cloth, is but a clumsy device resorted to for lack of knowledge of the high art in blending natural products so as to produce a given result. The use of grape sugar or glucose, elsewhere often the only resort if any wine at all is to be made, can here serve only the purpose of adding water to the natural wines, or in making pomace wines; since the fervid and unremitting sunshine of California needs no supplement for an adequate sweetening of the grape. The time has not come when California can safely allow it to be said that water and glucose contribute to the filling of her wine cellars. Let not the greed for rapid gain efface the memory of past experience; but let it be the pride of her wine-makers to be able to say that whosoever buys or drinks their products deals only with the legitimate offspring of the vine.—*Prof. Hilgard in Jour. of Com.*

Black-Knot on Grape Vines.

Chas. A. Wetmore, in his annual report as Viticultural Officer, just issued, has the following interesting review of the black-knot problem:

The black-knot has caused much complaint this year. Specimens with inquiries have been sent us from all parts of the State. Many have supposed it to be some form of disease, to be dreaded as contagious. To comprehend its nature and to suggest remedies, we must first study the flow of sap during the early vegetation of the vine in spring. This will lead us also to the principles which should govern pruning.

Dr. Jules Guyot, the most eminent of French authorities, teaches us that under the influence of heat and light the vital movement commences in the spring time, in advance of vegetation of the vine, and speedily there is a motion of the sap upwards, defying the law of gravitation, which forces open the buds and pushes new shoots into existence, which are fed temporarily by the sap accumulated during the preceding year in the old wood, and the water that is absorbed from the soil. Subsequently it is the leaf which draws the water from the soil and absorbs the carbon for the descending flow, while exhaling oxygen. The force of the upward flow of water and sap has been measured and found capable of sustaining a column of mercury of from thirty-two to forty inches—equivalent to a column of water of from about thirty-two to forty-five ft. in hight. This force must even be greater than found by experiment, because the ascending force has been known to start vegetation in branches of the vine sixty to one hundred ft. in hight, and in gigantic trees of three hundred and more ft.

It is apparent, therefore, that serious consequences may happen to the tissues of the plant if this ascending force, which concentrates the nutritious accumulated sap in the direction of new growth, is not followed promptly by a corresponding new development. It happens that sometimes:

First—The vines have been pruned so that the buds for new growth are not proportionate to the root development or the vigor of the plant, which may vary constitutionally, or through conditions of soil, culture, and climate. The consequence is a surcharge of the canals, swelling of tissues, exudations of sap, and disorganizations, which become seats of local disease and decay. Black-knot is the consequence.

Second—The buds of the wood intended for the further development have been injured by frost, or other cause, accomplishing like results, as in the preceding case.

Third—The growing and green shoots are seriously injured by fungoid disease, the tender bark destroyed, the healthful flow of sap impeded, with similar consequences upon the new wood of the current year.

We find that black-knot affects certain varieties of vines more than others, such as the *Rose of Peru* and *Muscat of Alexandria*, and that these are also the varieties which furnish immatured wood so disappointing to those who plant cuttings. We find that this complaint of the vine is more frequent in situations of rank soils, wet, or fat lands, where the new wood does not ripen well before severe cold strikes them, and in places subjected to early and late frosts. I have not known a case of an arbor vine affected by black-knot, though it may be looked for where the same has been severely injured by mildew, which may cause its wood to fail to mature. A vine raised high, however, offers so many opportunities for the development of suckers that dangerous results may not follow, as where low pruning is practiced. The remedies are therefore to cultivate hardy varieties in situations where black-knot is common, to raise higher the varieties subject to the trouble, both to escape frost and to permit more opportunity for vegetation, and especially to prune generously, to the extent that the natural vigor of the plant will endure it. Planting vines far apart, in rich deep soils, in warm climates with excessive irrigation, combined with the low and close pruning, will always be attended with more or less black-knot, according to the variety cultivated. There is now a tendency to give vines more room in making new plantations; if this be not followed by generous pruning, and the plant be not given sufficient expansion, the expected advantages will not only not be realized, but positive evils will result. With such ordinary pruning the vines would succeed better if planted closer.

Results of Vine Fertilization.

EDITORS PRESS:—Last season the vine growers in Napa county and in other counties through the State were putting manure on their vineyards. It was reported that they were putting on lime, gypsum, salt and other manure, such as bone meal, and barnyard manures, and now we are informed that suint, the residuum from wool washing, is desirable. Won't you or some of your readers let us know the result?—C. DELL, Napa City.

We should like to have reports from all who have used fertilizers as to the effects upon the growth of the vines, yield of grapes, etc.

WILD BIRDS RACING WITH THE CARS.—Several times I have noticed wild birds of different species flying along parallel with, and near a railroad train, in such a way as to suggest the idea that they were really trying to distance the iron horse. One day last spring, I was coming East from Sioux City, Iowa, on the Illinois Central R. R., when my attention was attracted to a couple of birds, which seemed to be making us a trial of their speed with the train. They were, as I supposed at the time, our smallest species of hawks—sharp, alert, powerful birds, possessed of a high degree of strength and endurance on the wing. They kept steadily on their course, a dozen rods from the train, for at least a mile and a half; but the train was too rapid for them, and they finally turned aside and went back in the direction whence they came. A strong head-wind was blowing at the time, and the birds, at some moments, seemed to sail squarely in its teeth, without fluttering a wing. I watched them with much interest, and I did not think I could be mistaken in the belief that they were really trying to beat the train in the race. Horses and dogs frequently race with railroad trains, and possibly the instinct for sport and excitement may also exist in the wild birds. *Charles Aldrich, Webster City, Iowa.*

DATE.	San Francisco.		Niles.		Livermore.		Stockton.		Sacramento.		Auburn.		Cisco.	
	TEM	RAIN.	TEM	RAIN.	TEM	RAIN.	TEM	RAIN.	TEM.	RAIN.	TEM.	RAIN.	TEM.	RAIN.
1870—JULY					71.96		74.18				80.84		68.16	
" AUGUST					71.48		76.25				77.40		64.83	
" SEPTEMBER					67.51		68.62			.02	69.73		55.82	
" OCTOBER					64.50		63.94		59.50	.02	61.68		47.93	1.33
" NOVEMBER					50.13		55.73	.05	51.30	.58	53.79		30.26	3.11
" DECEMBER				2.64	49.[illegible]	1.06	46.70	.92	42.40	.98	46.50	.4	24.00	4.88
1871—JANUARY				2.00	50.00	1.42	46.90	1.23	46.26	2.42	47.20	7.21	31.60	7.11
" FEBRUARY			47.50	2.12	52.90	1.93	49.20	1.42	45.76	1.83	45.40	2.41	28.20	8.00
" MARCH			51.10	.27	57.50	.36	57.00	.47	54.10	.98	51.60	1.85	32.60	2.66
" APRIL			54.00	.82	59.80	1.25	60.10	.59	57.90	1.05	55.80	3.57	36.70	3.25
" MAY			58.00	.29	63.20	[illegible]	64.60	.24	63.10	.50	61.00	2.00	44.80	2.56
" JUNE			63.00		75.90		74.40		71.40		74.50			
Total		12.6		7.45		6.15		4.90		[illegible]		17.50		32.90
1871—JULY			62.00		79.00		78.50		71.20		77.90		73.10	
" AUGUST			64.80		77.90		74.70		75.80		79.20		67.00	
" SEPTEMBER			77.30		80.20		70.70		66.80		77.40		58.40	.44
" OCTOBER	65.50	.06	62.30	.05	68.40		63.50		63.50	.29	64.40	.51	51.50	.64
" NOVEMBER	52.00	2.47	54.20	1.56	52.70	1.13	52.53	1.33	49.70	1.24	50.95	2.80	34.92	6.78
" DECEMBER	53.00	11.54	51.60	11.91	49.60	11.69	49.20	11.43	47.80	10.37	48.00	13.55	32.10	28.39
1872—JANUARY	56.00	4.63	51.60	2.15	48.70	2.15	49.10	2.40	46.00	3.49	45.10	6.80	30.20	8.78
" FEBRUARY	54.20	5.92	51.70	4.32	53.50	2.69	51.10	3.41	51.20	4.34	48.60	9.35	30.30	13.58
" MARCH	53.70	1.68	54.20	1.39	52.30	.7[illegible]	56.60	1.35	53.80	1.74	51.40	3.59	30.60	4.29
" APRIL		1.14	54.90	.94	54.70	.43	57.30	.53	57.60	.61	51.80	2.60	30.60	6.69
" MAY	56.30	.01	61.10		61.90		67.70	.10	67.00	.28	63.50	.65	43.70	1.18
" JUNE	59.90	.19	66.30	.27	65.20	.32	72.60	.05	69.20	.01	69.50	.22	56.00	1.03
Total		27.64		22.50		19.20		20.63		22.40		40.10		71.80
1872—JULY	58.00	.01	66.10		62.20		75.60		72.00		75.50		62.00	
" AUGUST	56.40		67.10		70.00		77.70		71.10		75.30		62.90	
" SEPTEMBER	58.70	.04	64.30		71.40		71.20		67.30		69.10		55.10	
" OCTOBER	65.50	.17	50.50	.11	66.20		64.40		60.07	.20	63.40	.38	49.80	.64
" NOVEMBER		2.53	54.50	2.00	58.20	1.22	54.20	.90	52.20	1.87	51.30	3.13	36.90	3.50
" DECEMBER		6.10	50.50	5.00	49.60	3.87	46.50	5.07	47.50	5.41	45.40	8.43	35.90	12.36
1873—JANUARY	54.10	1.83	53.90	1.07	49.40	1.04	51.80	1.15	50.70	1.11	48.50	3.74	35.40	6.16
" FEBRUARY	50.40	3.94	49.50	5.15	48.20	3.73	47.70	3.34	48.04	3.83	42.30	7.57	26.60	28.00
" MARCH	51.12	.78	53.30	.63	49.80	.68	57.70	.43	56.50	.46	53.70	.53	36.00	6.27
" APRIL	54.40	.43	57.90	.32	52.70	.15	58.30	.46	61.50	.50	54.60	1.22	38.50	1.72
" MAY	55.60		60.70		62.20		63.60		68.00		63.10	.37	49.40	2.85
" JUNE	57.80	.02	64.40		68.00		69.60		69.70		70.50		62.10	
Total		15.86		14.3[illegible]		10.69		11.40		13.4[illegible]		25.32		61.50
1873—JULY	57.90	.02			77.20		76.10	.05	81.70		80.20		67.50	
" AUGUST	59.10	.05			70.40		72.00		66.30		75.20		60.10	
" SEPTEMBER	57.80		65.30		69.80		72.20		69.90		74.90		59.40	
" OCTOBER	59.10	.79	61.70	.66	67.70	.42	68.30	.32	61.40	.31	61.10	.34	47.30	1.81
" NOVEMBER	57.40	1.11	57.10	.55	54.90	.70	56.50	.70	58.80	1.87	56.80	1.25	45.90	3.20
" DECEMBER	59.60	8.54	48.90	4.00	44.30	4.48	47.10	4.38	47.70	10.12	43.80	12.05	31.80	23.30
1874—JANUARY	48.90	4.86	47.50	3.53	49.50	2.97	46.00	3.54	45.70	5.30	42.40	7.46	32.60	10.96
" FEBRUARY	56.00	2.26	48.40	.82	47.70	1.03	48.60	1.32	49.30	1.86	45.90	4.14	30.40	7.66
" MARCH	54.20	3.37	51.70	3.11	51.20	1.34	52.40	3.91	52.90	3.05	47.20	6.26	31.10	15.55
" APRIL	53.70	.88	60.70	1.40	56.40	.95	59.70	.56	59.50	.89	56.30	2.56	35.20	4.38
" MAY	55.60	.73	61.20		64.10	.32	65.70	.47	64.70	.37	63.30	.57	41.30	3.44
" JUNE	57.80	.13	65.90		71.80		71.80		70.20		71.50		49.30	
Total		22.7[illegible]		14.10		12.20		15.25		23.77		34.6[illegible]		70.30
1874—JULY	57.70		67.10		75.50		77.70		72.80		79.69		63.60	
" AUGUST	58.70		65.80		73.80		74.30		70.90		74.00		57.50	
" SEPTEMBER	65.10	.04	67.70	.07	76.60	.30	75.20	.09	70.70	.05	72.90		57.70	.52
" OCTOBER	61.80	2.85	62.70	2.44	60.50	1.67	68.80	1.28	62.00	2.26	61.70	1.57	47.50	3.00
" NOVEMBER	57.20	6.08	56.90	4.33	58.90	2.03	57.30	3.75	54.60	3.80	51.30	9.64	38.80	7.44
" DECEMBER	50.30	.36	46.70	.25	51.60	.20	47.00	.25	44.60	.44	44.50	.97	35.90	.55
1875—JANUARY	49.50	5.77	45.60	3.54	52.10	5.49	48.40	4.50	46.90	8.81	44.40	10.00	34.10	12.33
" FEBRUARY	52.00	.23	53.30	.23	56.80	1.20	54.30	.28	52.70	.03	49.90	.44	33.10	1.37
" MARCH	50.50	1.27	52.30	.69	53.80	.55	54.40	.68	53.70	1.26	49.40	2.73	31.49	8.22
" APRIL	55.10	.08	59.50	.05	64.20		62.60		63.00		63.00	.11	41.70	3.50
" MAY	58.40	.24	65.10	.13	71.60		71.70		68.10	.04	67.20	.61	50.70	4.71
" JUNE	61.59	1.23	66.60	.48	70.80	.52	72.80	.49	70.60	1.06	72.50	1.82	53.80	3.06
Total		18.15		12.21		11.87		11.93		17.75		27.89		44.8[illegible]
1875—JULY	60.99		66.9[illegible]		72.80		74.21		73.5[illegible]		80.48		66.04	
" AUGUST	59.92		67.67		73.95		72.52		72.50		77.52		65.36	
" SEPTEMBER	59.35		66.86		72.35		70.57		55.74		73.15		61.58	
" OCTOBER	60.46	.22	66.00	.10	70.25		69.94		69.9[illegible]	.04	69.66	.85	53.69	1.75
" NOVEMBER	56.21	6.1[illegible]	52.90	8.83	57.77	7.23	56.63	5.99	56.6[illegible]	6.20	63.29	11.39	37.99	9.00
" DECEMBER	50.37	3.80	50.83	3.52	52.79	1.62	49.90	3.01	47.97	5.52	46.80	6.05	36.53	5.78
1876—JANUARY	46.95	6.95	49.18	4.30	48.30	2.68	45.08	3.26		4.99	44.18	7.60	28.26	20.56
" FEBRUARY	51.68	3.4[illegible]	53.89	4.12	47.71	3.01	50.51	2.47		3.75	49.25	5.62	30.96	13.55
" MARCH	52.83	4.05	53.69	3.49	50.60	4.39	55.18	3.31		4.15	51.27	16.17	30.19	19.11
" APRIL	61.13	.84	58.72	.85	55.64	.73	60.55	.74	59.51	1.10	57.94	1.97	36.61	.77
" MAY	62.76	.19	63.22	.70	64.23	.33	65.01	.15	65.71	.15	65.41	.61	36.79	1.33
" JUNE	68.68	.03	79.35		75.37		77.34		76.93		77.14		56.3[illegible]	
Total		25.64		25.88		19.99		18.84		25.54		44.26		71.85
1876—JULY	65.53		67.63		70.28		75.60	.12	74.05	.21	75.82	.41	59.09	1.00
" AUGUST	65.83		67.15		66.96		72.00		72.79	.02	73.71	.21	60.37	.08
" SEPTEMBER	65.10	.31	65.82		72.07		69.89		70.06		70.54		57.78	.25
" OCTOBER	62.57	3.25	60.9[illegible]	2.75	66.98	1.26	63.54	2.14	65.46	3.4[illegible]	62.60	4.52	47.48	1.11
" NOVEMBER	60.05	.23	55.53	.15	58.04	.10	53.52	.30	53.32	.30	53.94	.65	39.91	.52
" DECEMBER	51.07		48.82		49.64		45.74		45.51		49.69		40.62	.22
1877—JANUARY	56.43	2.98	53.58	3.03	52.47	2.47	48.29	3.23	49.17	2.77	49.35	6.94	36.24	15.50
" FEBRUARY	58.90	.8[illegible]	55.19	.67	53.3[illegible]	.56	54.90	.23	55.01	1.04	53.48	1.47	38.79	.83
" MARCH	60.78	.83	55.40	1.02	58.45	1.10	61.46	.91	59.00	.56	57.40	2.14	41.48	.52
" APRIL	58.48	.18	57.58	.42	57.31	.13	62.92	.02	60.25	.19	57.61	.72	40.51	3.38
" MAY	60.41	.22	61.44	1.30	60.66	.39	67.16	.27	64.55	.64	61.52	1.53	44.58	3.86
" JUNE	67.03		70.68		73.31		76.94		72.52		74.52	.27	60.14	.80
Total		8.84		9.34		6.01		7.22		9.18		18.86		34.07
1877—JULY	66.00		70.85		77.37		77.58		75.74		78.60		65.29	
" AUGUST	63.66		67.32		69.54		75.55		73.03		75.75		61.63	
" SEPTEMBER	63.89		67.32		71.69		72.83		72.38		71.93		55.72	
" OCTOBER	62.26	.50	60.47	.25	64.75	.27	62.02	.28	62.10	.64	60.72	.99	47.33	.60
" NOVEMBER	50.42	1.68	55.52	1.16	50.00	1.29	55.82	.68	53.11	1.46	52.42	1.46	41.09	4.72
" DECEMBER	53.88	2.26	51.24	1.96	53.63	.73	48.94	1.34	45.26	1.35	47.75	1.55	37.05	8.24
1878—JANUARY	54.07	10.81	49.24	7.67	53.45	4.61	48.32	5.38	48.64	8.68	48.20	10.61	34.14	16.37
" FEBRUARY	54.75	11.41	52.02	8.5[illegible]	5[illegible].66	6.73	50.87	6.77	50.74	5.89	49.06	10.19	33.59	13.06
" MARCH	58.89	4.13	55.74	3.58	59.05	2.61	59.46	2.57	55.58	3.23	53.15	7.60	37.06	2.32
" APRIL	60.00	1.18	57.65	1.50	60.31	.96	56.71	.99	60.07	1.13	56.37	1.75	40.55	3.03
" MAY	63.50	.15	62.92	.07	65.33	.06	62.04		66.29	.17	63.03	.98	44.50	.40
" JUNE	64.25		65.67		70.20		68.96		73.51		72.61		62.27	
Total		32.15		24.67		16.66		18.01		22.55		36.13		42.74
1878—JULY	64.2[illegible]	.01	60.03		63.74		72.40		74.13		74.94		64.48	
" AUGUST	64.70		60.04		70.28		69.22		74.05		75.08		64.56	.22
" SEPTEMBER	65.35	.67	64.50		67.08		67.64		68.32	.29	68.48	.50	54.68	
" OCTOBER	65.47	1.37	62.17	.71	6[illegible].85	.24	60.53	.41	61.97	.38	62.70	.89	48.44	1.50
" NOVEMBER	60.00	.7[illegible]	56.45	.43	57.98	.31	53.62	.55	53.98	.42	54.09	1.53	42.09	1.91
" DECEMBER	54.32	.55	47.04	.34	49.74	.17	46.04	.03	44.86	.47	46.07	.91	36.20	1.38
1879—JANUARY	51.35	5.16	47.64	5.10	52.08	2.83	44.06	2.67	44.41	3.88	43.01	6.38	28.43	9.94
" FEBRUARY	58.05	4.68	55.24	2.66	50.88	1.78	54.03	2.62	54.22	3.15	52.03	7.16	35.82	11.10
" MARCH	61.52	8.20	58.70	3.80	60.23	2.49	56.64	1.96	57.98	4.33	53.87	8.78	38.11	18.04
" APRIL	61.84	1.66	61.38	2.00	61.98	.75	57.14	2.08	61.75	2.66	57.16	5.94	40.71	6.05
" MAY	61.58	1.58	61.21	1.24	61.71	1.34	58.10	1.12	61.62	1.31	57.88	2.43	41.54	3.19
" JUNE	66.37	.03	70.[illegible]3	.08	72.15	.20	70.15	.20	73.70	.13	69.83	.46	59.86	.30
Total		22.77		14.74		10.11		11.64		17.03		34.98		53.63
1879—JULY	63.[illegible]0	.02	[illegible]		72.60		71.10		75.88		75.91		65.47	.05
" AUGUST	61.20		72.28		77.61		74.13		76.04		77.11		65.30	.04
" SEPTEMBER	62.14		67.92		73.66		68.18		71.71		70.55		59.82	
" OCTOBER	59.84	.7[illegible]	63.93	.6[illegible]	65.63	.83	59.95	.69	60.72	[illegible]	60.37	2.33	44.61	2.33
" NOVEMBER	53.47	2.[illegible]5	55.52	1.57	57.68	1.06	50.24	1.75	49.52	1.77	50.56	3.82	36.87	8.56
" DECEMBER	48.60	4.42	50.15	3.41	49.72	1.94	45.36	1.92	44.51	3.38	43.53	7.8[illegible]	29.68	9.68
1880—JANUARY	46.30	2.3[illegible]	46.0[illegible]	1.94	51.83	1.48	44.40	1.81	43.00	1.52	43.10	3.17	28.10	5.33
" FEBRUARY	48.16	1.92	47.38	1.29	47.70	1.80	45.37	1.46	45.78	1.76	44.65	4.93	27.17	7.89
" MARCH	48.80	1.53	44.78	1.60	54.77	1.45	48.86	.96	49.54	2.13	45.76	2.62	26.36	8.44
" APRIL	[illegible]	10.1[illegible]	56.15	5.87	57.19	6.51	54.22	6.49	55.88	12.29	51.75	13.02	33.14	13.22
" MAY	5[illegible].8[illegible]	.9[illegible]	65.91	1.35	63.54	.91	60.57	.97	63.55	.81	60.27	3.85	40.16	4.15
" JUNE	57.[illegible]1		62.76		64.89		65.14		72.14		68.17		51.54	.08
Total		24.8[illegible]		17.70		15.98		15.96		24.42		41.62		59.76
1880—JULY	69.17		68.11		72.17		70.54		74.48		76.[illegible]8		6[illegible].17	
" AUGUST	60.32		65.12		70.40		67.60		73.32		72.12		59.48	
" SEPTEMBER	59.06		62.72		71.71				69.29		71.30		54.57	.01
" OCTOBER	58.59	.03	57.86		64.60		62.06		62.02		62.72		48.8[illegible]	.82
" NOVEMBER	51.31	.39	48.55	.63	53.96	.65	49.00	.47	48.91	.63	47.75	.35	37.8[illegible]	.66
" DECEMBER	52.90	12.78	47.25	9.03	53.78	7.75	50.00	8.03	50.21	9.27	47.91	13.91	34.4[illegible]	17.66
1881—JANUARY	51.77	8.92	50.66	4.36	54.24	2.40	48.73	2.56	49.03	4.75	46.63	9.61	32.3[illegible]	35.42
" FEBRUARY	54.96	3.91	53.02	3.08	55.92	2.62	52.79	2.87	53.96	4.79	50.05	8.20	33.77	13.27
" MARCH	54.56	.82	57.05	1.06	55.74	1.06	57.68	.75	56.53	1.21	53.42	2.43	34.36	6.73
" APRIL	59.14	2.13	62.01	1.53	63.27	1.93	63.57	.63	63.35	1.59	59.40	1.38	43.16	4.86
" MAY	59.28	.21	66.87		65.41		67.43		68.61		64.29		49.99	
" JUNE	62.59	.70	68.43	.37	67.02	.04	65.72		70.48	.50	66.79	1.40	56.15	3.30
Total		29.89		20.06		16.45		15.31		22.14		37.28		82.71

DATE.	Truckee.		Marysville.		Modesto.		Red Bluff.		Fairfield.		Merced.		Petaluma.		Tulare.		S. Mateo.	
	TEM.	RAIN	TEM.	RAIN.	TEM.	RAIN.	TEM.	RAIN.	TEM.	RAIN.	TEM.	RAIN.	TEM.	RAIN.	TEM.	RAIN	TEM.	RAIN.
1870—JULY	68.35	.13																
" AUGUST																		
" SEPTEMBER																		
" OCTOBER																		
" NOVEMBER		.46		.77														
" DECEMBER	20.40	1.68		1.25														
1871—JANUARY	21.60	4.80		1.60		.49												
" FEBRUARY	28.30	4.22	50.10	1.21		.75												
" MARCH	32.00	3.18	61.80	.29	54.50	.12												
" APRIL	39.20	2.00	67.20	.53		.76												
" MAY	44.20	.28	66.00	1.06	61.00	.09												
" JUNE	56.00	.25	77.90		70.90	.04												
Total		17.00		6.6[illegible]		2.25												
1871—JULY	70.30		82.00		79.50													
" AUGUST	67.10		83.90															
" SEPTEMBER	61.20	.20	74.80		76.10					1.00								
" OCTOBER	44.10	.02	66.00	.09	65.73					2.13								
" NOVEMBER	32.82	4.99	54.50	.72	49.10	.87			59.10	1.56		.80	54.10	1.83				
" DECEMBER	27.10	16.23	52.30	8.08	49.10	4.76			51.80	16.95		3.67	55.70	13.86				
1872—JANUARY	23.60	3.42	50.90	.55	49.10	3.16	50.30	15.83	50.50	5.50		2.16	53.70	6.50				
" FEBRUARY	25.10	10.49	51.97	3.88	47.10	2.20	49.40	7.68		2.00		1.62	53.70	7.69				
" MARCH	28.30	3.63	54.50	2.30	54.20	.83	56.60	1.21		.20	54.90	.36	53.30	1.49				
" APRIL	25.70	4.11	55.40	1.03	58.29	.78	57.70	1.78	58.40	1.09	60.80	.89	57.40	.62				
" MAY	37.60	.60	69.90		75.90		71.20		67.70	.25	75.70		63.10					
" JUNE	49.00	.30	76.70		78.20		77.10	.17	75.30	.82			67.80	.11				
Total		43.99		21.60		12.60		26.6		31.50		9.50		32.10				
1872—JULY	53.00		82.90				84.10		76.10		80.70		65.90					
" AUGUST	53.00		82.90		80.90		77.90	.10	79.40		83.30		65.00	.01				
" SEPTEMBER	50.50		77.30		74.80		74.30	.84	78.30		76.70		62.30					
" OCTOBER	38.70	.7[illegible]	73.70		76.10		70.90	.03	78.90	.02	59.30		57.50	.07				
" NOVEMBER	33.30	3.20	54.10	.10	59.40	.40	54.90	3.08	67.20	2.00	53.80		52.00	1.65				
" DECEMBER	29.90	5.79	51.40	5.82	51.10	3.10	45.60	2.92	53.20	7.29	54.10	5.30	47.60	6.27				
1873—JANUARY	32.90	6.43	52.90	1.75	53.50	1.05	48.10	1.65	57.40	.64	52.80	5.69	49.90	2.54				
" FEBRUARY	24.40	13.05	48.60	4.31	43.80	2.66	46.60	4.10	51.10	3.29	54.60		47.20	3.22				
" MARCH	23.90	2.84	57.80	1.04	51.40	.05	55.10	.72	58.80	1.34	60.00							
" APRIL	38.80	1.42	59.90	.71	54.20	.39	58.80	.14	59.70	.60	64.90							
" MAY	46.30	3.59	70.90	.33	64.20		67.40	.02	63.30		66.50							
" JUNE	55.80	.50	77.10		65.60		76.00	.02	77.40		74.30							
Total		37.60		14.66		7.65		13.62		15.18		10.99		13.76				
1873—JULY	65.80		81.90		83.30		84.50	.05	78.90		74.30							
" AUGUST	52.50		77.00		80.10		79.10		72.70									
" SEPTEMBER	54.90		74.90		80.80		79.20		75.70		63.10							
" OCTOBER	41.10	.11	43.40	.58	67.10		65.60		67.30	.30	61.30			.32				
" NOVEMBER	36.60	.42	57.80	2.39	67.50	.05	61.80	1.29	64.40	.60		.03		1.28				
" DECEMBER	24.20	8.71	47.50	12.46	48.50	3.75	45.20	5.10	53.30	10.35		3.27		10.81			48.04	6.35
1874—JANUARY	21.70	9.54	47.50	5.55	41.90	4.00	47.20	4.29	52.20	5.03		3.50		8.19			48.41	5.22
" FEBRUARY	22.60	6.1[illegible]	49.70	1.63	44.50	1.13	47.50	3.24	52.30	1.26	54.00	1.00	46.90	2.85			48.43	1.32
" MARCH	26.30	9.35	53.60	2.79	55.20	1.00	47.10	.96	51.40	2.17	53.60	.75	48.50	2.32	51.43		50.97	2.16
" APRIL	36.30	2.61	61.80	1.13	68.10	.57	58.10	1.54	59.40	.91	53.40	.40	53.60	1.33	60.38	.26	59.30	.99
" MAY	46.60	1.24	69.40	.34	74.70	1.00	66.40	.61	62.20	.16	65.50	1.65	59.50	.40	73.94		62.81	.79
" JUNE	53.30		76.00				74.60	.04	76.40		77.20		63.60		88.91		67.71	
Total		38.13		26.87		11.50		17.03		20.78		10.30		25.50		.26		16.88
1874—JULY	67.60	.06	79.50		80.10		84.50		75.40		87.10		63.40		[illegible]		64.27	
" AUGUST	59.30	.07	74.00		77.70		82.00	.03	76.60		81.30		62.30		86.40		66.95	
" SEPTEMBER	58.00	.04	72.50		72.90	.75	78.60		80.20	.08	74.60	.47	64.90		84.83		63.16	
" OCTOBER	45.80	3.64	64.40	1.73	63.60	1.32	66.50	4.28	68.00	1.78	64.60	1.84	58.70	2.48	76.94		57.60	2.46
" NOVEMBER	35.70	3.54	54.40	4.14	53.40	1.88	53.50	2.33	60.20	7.05	54.10	1.80	53.20	5.70	63.16		53.08	3.71
" DECEMBER	28.70	.69	45.10	.34	43.30	2.46	47.60	.53	48.20	.40	43.90		46.40	.15	39.11		46.76	.07
1875—JANUARY	26.90	8.50	45.60	4.21	46.50	.20	47.20	3.20	45.90	7.17	46.40	3.95	45.90	6.01	44.87	4.75	46.09	4.62
" FEBRUARY	27.70	.20	50.50	.[illegible]9	47.60		53.00	.81	50.80	.65	50.80	.15	48.90	.55	46.31	.20	48.49	.56
" MARCH	32.00	1.20	52.00	1.20	51.80	.88	51.70	2.00	58.60	1.58	52.30	.97	49.40	1.35		.50	53.16	.82
" APRIL	45.00	.90	65.00		64.90	.08	66.70		65.70		63.30	.20	56.70			.15	57.11	
" MAY	51.70	.40	71.80	.06	71.90		70.80		70.10		71.50		63.40	.30	70.70	[illegible]	61.82	
" JUNE	56.40	1.81	76.50	1.97	76.50	.43	76.80	.43	67.80	.55	75.80	1.02	65.00	1.64	78.40	[illegible]	61.24	.89
Total		21.46		13.84		8.60		13.61		19.26		10.40		18.18		6.06		13.13
1875—JULY	66.13	.40	81.98		81.27		88.93		71.07		83.92		62.39		88.94		59.70	
" AUGUST	62.99	.03	76.59		78.07		87.22		78.58		79.79		63.26		81.63		58.10	
" SEPTEMBER	56.32		73.06		74.03		81.31		72.35		75.13		59.12		75.30		57.41	
" OCTOBER	50.44	.62	70.10	.02	70.33		74.24	.36	62.29	.65	71.15		61.06	.10	69.43		57.32	
" NOVEMBER	37.99	9.13	55.80	3.56	56.56	5.98	56.63	5.21	52.04	2.03	55.47	5.83	55.24	5.48	52.73		54.32	7.85
" DECEMBER	32.24	4.2[illegible]	48.95	2.41	48.15	1.42	51.16	1.26	46.11	3.00	48.21	.73	49.61	2.80	43.13	.33	49.95	3.15
1876—JANUARY	22.83	10.94	45.71	2.79	45.06	2.38	46.28	6.65	47.55	5.76	43.24	2.90	45.83	6.36	42.85	1.54	45.85	6.30
" FEBRUARY	28.08	5.00	50.49	3.32	50.01	1.55	50.15	4.63	47.26	2.54	44.33	1.38	49.60	5.02	42.57	1.23	48.71	4.61
" MARCH	30.70	7.72	53.22	4.06	53.17	1.71	52.80	3.94	53.92	1.76	46.95	1.54	52.94	4.32	47.64	1.92	52.69	4.16
" APRIL	38.61	1.91	60.57	1.05	60.76	.35	60.06	1.22	59.91	.96	57.96	.17	56.33	1.19	58.68		55.81	.20
" MAY	45.88	.9[illegible]	66.95	.15	68.38		67.53	1.07	72.14	.80	65.56	.13	59.20	.32	76.70		59.79	
" JUNE	59.99	.01	79.33		81.70		82.10	.27	74.55		79.50		70.64		86.54		66.62	
Total		40.96		17.36		13.39		24.61		17.50		12.68		25.59		6.02		26.27
1876—JULY	62.59	.05	76.35	.11	80.11	.15	80.33	1.74			78.81	.17	64.01		88.02		60.83	
" AUGUST	60.20	.03	74.83	.06	78.15		81.68	.35	70.50		77.13		63.55		85.16		61.66	
" SEPTEMBER	54.29	.03	72.23		74.18		78.07	.42	74.54		74.06		62.70		7[illegible].23		60.56	
" OCTOBER	45.49	3.64	65.81	4.15	65.86	1.38	59.54	2.09	67.33	2.53	65.38	.72	59.17	5.20	61.75	.05	57.54	2.20
" NOVEMBER	37.61	.07	58.48	.40	54.36		59.14	.32	56.43	.28	54.27	.09	53.41		48.95		54.58	
" DECEMBER	31.63		49.75		46.01		51.88		45.89		47.05		46.20		41.[illegible]2		47.63	
1877—JANUARY	27.64	9.45	49.60	3.60	50.43	1.10	51.15	2.59	51.44	4.12	50.12	1.14	48.69	5.24	49.14	1.70	48.70	3.26
" FEBRUARY	33.95	.39	57.15	1.57	55.31	.08	56.59	3.39	53.07	1.87	56.32	.03	51.65	1.44	54.14	1.50	53.61	.75
" MARCH	41.95	1.84	61.24	.92	60.72	.80	61.37	3.18	58.68	.52	62.05	.53	54.44	.42	62.18	.10	55.54	1.01
" APRIL	40.21	1.63	64.54	.12	62.64	.81	63.64	1.44	61.36	.10	62.10		55.77	.12	64.89	.30	55.49	
" MAY	45.59	1.12	68.92	.81	67.42	.43	68.49	.73	66.76	.09	67.18	.52	59.39	.27			56.40	.03
" JUNE	57.35	.36	78.94	.4[illegible]	79.21		79.95	.76	74.78		79.34		67.05		81.99		66.40	
Total		18.01		12.16		4.25		15.01		9.51		3.20		12.69		3.65		7.34
1877—JULY	66.55		79.67		80.99		83.31		75.95		82.17		64.73	.06	87.98	.07	63.80	
" AUGUST	62.53		78.82		77.70		79.91	.03	71.49		80.49		62.39		87.39		61.19	
" SEPTEMBER	58.92	.04	76.02		75.63		79.62		76.61		77.02		64.50		81.80		62.80	
" OCTOBER	46.54	.30	63.62	.50	63.80	.27	67.05	1.87	68.51	.16	63.31	.06	58.61	.75	71.25		57.91	.80
" NOVEMBER	39.72	1.66	55.20	1.68	53.66	.84	54.58	4.24	61.74	1.07	54.63	1.17	52.17	1.94	56.62	.27	52.59	.81
" DECEMBER	30.59	.24	51.23	1.55	47.66	1.39	45.76	1.63	49.21	1.33	48.30	.85	48.82	3.13	47.78	1.30	49.85	1.34
1878—JANUARY	29.45	5.97	53.78	9.47	49.08	3.70	45.60	20.73	54.09	10.91	49.18	3.35	49.19	15.62	48.51	1.72	50.85	9.87
" FEBRUARY	30.44	11.80	55.35	5.32	50.91	2.76	47.48	16.66	5[illegible].84	8.66	50.67	2.78	51.13	11.99	51.14	2.50	50.53	9.74
" MARCH	36.66	2.07	61.27	3.53	57.09	1.80	52.82	4.14	60.69	3.28	54.90	1.89	54.20	4.49	55.57	.73	52.69	3.58
" APRIL	42.00	.80		1.30	61.59	.75	58.13	2.48	66.71	.87	58.23	1.71	57.38	.91	59.21	1.14	56.00	1.29
" MAY	51.69	1.17	68.98	.39	68.33		65.26	.90	70.07	.22	66.91		60.25	.34	70.40		60.82	.06
" JUNE	63.30	.10	77.46		77.57		79.41		72.07		77.62		66.61		81.90		64.47	
Total		24.15		23.74		11.81		[illegible]		23.50		11.81		39.23		7.73		27.40
1878—JULY	65.68		76.84		77.36		80.81		72.58		79.41		66.92		82.98		66.36	
" AUGUST	67.78	.28	78.20		78.00		86.48		71.83		78.60		62.15		83.68		66.33	
" SEPTEMBER	58.05	.23	71.79	.62	74.51		72.04	.34	70.60	.69	72.00		60.35	.23	76.10		65.36	.48
" OCTOBER	47.14	.95	67.30	.64	63.05	.42	65.46	1.50	67.29	1.33	64.14	.25	55.86	1.18	68.19	.38	63.87	.80
" NOVEMBER	40.85	2.14	59.82	.60	54.50	.33	54.70	1.66	58.65	.61	55.22	.12	53.35	.87	58.73	.07	57.13	.72
" DECEMBER	29.80	.50	50.05	.49	44.22	.57	43.79	.79	46.70	.16	46.90	.08	44.55	.40	48.32	.07	48.96	.27
1879—JANUARY	25.07	7.70	44.95	1.76	44.41	1.62	39.96	3.20	50.13	3.60	46.21	.96	44.03	3.55	45.18	.65	42.28	3.86
" FEBRUARY	33.83	2.68	54.53	2.93	55.29	1.26	48.81	3.77	57.15	4.06	54.95	1.32	50.42	4.78	52.36	.10	53.94	3.48
" MARCH	36.30	5.25	56.00	3.08	50.98	2.11	53.14	5.57	60.22	7.70	58.30	1.19	52.67	7.48	59.05	.27	58.15	5.85
" APRIL	40.45	1.55	5[illegible].36	3.76	64.72	1.31	57.15	2.14	64.53	1.39	62.91	1.35	53.30	1.63	65.85	1.16	60.81	1.24
" MAY	46.05	.45	64.77	1.79	67.04	.71	59.84	2.11	62.12	1.48	63.76	.21	54.12	1.54	68.41	.30	60.83	1.58
" JUNE	61.68		75.21	.09	81.12	.15	80.50	.32	73.69	.15	77.61	.10	62.61		82.95	.07	68.69	.09
Total		21.73		15.76		8.48		21.40		21.17		5.83		21.62		3.07		18.37
1879—JULY	66.84		78.10		82.46		80.4[illegible]	.08	72.4[illegible]		79.19		60.60		86.49		65.64	
" AUGUST	66.45		82.14	.03	85.26		83.90	.37	76.19		83.90		62.06		87.84		67.99	
" SEPTEMBER	69.80	.07	79.13		75.86		77.8[illegible]		72.25		77.02		58.63		79.44		64.08	
" OCTOBER	43.54	4.20	65.52	1.04	63.53	1.07	64.1[illegible]	.40	64.62	.59	64.06	.60	57.11	.28	65.02	.1[illegible]	61.12	.52
" NOVEMBER	33.11	3.79	54.98	2.83	52.29	3.05	50.2[illegible]	4.31	56.60	1.84	53.01	1.67	47.94	3.90	52.04	3.[illegible]	51.81	1.77
" DECEMBER	22.96	4.98	48.70	3.60	45.95	1.74	44.11	9.82	49.53	5.3[illegible]	45.55	1.08	43.86	3.93	4[illegible].82	1.1[illegible]	46.03	3.14
1880—JANUARY	21.77	2.95	44.41	1.27	44.09	.4[illegible]	44.24	1.9[illegible]	50.48	1.16	43.75	.69	43.03	2.72	40.71	.59	43.14	2.51
" FEBRUARY	21.75	4.65	45.98	1.25	46.46	1.31	45.34	3.64	50.29	1.10	46.28	2.06	44.99	1.57	44.06	2.37	45.48	1.64
" MARCH	25.91	4.65	51.59	.66	51.51	.76	47.25	1.78	51.26	.96	50.88	.64	45.96	1.77	46.69	.24	49.93	2.13
" APRIL	35.27	12.74	52.02	7.23	58.35	4.11	52.84	6.73	54.58	7.07	57.55	4.71	50.05	9.74	59.70	2.62	55.10	8.70
" MAY	45.95	2.50	64.74	.99	67.07	.51	61.63	1.17	62.75	.85	67.82	.48	56.92	1.12	71.92	.20	63.03	.76
" JUNE	58.94		72.84		75.12		73.06		65.19		74.31		57.89		78.10		65.93	
Total		40.53		18.93		12.88		30.26		18.94		11.89		25.03		7.65		21.17
1880—JULY	65.18	.16	81.69		80.73		85.04		69.37		81.38		60.88		88.10		67.[illegible]4	
" AUGUST	63.43		79.63		79.71		81.23		65.6[illegible]		77.33		61.76		84.24		64.48	
" SEPTEMBER	57.56		72.40		75.01		75.84		62.11		76.71		61.56		78.19		64.99	
" OCTOBER	48.57		68.47		64.09		65.89	.05	62.80		63.76		59.52		60.23		59.55	
" NOVEMBER	30.31	.45	56.18	.05	49.85	.60	50.66	.21	54.07	.02	51.46	.6[illegible]	49.22	.07	47.14	.44	49.28	.59
" DECEMBER	33.06	9.51	58.13	6.99	52.11	3.55	46.32	12.24	51.11	10.80	49.29	4.6[illegible]	50.49	9.39	45.77	4.50	50.83	11.37
1881—JANUARY	29.38	5.71	52.67	4.33	40.38	1.39	47.2[illegible]	10.14	47.63	7.17	50.12	3.4[illegible]	47.92	8.13	46.46	1.90	50.82	4.26
" FEBRUARY	34.50	2.13	56.27	3.90	54.19	1.63	51.02	2.90	52.66	3.46	55.09	1.6[illegible]	51.33	3.06	49.85	.95	51.72	2.34
" MARCH	35.87	1.86	63.76	.83	57.02	.70	54.81	.26	55.21	1.06	55.63	.8[illegible]	52.44	.96	54.06	1.33	50.83	.80
" APRIL	49.96	.49	64.36	1.07	66.65	.53	63.99	2.10	63.15	1.41	64.28	.34	60.41	1.65	66.3[illegible]	.65	56.48	1.58
" MAY	54.64	.40	71.80		71.67		71.17	.25	67.74	.10	70.44		61.55		71.81	.12	59.18	.08
" JUNE	59.99	1.26	75.42	.35	73.45		74.06	.80	72.43	.50	74.33	.08	64.06		76.06		60.51	.22
Total		21.97		17.43		8.40		28.95		24.52		11.59		28.20		9.98		21.19

Rainfall and Temperature in California.

The season is proving more generous than some dared to hope, and many districts of the State are reporting enough rain for present use. In other parts, however, the slight moistenings are soon dissipated by sun and wind and the doubts of the outcome of the season still prevail. Every one is talking of the prospects and making comparisons with those which have preceded it. To furnish comprehensive data for local meteorological studies we give herewith the most complete report of the rainfall in California ever published. In 1880 we gave a similar table, but this table is brought down to the close of the season of 1881, and is therefore more valuable. We are allowed to compile the data for the table from the records of the C. P. R. R; the meteorological department of the corporation being attached to the office of the Chief Engineer. Mr. Montague, and especially entrusted to W. S. Potter, who is an enthusiastic and careful statistician. The tables will not only serve a local purpose in the districts specified, but are of general interest as setting forth such comprehensive information concerning the temperature and rainfall in the different parts of the State.

The following will show the positions of the stations with respect to the railroad lines: San Francisco, Oakland, Niles, Livermore, Stockton, Sacramento, Auburn, Cisco and Truckee are on the main line of the C. P. R. R.; Marysville, Red Bluff and Redding are on the Oregon branch of the C. P. R. R.; Modesto, Merced and Fresno are on the Visalia branch, C. P. R. R.; Martinez and Williams are on the N. R. R.; Napa, Fairfield and Woodland are on the Cal. P. R. R. and branches; San Mateo, San Jose, Gilroy, Pajaro, Salinas and Soledad are on the Northern Division of the S. P. R. R; Tulare, Delano, Sumner, Caliente, Mojave, Los Angeles and Colton are on the main line S. P. R. R.; Ione is on the Amador Branch Railroad; Anaheim is on the San Diego branch S. P. R. R; Petaluma is on the San Francisco and N. P. R. R. line; and Santa Cruz is on the Bay and Coast Railroad line.

A careful study of the figures given in these tables will show those points which are the most favorable for certain diseases. The relative conditions of different localities has been considered by our State Board of Health with this object in view. The Secretary, Dr. F. W. Hatch, divides the State into four regions, more or less distinct, in regard to climate.

First, the coast and the valleys bordering thereon; second, the interior valleys, as the Sacramento and San Joaquin; third, the Coast Range mountains; fourth, the Sierra Nevada mountains. Beginning with the climate of the coast and the coast valleys, Dr. Hatch starts at San Francisco with a mean annual temperature of 55.23° Fahr., and follows the coast to San Diego with a mean temperature of 62.11° Fahr., including a narrow belt of country extending along the coast for a distance of 479 miles. The climate of this extensive district presents certain features in common, though varying in degree—a winter season mild and agreeable, a certain amount of fog, and cool wet winds in the summer. Taking San Francisco as an extreme, we find some modifications in each of these extremes as we go southward. The number of foggy days may be said to become less, the severity of the summer winds is subdued, the temperature somewhat higher and more equable, the rainy season shorter, and the rainfall less abundant; and intervening between these two seasons of summer and winter, a short season representing spring, which becomes more and more attractive, inviting by the mildness of its temperature, the purity of its atmosphere, the early freshness and beauty of the vegetation, and combining all these qualities which have given to this region its popular reputation as a resort for health.

Of the climate of the great central valleys, the Sacramento and San Joaquin, an extensive district, stretching from the 35th to the 41st parallel, with an average width of 50 or 60 miles, it is said: The meteorology of this vast region presents certain features common to every part. As compared with the coast region, the atmosphere may be said, in a general way, to be warmer and dryer during summer, not much subject to fogs, a high temperature during the day, with a considerable reduction at night. Although giving this region of our State full credit for its many charms and excellencies, Dr. Hatch concludes that "in the prolonged high temperature, the sudden changes which occur in places subject to the influence of the ocean winds (which sweep through the Straits of Carquinez and diverge north and south), the comparatively greater humidity of the atmosphere, and the presence of malaria, is found a combination of circumstances which would seem to render this interior valley region ineligible as a summer residence for the consumptive."

Concerning our mountain climate, both of the Coast Range and the Sierra Nevada, Dr. Hatch speaks at length and with definiteness. We have space only for his general comparisons. As compared with the great valleys, the mountain climates, as a whole, possess a less prolonged season of high temperature, a lower relative humidity and comparative exemption from malarial influences. As compared with the coast region, the mountain climates have a lower relative humidity, a greater exemption from winds and fogs, the advantages of altitude and a more invigorating atmosphere. These points of comparison refer to climates in the different regions during the summer months.

S. Jose.		Gilroy.		Pajaro.		Salinas.		Soledad	
TEM.	RAIN.	TEM.	RAIN.	TEM.	RAIN.	TEM.	RAIN	TEM.	RAIN
....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....
....	....	....	....	(Up	to	Dec.	1.55)	....	....
47.38	2.82	45.98	6.57	46.32	7.07	51.51	4.65	48.36	2.05
46.79	2.61	46.52	5.22	47.87	4.77	50.95	2.92	46.84	1.62
49.33	.77	46.52	2.04	46.71	1.45	49.71	1.26	47.64	.32
51.80	2.83	48.96	3.15	47.85	3.14	51.49	2.18	48.94	1.73
58.80	.87	57.29	.95	52.94	1.66	57.24	.70	55.43	.40
67.66	.21	66.83	.16	54.28	.40	62.32	.35	66.45	.23
76.07	....	72.44	....	57.30	....	64.21	....	72.44	....
	10.11		18.09		18.49		13.61		6.35
71.11	....	71.06	....	55.54	....	63.71	....	76.99	....
68.73	....	68.48	....	57.31	....	64.66	....	68.84	....
1.03	.10	66.27	....	55.28	....	64.95	....	67.20	....
64.26	1.81	57.68	3.55	54.94	2.83	60.96	1.83	66.33	.16
56.82	1.91	51.16	2.00	51.79	3.00	54.19	.88	51.06	.13
51.88	.08	39.82	.04	43.22	....	46.11	....	42.37	....
49.76	2.75	43.23	7.70	47.13	4.88	47.77	4.50	45.50	4.09
53.30	.41	45.23	.75	50.21	.20	56.46	.15	52.00	.20
54.43	.39	48.42	.69	51.46	.88	50.58	.69	52.54	.40
62.07	....	63.56	....	54.60	.03	54.94	....	57.53	.04
63.68	....	75.52	....	61.19	.09	....	....	69.40	....
63.53	.45	70.18	.30	61.30	.50	....	....	71.20	....
	7.90		15.12		12.41		8.05		5.01
68.87	....	77.29	....	58.63	....	....	....	70.10	....
70.11	....	68.55	....	58.13	....	64.66	....	66.98	....
64.72	....	63.83	....	56.03	....	60.22	....	[illegible]	....
65.54	....	63.33	....	55.27	....	58.39	....	67.95	....
....	....	52.27	11.75	56.01	7.16	54.44	4.19	58.12	2.80
53.10	1.51	48.09	1.88	53.04	2.13	49.15	1.75	53.40	.59
42.16	4.08	43.16	6.75	48.38	7.80	47.18	5.85	43.69	5.26
49.61	3.41	46.00	3.97	53.01	4.13	51.08	3.14	49.83	3.45
51.75	3.11	52.90	5.93	53.03	4.72	49.24	4.23	58.41	3.24
57.92	.41	60.82	.76	57.02	.23	56.86	....	59.92	....
59.24	.25	63.68	....	58.87	....	59.72	....	67.07	....
69.57	....	68.90	....	63.61	....	63.09	....	77.30	....
	12.77		31.04		26.17		19.16		15.3
65.23	....	63.40	....	63.81	....	63.91	....	70.77	....
66.11	....	67.10	....	58.08	....	61.76	....	64.55	....
65.21	.08	65.81	....	58.19	....	62.41	....	68.89	....
64.00	1.35	61.88	1.25	57.93	1.60	59.75	.80	57.75	....
55.49	.02	54.72	....	59.47	....	52.88	....	47.90	....
47.63	....	48.83	....	50.88	....	49.99	....	50.85	.20
50.63	2.28	51.32	3.75	52.70	2.83	54.59	2.28	48.03	.87
51.43	.48	54.76	....	56.85	.22	55.98	....	54.65	.25
55.79	.78	59.12	.82	59.27	.72	57.76	.62	55.46	.28
55.12	....	59.01	.27	60.17	.16	54.99	.09	55.78	1.05
57.20	.05	61.83	.44	58.96	....	59.39	.11	58.17	....
63.04	....	69.37	....	64.19	....	65.12	....	61.17	....
	4.99		6.53		5.53		3.90		2.65
67.40	....	71.08	....	64.00	....	64.31	....	64.69	....
64.87	....	67.69	....	64.65	....	61.84	....	66.91	....
63.91	....	69.49	....	60.78	....	64.43	....	60.43	....
58.23	.37	58.04	.10	58.32	....	56.92	.30	55.04	....
54.05	.85	52.49	1.14	57.27	1.26	57.57	.86	50.06	.95
51.93	1.87	47.86	1.56	54.33	1.95	51.33	2.39	41.82	1.42
53.61	5.53	49.28	8.98	58.33	10.27	51.63	7.06	44.71	3.69
52.11	6.94	49.80	11.48	51.84	10.26	52.03	8.58	43.70	4.63
54.05	2.22	54.44	3.24	54.40	3.57	54.02	2.87	49.36	.73
54.84	1.48	57.41	1.62	55.19	1.70	55.80	1.69	51.73	.74
59.08	.02	62.85	....	58.28	....	58.43	....	59.54	....
64.77	....	64.14	....	59.67	....	58.78	....	62.98	....
	19.28		28.12		29.01		23.75		12.16
64.79	....	65.26	....	58.96	....	60.26	....	64.65	....
65.73	....	66.42	....	59.41	....	59.57	....	63.75	....
62.22	.03	65.58	.20	58.93	.50	59.69	.02	66.30	....
56.40	.20	61.89	.88	58.21	.98	61.34	.63	59.40	.06
52.78	.27	53.93	.70	54.40	.20	54.74	.20	51.86	.05
46.07	.38	45.34	.42	47.76	.30	50.28	.29	44.98	1.44
46.86	2.11	44.61	3.80	47.59	3.99	48.18	2.18	47.80	.63
52.84	1.47	53.17	4.02	52.66	4.73	53.31	2.37	55.76	.34
55.89	1.89	56.64	3.98	55.22	3.84	56.41	1.52	59.70	1.04
56.53	1.34	58.50	1.47	54.55	1.47	57.53	1.39	60.53	.59
57.82	.73	60.64	1.34	54.49	1.28	57.51	.64	60.25	....
66.07	.06	66.43	.15	60.11	.08	57.83	.08	64.89	....
	8.48		16.96		17.37		9.32		4.15
63.31	....	66.33	....	59.07	....	57.82	....	62.30	....
76.08	....	68.12	....	61.62	....	60.28	....	66.62	....
61.00	....	65.79	....	61.22	....	60.24	....	64.16	....
59.50	.87	60.85	1.00	58.55	.97	56.54	.92	63.85	.45
52.40	1.79	50.59	1.68	52.13	1.68	51.72	1.01	61.02	.47
46.50	2.99	44.98	3.63	48.06	2.88	49.47	2.15	47.04	1.57
45.00	1.48	43.69	2.38	43.96	1.43	46.69	1.56	50.62	.73
45.65	1.35	44.10	1.74	44.50	1.43	47.07	1.02	49.91	1.05
48.93	.93	46.80	1.84	47.05	1.79	48.44	1.51	51.93	.87
52.88	3.66	53.72	9.48	52.06	6.00	53.91	3.74	57.70	2.19
59.01	.67	60.21	.65	56.06	.36	58.47	.37	64.41	.23
62.10	....	63.47	....	57.08	....	55.93	....	64.12	....
	13.77		22.40		16.54		12.28		7.56
64.65	....	64.81	....	56.73	....	57.12	.05	67.37	....
65.67	....	64.80	....	61.03	....	58.82	....	66.73	....
62.06	....	[illegible]	....	56.60	....	56.96	....	66.08	....
58.93	....	59.42	....	54.68	.05	57.40	....	63.22	....
48.54	.49	47.03	.46	49.22	.48	51.48	.59	52.86	.18
52.60	5.60	50.70	12.33	52.78	8.91	52.16	4.37	51.28	3.14
51.65	2.12	[illegible]	6.84	51.56	5.58	52.10	3.14	50.23	1.52
53.19	2.04	53.34	1.95	54.49	2.43	54.03	2.35	55.40	.61
54.46	.81	54.24	1.14	53.16	.99	53.96	1.2	55.22	1.14
59.96	1.28	59.75	.59	58.73	.95	57.51	.44	63.04	.09
[illegible]	....	61.35	....	61.36	....	59.35	....	65.65	....
60.57	.12	65.07	.11	62.03	.52	61.74	.33	63.22	.10
	12.46		23.42		19.91		12.48		6.78

Redding.		Delano.		Sumner		Los Angeles.		Caliente	
TEM	RAIN.	TEM.	RAIN	TEM.	RAIN	TEM.	RAIN	TEM.	RAIN.
....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....
47.30	.75	....	....	44.50	.01	51.50	.02	....	....
47.20	6.21	....	....	46.18	3.18	53.31	12.65	....	....
54.40	.16	....	....	51.89	....	59.36	.10	....	....
51.40	1.41	....	....	53.82	.15	59.22	.02	....	....
68.40	.01	....	....	70.40	....	64.75	....	....	....
71.90	.14	76.40	.07	....	....	73.62	....	....	....
78.50	.24	79.40	....	89.60	....	76.47	....	....	....
	8.92		.07		3.3		12.79		
87.13	....	86.73	....	93.04	....	75.53	....	....	....
85.66	....	90.09	....	90.70	....	76.18	....	....	....
74.10	....	74.83	....	84.17	....	71.85	....	....	....
72.52	2.11	70.74	....	73.68	....	72.54	....	....	....
53.32	13.31	56.63	5.49	57.32	2.14	51.86	5.17	....	....
49.61	9.13	54.88	.55	50.31	.56	55.44	.48	....	....
43.40	11.38	47.71	1.23	47.15	.74	51.84	7.16	46.00	.40
48.54	8.00	48.41	1.82	50.03	.76	57.00	8.30	51.47	2.02
51.40	8.85	60.91	.82	55.40	.80	59.31	8.32	52.48	1.66
57.79	1.77	65.77	....	69.57	....	65.59	.50	62.59	.43
65.60	2.90	71.11	....	74.18	....	71.99	....	71.09	....
79.52	.70	81.33	....	87.54	....	78.76	....	84.66	....
	58.15		6.91		5.00		21.93		4.51
81.19	.63	80.39	....	91.18	....	83.30	....	85.20	....
77.82	.65	85.09	....	84.39	....	77.76	....	84.00	....
72.60	1.20	84.00	....	77.05	....	70.71	....	78.52	....
67.93	5.60	70.16	.32	71.47	.07	68.78	.40	68.75	.52
58.53	.40	62.83	....	52.58	....	62.35	....	59.75	....
50.27	....	58.67	....	45.99	....	58.95	....	53.85	....
49.56	6.59	57.22	.55	46.27	1.26	59.26	2.63	50.37	1.08
52.85	3.78	60.89	.49	57.40	.28	62.23	....	61.02	.47
57.24	4.43	63.74	1.63	65.79	.75	63.58	.00	67.24	1.08
57.76	.57	61.81	1.02	63.27	.49	66.12	.25	64.24	1.22
65.27	1.41	70.40	.23	66.19	....	66.76	.33	69.11	4.83
79.73	.75	79.74	....	83.89	....	78.46	....	82.11	....
	26.01		4.15		2.85		4.61		9.25
83.32	....	78.80	....	88.20	....	74.33	....	87.03	....
81.06	.07	85.24	....	88.54	....	71.64	....	81.93	....
80.32	....	81.57	....	80.05	....	71.62	....	79.11	....
65.78	1.63	68.37	....	67.83	....	68.36	.86	66.28	....
52.01	7.76	58.47	.36	54.04	.71	63.32	.45	57.86	.84
47.97	4.41	51.06	.56	53.76	1.61	57.17	2.87	56.69	2.31
46.11	22.69	52.40	1.25	53.10	1.57	55.94	2.42	57.71	3.81
47.35	13.78	54.26	1.96	52.37	1.50	56.46	6.49	54.02	4.47
52.74	7.20	56.07	1.55	61.19	1.45	58.41	2.30	61.03	2.69
59.99	1.66	59.53	1.41	62.42	1.14	59.81	1.53	61.91	3.20
68.02	.74	73.51	....	71.52	....	64.51	.32	73.05	.03
81.59	.05	84.95	....	79.18	....	67.02	....	82.95	....
	59.99		7.09		7.98		17.24		17.35
85.76	....	83.98	....	85.07	....	71.02	....	85.87	....
86.42	....	[illegible]	....	82.87	....	71.51	....	87.15	....
76.50	1.32	82.06	....	74.97	....	72.04	....	77.20	....
67.94	2.15	70.32	.07	64.42	....	64.85	.10	66.04	.42
57.00	2.59	56.66	....	54.42	....	60.15	....	59.52	.10
46.27	.59	45.38	....	41.97	....	55.07	1.52	48.70	.10
48.44	4.20	41.21	.18	44.45	.04	52.32	1.47	51.71	.20
51.51	4.81	51.73	.10	57.26	.12	[illegible]	.69	55.71	.34
55.79	10.54	62.11	.07	63.13	.11	61.51	.26	62.33	.33
60.14	6.82	64.75	.93	68.06	1.01	61.94	.95	64.40	1.43
59.80	3.56	65.06	.06	69.62	....	65.52	.19	64.55	.20
76.38	.48	85.12	....	84.52	....	69.83	....	81.75	.04
	37.06		1.41		1.28		8.18		3.16
85.06	.03	89.78	....	84.96	....	69.96	....	84.62	....
87.22	.11	92.38	....	87.15	....	72.81	....	86.77	....
79.45	....	84.02	....	79.37	....	71.28	....	80.82	....
64.39	.75	70.51	.43	65.44	.49	68.80	.72	68.45	1.08
52.31	5.96	57.05	.74	55.64	.24	63.26	2.05	53.31	1.77
43.13	10.85	53.34	1.16	47.94	1.73	53.73	3.89	47.97	3.48
42.49	4.05	48.38	.58	42.54	.66	52.99	.76	45.82	2.46
46.54	2.21	52.63	2.97	45.06	1.15	53.33	1.13	45.69	1.53
46.61	1.62	56.01	.30	52.11	.25	55.39	1.16	52.58	1.09
54.80	9.73	64.48	2.40	65.08	1.08	61.21	3.22	59.84	3.53
67.16	1.32	73.31	.20	74.94	....	72.07	.10	66.87	.23
78.51	....	82.00	....	81.90	....	68.77	....	80.36	....
	36.63		8.78		5.60		13.03		15.17
86.65	....	88.81	....	80.16	....	67.88	....	86.84	....
77.96	....	87.96	....	86.17	....	73.47	....	85.56	....
77.20	....	84.06	....	77.87	....	68.62	....	79.53	....
62.64	.10	72.76	....	65.18	....	65.19	.10	65.55	....
50.89	.13	53.82	.05	48.11	....	59.21	.62	50.71	.35
47.31	18.39	41.83	2.60	48.23	1.03	55.61	5.52	52.90	3.56
47.94	14.64	[illegible]	1.85	47.53	.60	53.42	1.13	54.27	1.61
52.33	9.09	55.34	.60	55.11	.58	60.47	.35	54.84	1.54
54.16	.99	57.95	1.10	60.58	.57	60.03	1.84	57.58	1.91
67.55	5.63	66.46	.50	68.92	.58	65.84	.44	67.15	.64
70.01	.71	74.27	.05	75.14	.23	61.21	....	73.04	.19
71.82	1.09	77.34	.75	80.53	....	79.88	....	78.33	....
	50.77		6.75		3.59		10.00		9.80

Mojave		Colton.		Napa.		Woodland.		Williams.	
TEM.	RAIN.	TEM.	RAIN.	TEM	RAIN.	TEM.	RAIN	TEM.	RAIN
....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....
56.11	....	58.94	....	52.94	....	53.88	....	59.80	....
50.7	....	53.10	....	47.54	....	46.61	....	48.48	....
49.64	.85	50.04	1.64	50.32	5.88	49.71	3.07	50.77	2.10
55.61	....	54.28	....	51.29	1.59	54.64	1.31	55.66	1.15
61.41	.01	59.76	1.72	56.39	.58	60.87	.41	60.9	.33
60.51	....	59.43	1.00	56.25	.50	61.69	.03	64.96	.05
68.49	....	63.06	1.58	59.91	.69	65.71	.31	70.18	.25
82.84	....	76.67	....	68.69	.04	77.10	....	80.30	....
	.86		5.94		9.25		5.1		3.94
99.90	....	80.85	....	68.48	.05	80.14	....	82.07	....
83.80	....	75.34	....	64.16	....	76.10	....	79.25	....
77.35	....	76.11	....	66.19	....	74.71	....	77.08	....
75.52	....	68.06	.07	56.47	.53	59.85	.79	63.61	.82
53.77	.20	56.13	.35	54.40	1.97	54.88	1.04	53.54	.93
50.42	2.38	50.82	1.93	47.94	1.96	48.63	1.01	46.55	.82
51.77	1.22	49.32	1.94	49.90	14.18	48.66	8.17	46.88	8.79
49.84	1.74	51.32	5.16	52.38	10.52	50.70	8.36	50.33	6.75
56.20	.30	59.57	1.38	55.91	4.33	56.36	3.83	55.36	2.29
57.01	.76	61.47	2.09	60.84	.90	61.55	1.47	69.79	.64
63.35	....	72.30	.71	66.15	.25	67.35	.65	68.05	.50
76.19	.02	75.78	....	71.09	....	75.41	....	79.18	....
	6.62		14.53		34.69		25.32		21.54
85.02	....	83.31	....	72.82	....	76.04	....	79.06	....
84.53	....	80.63	....	70.94	....	75.67	....	79.55	....
77.77	.29	73.55	....	70.03	1.49	68.39	.17	72.51	.11
67.71	....	67.00	.24	62.09	1.91	63.24	.22	64.40	.37
56.79	.32	57.01	.30	54.69	.83	54.50	.89	53.64	.73
48.3	1.07	51.94	1.68	41.01	.37	45.31	.42	45.00	....
42.19	.62	46.44	1.79	46.09	4.06	44.41	3.03	43.17	1.80
53.39	.05	56.05	.74	52.32	6.00	54.26	3.20	53.01	1.43
58.71	....	65.08	.03	57.07	8.36	57.74	4.74	56.79	2.37
62.73	.22	65.94	1.75	62.94	1.56	61.66	1.91	61.53	1.48
66.33	....	68.40	.10	64.01	1.50	64.34	1.68	53.51	.85
80.14	....	73.68	.08	73.50	.07	76.03	.24	79.75	.13
	2.57		6.71		26.15		16.50		9.27
87.51	....	79.30	....	73.77	....	78.39	....	81.09	....
89.41	....	86.14	....	71.73	....	79.59	....	82.45	.06
83.93	....	79.66	....	67.97	....	74.60	....	75.25	....
71.45	....	69.48	.13	62.79	.47	64.59	.21	62.61	.13
55.42	1.42	55.85	1.15	51.66	2.56	53.34	2.09	50.14	2.31
47.26	4.19	51.60	2.49	49.61	4.76	44.98	3.69	43.68	2.81
48.26	.45	52.41	.99	46.21	2.73	44.87	1.04	43.43	.78
46.15	.52	49.73	.76	45.46	1.38	47.15	1.60	44.90	.77
49.83	.72	53.13	1.05	50.35	1.67	50.03	.93	48.09	.43
58.15	.61	61.28	2.19	58.05	11.87	56.32	6.96	56.07	3.67
68.38	....	73.86	....	66.85	1.16	65.20	.35	64.83	.82
80.61	....	78.41	....	67.44	....	73.28	....	74.90	....
	7.91		8.76		26.60		16.87		11.78
86.82	....	80.33	....	70.30	....	78.72	....	82.13	....
82.30	....	84.85	....	70.56	....	76.18	....	77.90	....
79.46	....	77.70	....	68.72	....	72.89	....	76.75	....
68.06	....	66.62	.13	61.00	....	65.89	....	62.21	....
49.46	....	50.62	.27	45.94	....	52.74	.06	50.54	....
50.11	1.03	52.43	2.87	57.65	9.75	51.57	8.77	50.37	7.48
48.95	....	50.45	.74	57.94	11.69	50.35	4.94	49.42	4.02
53.3	....	55.47	.90	59.10	3.97	55.28	1.86	53.65	1.15
56.44	.06	55.46	1.30	61.79	.83	53.37	1.05	55.17	.50
64.45	.13	63.01	.28	63.56	1.14	64.09	1.53	66.02	1.65
67.36	....	....	....	66.38	.06	70.82	....	....	....
79.25	....	80.08	....	69.94	.75	74.98	.33	76.11	.20
	1.27		6.08		28.19		18.54		15.00

Oakland.		Ione.		Fresno		Anaheim.		S. Cruz		Martinez.	
TEM	RAIN.	TEM.	RAIN	TEM	RAIN.	TEM	RAIN	TEM.	RAIN	TEM	RAIN.
[illegible]	....	70.98	....	88.28	....	....	....	....	....	....	....
[illegible]	....	76.24	....	86.18	..	....	....	....	....	....	....
63.79	....	73.39	....	87.92	....	....	....	....	....	....	....
61.56	.21	53.34	.46	72.06	....	60.66	....	....	.80	....	....
54.49	1.21	54.74	1.35	[illegible]	.88	62.0	....	....	2.00	....	....
52.23	1.70	49.5	.84	56.10	.4	58.41	2.5	49.88	5.0	....	....
53.46	[illegible]	50.64	5.28	50.24	3.20	55.1	2.10	51.95	10.0	55.5	1.69
[illegible]	[illegible]	52.2	7.02	49.0	1.76	55.70	1.67	52.3	14.71	57.17	7.25
56.79	3.7	57.3	3.33	56.41	1.90	58.61	1.48	[illegible]	4.1	60.10	2.08
59.31	1.00	59.31	1.10	62.2	.78	61.64	1.9	[illegible]	2.00	63.70	.47
62.65	.28	67.18	.19	76.11	....	66.8	.5	57.76	....	67.07	.17
64.89	....	77.9	....	83.46	....	70.3	....	79.78	....	71.8	....
	29.3		9.57		8.95		12.7		29.21		22.7
64.05	....	79.91	....	88.50	....	74.2	....	61.40	....	74.98	....
65.76	....	79.53	....	90.03	....	74.51	....	59.75	....	70.68	....
61.54	.75	72.88	.07	84.09	....	72.24	....	61.15	1.27	70.23	.11
62.72	1.58	64.52	.23	72.21	.20	63.18	.15	58.98	2.77	61.31	.18
60.48	.52	55.65	.91	66.21	.56	61.95	....	53.58	.30	57.29	.46
54.08	.27	45.67	.50	51.40	.22	58.01	.15	48.46	1.34	45.95	.22
49.56	4.40	45.15	2.82	49.10	1.28	53.05	.96	46.75	4.74	44.81	3.06
58.90	5.54	54.06	3.70	57.91	.50	56.09	.57	54.86	4.42	53.40	2.04
62.81	6.35	57.62	3.88	63.27	.60	62.82	.15	57.41	3.64	59.20	5.20
63.80	1.32	58.88	2.99	67.66	1.33	65.43	.37	57.88	2.14	62.28	.16
65.84	1.71	61.45	1.69	64.51	.00	69.35	....	58.84	1.41	62.73	.04
70.51	.15	80.29	.15	87.71	....	72.4	....	62.54	.05	70.54	....
	22.59		17.00		4.87		4.35		22.66		14.15
70.62	....	82.39	....	81.85	....	73.97	....	64.53	....	69.7	....
72.64	....	84.84	....	88.56	....	76.12	....	65.51	....	71.78	....
70.88	....	78.20	....	81.44	....	72.63	....	64.52	....	67.82	....
65.46	.61	66.73	1.59	66.26	.55	67.85	.11	60.40	1.0	63.0	.6
54.71	3.37	54.33	2.84	59.02	.48	58.39	1.72	53.19	3.70	56.0	1.68
49.72	3.77	47.07	3.05	48.03	1.67	53.77	3.10	48.19	2.5	47.4	2.32
49.18	1.77	43.03	1.33	48.52	.46	53.17	1.29	46.25	1.44	41.9	.47
50.23	1.95	44.85	2.39	49.80	1.73	51.37	1.32	47.78	1.04	44.2	1.14
50.19	1.51	50.52	1.60	53.34	.61	54.19	1.57	49.90	2.12	51.0	3.09
56.66	7.15	53.25	7.38	58.47	1.97	59.87	2.20	55.35	5.0	58.8	.16
66.92	.78	63.13	1.6	70.00	.15	67.55	....	60.00	.70	63.8	.10
68.90	....	76.81	....	81.08	....	68.81	....	62.71	....	70.57	4
	20.91		21.7		7.62		11.3		18.		17.45
66.46	....	82.51	....	84.39	....	70.21	....	62.67	..	[illegible]	....
65.61	....	81.30	....	84.53	....	72.16	....	63.52	....	67.35	....
64.97	....	78.97	....	82.36	....	69.26	....	61.68	....	66.20	....
63.44	....	67.74	....	71.42	....	66.14	.28	61.25	....	61.10	....
55.97	.30	50.30	.42	62.06	.44	58.42	.44	54.11	.40	48.89	.25
64.72	8.21	50.39	6.68	53.64	3.05	56.08	4.92	[illegible]	12.59	55.02	8.84
59.85	7.00	50.32	3.45	52.31	2.21	53.91	.25	54.09	9.38	54.54	5.00
54.14	2.72	54.03	3.07	61.94	.87	58.71	.28	57.91	3.28	58.03	2.41
55.99	.98	56.45	1.34	64.80	.55	58.16	.85	58.22	.74	56.76	1.00
63.08	1.28	63.18	1.07	69.74	1.00	64.57	.06	62.84	2.20	62.88	1.95
65.22	.30	68.06	....	75.26	.10	66.15	....	63.91	....	64.74	....
64.46	....	74.93	.33	79.07	....	68.88	....	62.88	.99	68.55	.21
	20.79		17.26		8.22		7.08		29.64		19.66

INFUSORIA IN DEW.—Mr. W. S. Kent states, in his "Manual of the Infusoria," that he gathered in a very foggy day in Regent's Park a quantity of grass saturated with "dew," and found in every drop squeezed from the grass great numbers of infusoria of different genera, such as Heteromita, Vorticella, etc., with *Rotifer vulgaris* and other rotifers, and numerous Amœbæ, Anguillula, and various diatoms, the collection as a whole being indistinguishable from the ordinary microscopic fauna of a roadside pond.

This Year's Rain.

In connection with the figures of previous years' rainfall, we give the following as the latest data of this year's visitation, the reports being up to Feb. 1:

	Total for season to Feb. 1.
San Francisco	8.01
Pleasanton, Alameda Co	5.64
Galt, Sacramento Co	5.30
Brighton, "	4.18
Rocklin, Placer Co	8.86
Auburn, "	17.02
Marysville, Yuba Co	7.81
Tehama, Tehama Co	6.37
Red Bluff, "	[illegible]
Redding, Shasta Co	1[illegible].81
Napa, Napa Co	10.33
Calistoga, " "	12.97
Suisun, Solano Co	9.16
Davisville, Yolo Co	5.82
Woodland, " "	6.05
Martinez Contra Costa Co	7.44
Ione, Amador Co	8.42
Stockton, San Joaquin Co	3.92
Oakland, Alameda Co	10.17

It is also shown by this (Wednesday) morning's dispatches that rain fell yesterday where it was most needed, in the interior valleys.

Fresno.—It began raining at noon and showered till dark. It is the best rain of the season, and the indications are that all parts of the county have had rain. It is still cloudy, and the prospect is good.

Bakersfield.—A heavy frost covered the ground this morning. The sky was overcast, with the wind from the southeast. Rain began falling about 3 o'clock this afternoon, and it has been raining steadily since that time, with prospects of continuing all night.

Los Angeles.—Rain fell about two hours this evening, making a fall of .37 of an inch. It is snowing in the mountains.

Merced.—The welcome and much-needed rain begain falling heavily a little after 3 o'clock this morning, and continued without cessation until noon. The weather is still very favorable for the continuation of the rain.

Salinas.—Another fine shower of .25 of an inch fell to-day and to-night. It looks cloudy, with a southwest wind and falling barometer.

Grass Valley.—Just before midnight last night it began snowing and continued until to-day at noon, during which time eight inches fell. To-night it is freezing hard, which, if it continues, will occasion much loss to all kinds of mining, as the water supply will be choked off. Our town reservoir has but a limited supply, which is retained in case of fire.

Sacramento.—Rain began falling here at an early hour and continued until 9 o'clock. A. M. In the afternoon there were two lively hailstorms. Reports from the mountains say that there is a heavy snowstorm all along the line of the overland railroad.

Stockton.—Light showers have fallen here during the day. The rainfall for the season is 3.92 inches; for the corresponding period last year 10.37 inches.

Santa Barbara.—The wind is from the northeast to night, and it rained this afternoon. It is hoped the wind will change to the southeast and bring several inches of rain.

San Jose.—Rain fell heavily before daybreak this morning, and during the afternoon we had quite a heavy shower, varied with hail, thunder and lightning.

Vallejo.—We have had several showers today and some hail.

Visalia.—A good rain commenced this afternoon and it promises to continue.

Arizona.

EDITORS PRESS:—I am now some 70 miles north of Tucson, 40 east of Florence and about 40 southeast of Globe, at the junction of the San Pedro with the Gila river. These rivers above here, are said to be unhealthy; but right here, it is the healthiest place I have found in Arizona. At Tucson, two autumns, I had a spell of chills and fever; here, no trouble at all. I came into the neighborhood on account of the coal fields; and the people wishing me to teach their school this winter, I consented. I have had a time of it. The Indian outbreak took place two weeks after I began, and scared most of the families away for three weeks. It was a rather unpleasant condition of things. I remained, hoping the trouble would soon end. There were a number of miners stopped at the same place, and we carefully kept ten guns ready for defense at a moment's warning. Our mail carrier stopped his weekly visits at the time, and we could get no news for so long that the suspense was dreadful. Then, when it was supposed all was orderly again, the families returned, school began, and another outbreak occurred. Terror seized the people again; and though they didn't leave this time, some did not come to school, while those that did, carried deadly guns with them. It reminded me of the early history of Eastern settlements, where people carried their guns to church. Here we feared each day that

The Redskins

Would come like a whirlwind and be upon us all of a sudden, when we intended to stand them off as well as we could.

As there was a family and a number of miners stopping there, a quarter of a mile from the schoolhouse, and as they had made a fortification on a small hill near, we believed we could drive away 100, or more. But as the Indians are furnished with the most improved guns and abundance of cartridges, we had reason to fear that some, or all of us, would bite the dust.

Oh, it does seem cruel that people must live in such terror of lawless savages, fattened at Government expense, furnished with the most deadly arms, and quartered near by us here, where, whenever they choose, they can make a sally, and carry death, destruction and ruin wherever they go.

I suppose every one of the 4,000 Indians at San Carlos reservation knows all about the condition of the families on the rivers from Florence up to Willcox, and beyond. The restless creatures, not satisfied to remain in idleness (and no wonder), have been roaming all over the country, sometimes over 50 passing at once, during the summer, before the trouble.

What a blessing it would be to the Indians, as well as to the country, if all could be moved to the Indian Territory, where it seems to civilize them to settle down and make homes. This part of the country most earnestly desires such a thing as their removal, and the way it has been, it would be an immense saving to the Government.

A Valuable Country

Lies right in this neighborhood. I can show why. The soil on the river bottom is exceedingly fine, well adapted to grain, vegetables and fruit. Three of the neighbors have gone into raising fruit—W. D. Herrington, W. A. Cunningham, and, most extensively, W. A. Lattin, who has over 2,000 trees, apple, pear, plum, apricot, peach and other trees, and I must say that although I am, to a considerable extent, a tree man, I never saw so fine a growth in any place I have been. His peach trees are planted 16 ft. apart, and although only three years old from planting, many of them nearly touch each other. I have been privileged to taste some of the peaches this year; and, again, I must say I believe them to be the finest I ever tasted. Crawford's Late, in Los Angeles county, Cal., was to me too *sour*; here, if anything, too *sweet*. The hot sun here seems to bring them to absolute perfection, in size, beauty and flavor. Then, here are potatoes (Irish and sweet), corn, squashes, beans, onions, tomatoes, and everything nearly. Watermelons—oh! so large and so fine!

In addition to the value of the fine land lying along the river for cultivation, each farm has an immense range of fine pasturage for cattle among the hills on each side of the river. Owing to the tremendous rains this summer, the grass has grown enormously, there being enough now for a thousand to one of the number here at present. Of course the farmers on the river are taking advantage of this, and increasing their stock as fast as they can. The grass is of very excellent quality, making flesh on the cattle, and the sweetest, richest milk. This place enables one to revel in the best of vegetables, milk, butter, eggs and the like; and soon the finest of fruit. Fruit trees are not old enough yet to bear abundantly, for remember, it has been but a few years since the dreaded Apache hindered any one from venturing to rest his foot here, much more making a home and planting trees.

H. H. MESSENGER.

Riverside, Pinal Co., A. T.

STUDENTS of Kant are offered a prize of 1,000 florins for the best popular treatise on that philosopher's views on the ideality of time and space. Herr J. Gillis, of St. Petersburg, will not only give that sum, but will publish the successful essay and pay the profits on its sale to the author.

MISCELLANEOUS.

Artificial Cultivation of Sponges.

Some time ago attention was called to the fact that several Austrian scientists had demonstrated the feasibility of artificially propagating sponge by actual experiments in the Mediterranean, with the fine sponges that grow there. The method they adopted was simply to cut the living sponges into small pieces, which were then attached, at suitable distances apart, to a framework of wood, which, when filled, was weighted and sunk beneath the surface of the sea. These sponge fragments were found not only to retain their vitality, but to increase rapidly in size, so that a few years sufficed to produce marketable sponges therefrom at comparatively trifling cost.

In view of the rapid exhaustion of the sponge fisheries in the Mediterranean, the foregoing demonstration was looked upon as of great practical value, and the Austrian government gave official encouragement to the conduct of a series of similar experiments. These were, untortunately, nullified by the jealousy and ignorance of the sponge fishers, who foolishly imagined that their industry would thereby be injuriously affected, and they repeatedly destroyed the wooden platforms and their contents. The experiments met with such strenuous opposition from this source, that they were finally abandoned and, have never been renewed.

We learn, however, from the *Oil and Drug News*, that experiments in the artificial cultivation of sponges have lately been undertaken, and with very promising results, at Pine Key, Fla. The pieces of sponge referred to in this case are spoken of as being simply transplanted, and not cut into small fragments as in the Mediterranean experiments. These were found to increase in size from two to seven or eight inches in diameter within the period of seven months.

The suggestion is now made to transplant the finer Mediterranean sponges and attempt their artificial propagation, and there is little doubt but that it would prove more profitable to raise them in our own waters than to import them. The superior quality of the Mediterranean sponge, however, is largely due to the extreme clearness of the water in which it grows, and much care would have to be exercised in the selection of the situation in which to cultivate it. As the possible indication of an entirely new industry, the foregoing is worthy of notice.

Solvent Action of Canned Food on Tin.

This subject has lately been carefully investigated by Helmer, who announces through the London *Lancet* that tin, even when quite pure, is much more readily attacked by canned articles of food than is commonly supposed. He has made an examination of a large number and a great variety of such canned goods, and has found tin in comparatively large quantities in nearly all of the samples examined.

As examples, he states that acid fruits, such as peaches and cherries, corrode the metal to an alarming extent; but what is even more serious, he found that meats, and even condensed milk, take up and become contaminated with sensible quantities of the metal. He instances the case of a can of soup, which he found to contain 35 milligrams (about ½ grain) of tin to the pound; one of condensed milk which carried 8 milligrams (⅛ of a grain); and one of oysters, which contained 45 milligrams (about 7-10ths of a grain) to the pound. He found also, that soda water, and all other varieties of aerated beverages which he examined, and which were conducted through tinned pipes, contained appreciable quantities of tin.

Having established the above facts, we come now to the more directly interesting and important question, whether tin is injurious to health. On this point there appears to be still some room for doubt. To settle the question, Helmer made a number of experiments upon pigs, the results of which went to prove that while *stannic* compounds are harmless, *stannous* compounds acted as decided irritant poisons. As the tin dissolved in the various forms of prepared foods would exist in this latter condition, the above statements become decidedly important.

Clover Insects.

The American *Naturalist* has a notice of a small work on the insects of the clover plant by Mr. Lintner, the State Entomologist of New York. After an introduction showing, by quotations from Mr. George Geddes, the importance of the clover crop, especially to the people of New York State, he makes manifest the large increase of insect depredators on the plant. He then remarks upon the fact that no notice of clover insects appears in the reports of Dr. Fitch, his predecessor; which fact indicates the scarcity or the unimportance of the insects affecting the crop in Fitch's time. He next quotes from Kaltenbach's "Pflanzenfeinde" a list of 66 species affecting clover in Europe, and by way of comparison gives a list of our own species, which includes 33 lepidoptera, 3 coleoptera, 3 diptera, 5 orthoptera and 2 homoptera.

The *Naturalist* says: "It may be safely assumed that the number of species in this country affecting the plant, though not perhaps injuriously, will be at least doubled by future observation, and in coleoptera we feel confident that it will be quintupled."

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List of Illustrations

Frontispiece—Whaling Scene in the California Lagoons.
The California Gray Whale, and the Finback Whale.
Embryos of a California Gray Whale.
Indian Whaling Implements
California Grays among the Ice.
Esquimaux Whaling Canoe and Whaling Implements.
Outlines of Northern Finback.
Humpback and Sharpheaded Finner Whales.
Humpbacks Lobtailing, Bolting, Breaching and Finning.
Outlines of a Humpback Whale.
Aleutian Islander's Whale Harpoon.
Outlines of a Humpback, from above.
Appearance of a Female Humpback Suckling her Young.
Eye and Parasites of Baleen Whales.
Outline of Boys' "Bunchback."
The Bowhead or Great Polar Whale.
Full-grown Baleen of Seven Species of Whales.
Right Whale of the Northwestern Coast.
Sulphurbottom Whale.
Sperm Whale.
Sperm Whale in Search of Food.
The Blackfish.
Orcas or Killers.
White Whale, or Whitefish of the Whalers
Baird's Dolphin, Common Porpoise, and Right Whale Porpoise.
Approximate Outlines of Cowfish, White-headed or Mottled Grampus, Bottled-nosed Grampus, and Panama Grampus.
Sea Elephant and Sea Lion.
Club and Lance used in the Capture of the Sea Elephant.
Male Sea Lion Sleeping and Male Sea Lion Waking.
Appearance of a Male Sea Lion when Roaring, and Female Sea Lions, of St. Paul's Island.
Banded Seal, and Fur Seal.
Full-aged Male Fur Seal, St. Paul's Island.
Head of Female Fur Seal, from below, two-thirds natural size.
Head of Female Fur Seal, side view, two-thirds natural size.
Side View of Female Fur Seal, view of Female Fur Seal from below, and attitudes of Fur Seals.
Seal Spear of the Makah Indians, Nee-ah Bay, W. T., 1866, and Spear Head, full size, with line attached.
Moving Attitude of a Leopard Seal, on shore.
Leopard Seal, and Sea Otter.
Aleutian Islanders' Seal Otter Canoe, or *Bairdarka*, with Hunters engaged in the chase; Aleutian Islanders' Sea Otter; Spear, and Spear Head, full size.
Walruses.
A Whaling Scene of 1763.
Implements belonging to a Whale-boat.

Pierce's Harpoon Bomb-lance Gun; Bomb-lance; and Diagram showing inside of Bomb-lance.
Mast-head Waif.
Diagram showing the manner of Cutting-in the Bowhead and Right Whale.
Blubber-hook and Fin-Chain.
Implements used in Cutting-in a Whale.
Head-strap; Toggle; and Throat-chain Toggle.
Cutting-tackle toggled to the blanket-piece.
Outline of a Sperm Whale, showing the manner of Cutting-in.
Mincing Knife.
Blubber-fork; Stirring-pole; Skimmer; Bailer, and Fire-pike.
A Northern Whaling Scene
Whale-boat with Greener's Gun Mounted.
Whaling Station at Carmel Bay.
Skeleton of a *Balana mysticetus*.

Table of Contents.

The California Gray Whale.
The Finback Whale.
The Humpback Whale.
The Sharp headed Finner Whale.
The Bowhead, or Great Polar Whale.
The Right Whale of the Northwestern Coast.
The Sulphurbottom Whale.
The Sperm Whale.
The Dolphins.
The Blackfish.
The Orca, or Killer.
The Whitefish, or White Whale.
The Bay Porpoise
The Striped or Common Porpoise.
Baird's Dolphin.
The Right Whale Porpoise.
The Cowfish.
The White-headed or Mottled Grampus.
The Bottled-nosed Grampus.
The Panama Grampus.
The Puget Sound Grampus.
The San Diego Bay Grampus.
The Squarehead Grampus.
The Brown-sided Dolphin of Santa Barbara Channel.
The Narwhal.
The Sea Elephant.
The Sea Lion
The Banded Seals. Fur Seals.
The Leopard Seal.
The Sea Otter.
The Walrus.
Origin and Ancient Mode of Whale-fishing
The American Whale-fishery.
Ships, Outfits, and Manner of Taking the Whale.
American Whaling Commerce.
California Shore-whaling.
Life and Characteristics of American Whalemen.
Lagoon-whaling.
Lagoon-whaling Incidents.
Again to the North, and Home.
Catalogue of Cetacea of the North Pacific Ocean.
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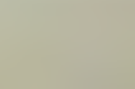

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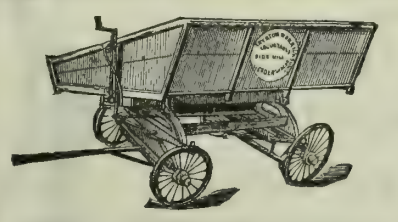

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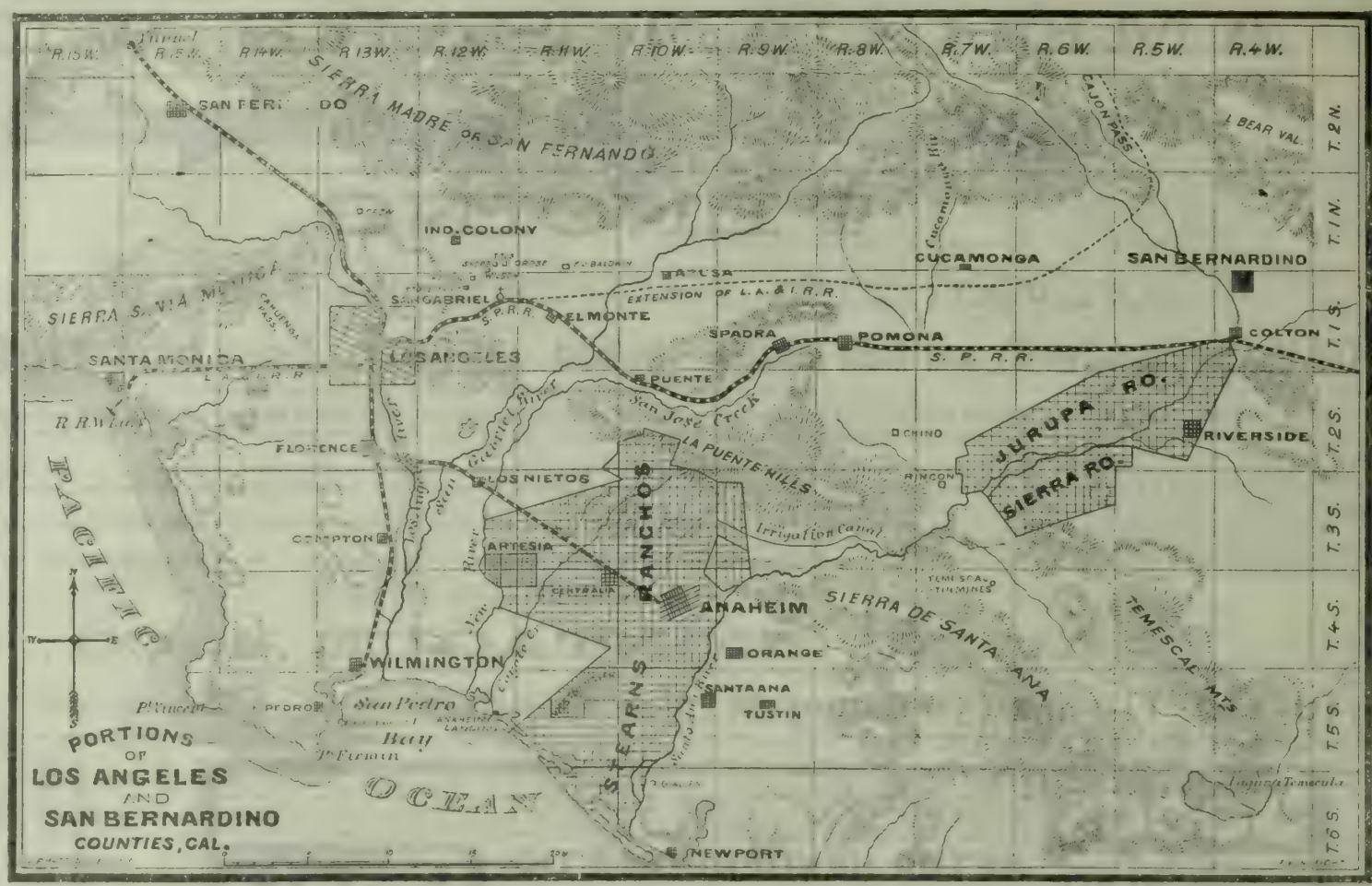

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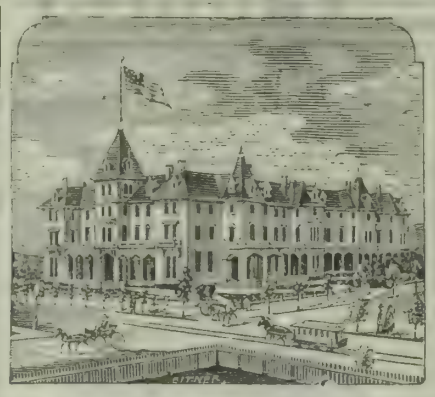

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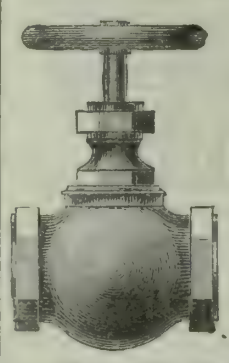

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I offer the trade this season a LARGE and GENERAL ASSORTMENT of

FRUIT TREES AND SMALL FRUITS.

My trees are healthy, stalky and well grown. Prices low down. Address S. NEWHALL,
San Jose, Cal.

FOR SALE.

A PATCHEN STALLION.
Three Years Old.
Can be seen at the ranch of S. B. Emerson, Mountain View

TO NURSERYMEN!!

FOR SALE.

APRICOT PITS!
PEACH PITS!

20,000 Bartlett Pear
In Dormant Bud.

☞ These are on leased ground and must be sold.

JOHN ROCK,
San Jose, Cal.

Dewey & Co {252 Market Street,} **Patent Agts**

A NEW RAILROAD.

Carson and Colorado Railroad, Nevada.

NOW IN OPERATION TO HAWTHORNE
110 MILES SOUTH OF CARSON, NEV.

The direct, shortest and cheapest route for freight and passengers to the following mining towns and camps: Aurora, Bodie, Bridgeport, Belleville, Candelaria, Columbus, Benton, Montezuma, Silver Peak, Alida Valley, Bishop Creek and Gold Mountain.

C and C. R. R. trains make close connection at Mound House Station with trains of Virginia and Truckee Railroad, making close connection at Reno with East and West bound trains of the C. P. R. R.

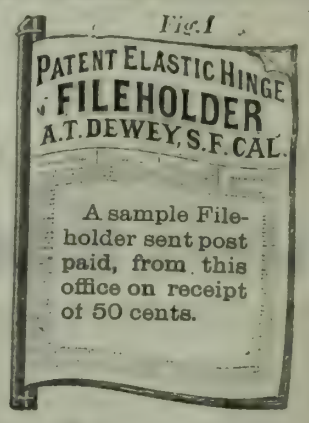
Passengers leaving San Francisco and Sacramento on C. P. Overland train arrive at Hawthorne and connect with U. S. Stage Company's line of Concord coaches at 2:45 P. M. of the following day, arriving at Bodie same evening.

Wells, Fargo & Co.'s line of Fast Freight Wagons leave Hawthorne daily, delivering fast freight in Bodie within 36 hours from San Francisco.

To insure dispatch by team transportation from Hawthorne, shippers are requested to mark freight Care D. W. Earle & Co., Forwarders, Hawthorne, Nev.

General Office, Carson, Nev.

H. M. YERINGTON, Gen'l Supt. D. A. BENDER, Gen'l Freight & Pass. Agent.



A sample File-holder sent post paid, from this office on receipt of 50 cents.

This is the best durable file-holder in use. Send for sample, or further information, to this office.

Rare Cabinet of Minerals.

A physician who has long resided in the mines and other parts of California, and gathered a large and valuable collection of minerals and other specimens, offers the same for sale at a bargain. Address "Cabinet," box 2361, San Francisco.

F. MANSELL & CO.,

Sign and Ornamental Painters,

Removed to NO. 434 PINE ST., S. F.

(Opposite their old stand.)

The Field.

Wheat Lands of the Sacramento and San Joaquin Valleys.

The Sacramento and San Joaquin Valleys constitute the great interior basin of California. In a general sense we may consider these valleys as composing one vast plain, stretching up and down and parallel with the ocean's coast. This plain or valley is surrounded by mountains; the Coast Range lying on the east and the Sierra Nevada Range on the west, and both ranges coming together at the northern and southern extremities of the valley. The northern half of this great inland valley is drained by the Sacramento river, and the southern half by the San Joaquin. The Sacramento has its source or head in the junction of the mountains near the northern extremity of the State, and receives through its numerous branches the entire water from the interior water shed of these two ranges of mountains and the northern half of the plain, and running in a southerly direction empties it into the San Francisco Bay through the Straits of Carquines. The San Joaquin rises in the mountains at their southern junction, and collecting all the waters from the southern water shed of the interior slopes of these mountain ranges, and the southern half of the interior plain, conveys it in a northerly direction to and through the same straits into the same bay. This great interior basin or plain contains about 30,000,000 square acres of land, over 20,000,000 of which is among the best wheat land in the world.

The southern half of this great plain or basin is called the San Joaquin Valley, and is made up of the following named counties, each containing the number of acres following its name:

County.	Acres.
Tulare	4,100,000
Kern	5,184,000
Fresno	5,180,000
Merced	1,260,000
Stanislaus	876,800
San Joaquin	960,000
Total	17,580,800

The following named counties compose the Sacramento Valley:

County.	Acres.
Tehama	2,000,000
Shasta	2,410,000
Butte	1,130,000
Colusa	1,472,000
Sutter	391,000
Yolo	651,000
Yuba	395,000
Placer	915,000
Solano	530,000
Sacramento	620,000
Total	10,514,000
Total for both Valleys	28,094,000

Soils of the Valleys.

The soils of both these valleys may be divided into two general classes—adobes and loams. The adobe soils are generally heavy and compact, composed of very fine particles and nearly free from grit of any kind. They form with water a stickey stiff mud, and when mixed and dried become like unburned brick, solid and almost impenetrable to water. As water falls upon these soils and wets them to a certain degree, they may be plowed, and work up mellow and pliable. If too wet when plowed they dry into clods which it is almost impossible to reduce to a proper tilth again. If cultivated at the proper time and left in proper condition, they remain in good condition during the Summer season, and hold moisture and mature crops when other soils suffer and become almost useless from drought. If, however, these adobe soils remain uncultivated after being thoroughly saturated with water and exposed to the heat of the sun, there forms a crust on the surface which, for a time, prevents evaporation, but as the heat increases they crack into innumerable sections, and through these cracks the moisture escapes till the whole mass becomes as dry and hard almost as rock itself. The adobe soils are not always black, though this is the general color. They seem to take their color from the mixture of mineral or vegetable coloring matter, and vary from a dark black color through all the various tints of gray, to yellowish red. The pure adobe soils are generally found on the elevated plains that extend from the river bottoms proper, back to the foothills and mountains, but a very large per cent of these elevated plains, which make up the great wheat growing regions, are composed of a mixture of adobe and loam, the one or the other predominating according to location and manner of formation. The loams as distinguished from the adobe soils are light and friable, and always being more or less mixed with sand are consequently more or less gritty. They do not run as do the adobes with water, and do not form a mud of so stiff and sticky a nature, and do not bake and form a crust on the surface, or crack and shrink when drying, and are not cloddy. As the rains fall upon the loam soils, the water penetrates them till they are completely saturated before it will run from the surface, and when the water is evaporated by heat, the particles remain loose and porous, and can be plowed and cultivated without injury when much wetter than it will do to cultivate the adobes. The loamy soils constitute by far the larger part of the immediate river and creek bottoms, and are formed along the course of dry sloughs and ravines, making out from the rivers and smaller streams, and along all the smaller creeks and gulches that come down from the mountains through the foothills and make out into the plains. These loam and mixed loam and adobe soils are adapted to general and diversified agriculture and fruit culture, and were first settled up and improved, the unmixed adobes of the plains being at first considered too dry even for the production of the small grains.

The Sacramento and San Joaquin rivers do not occupy the line of lowest depression in their respective valleys, but each runs on a ridge made through the valley by the action and overflows of its own water. From the immediate banks the land recedes as a rule for two or three or more miles, and then rises gradually again from this point to the foothills on either side. The same is true of all the main branches of each of these large rivers after they have left the foothills and flown through the level plains. As you leave the foothills on either side, and approach the central portion of either large valley, the soil becomes finer, deeper and richer, carrying a larger portion of vegetable loam, and consequently being more durably productive without the application of fertilizers. As an evidence of the wonderfully productive capacity of these valley lands, it may be stated that wheat has been grown on much of them now for twenty-five years in succession, and that the crop of 1880, this being a favorable season, was one of the heaviest ever grown in either valley. In many localities, and on much of these lands that have been bearing Wheat for twenty-five successive years, the average yield last year was from 30 to 50 bushels to the acre. Though the practice has been to plow up the stubble each rainy season, and re-sow to Wheat each year, this practice of annual cropping is, of late years, being discontinued, and summer-fallowing the land and raising biennial crops is being substituted with much better results in both valleys. By a more thorough pulverization of the soil it is found it retains the moisture much better, and consequently produces larger crops with greater certainty. With a certainty of a plenty of moisture, the experience of the past justifies the belief that the 20,000,000 of acres of Wheat lands in these two great valleys can be depended on, with fair care and cultivation, for twenty-five bushels per acre annually for an almost indefinite period in the future. With plenty of moisture, wearing out the soil seems almost an impossibility. Its depth allows of a continual draught on the lower levels, and each time the plow is sunk an inch deeper, it brings to the surface that much virgin soil to invigorate the growth and perfect the crop of Wheat. There being no stones, rocks or hard pans to prevent, there is no reason why plows may not be so constructed as to plow two feet deep instead of from four to six inches as has heretofore been the practice. But the soil that is brought up from an inch deeper than the plow has before reached, will be sufficient to renew and sustain the fertility of the soil for two or three crops, and then an inch deeper will again suffice for a like period, and a few inches thus brought up at proper times will ensure virgin soil and virgin crops for a generation. We would remark here that Wheat is not the only product for which the lands of these valleys are adapted; on the contrary, with plenty of moisture they will grow in the greatest perfection almost anything that the earth can be made to produce anywhere. With the natural rainfalls, all the loam soils will produce Corn, Cotton, Tobacco, Potatoes, Onions, Peas, Beans and every other product of the temperate zone, as well as all the fruits of like climates, but the higher and adobe soils require in either valley artificial irrigation to render certain and profitable any crops other than the small grains.

Markets and Transportation.

The market for the Wheat produced in these valleys is Europe, and at present to reach that market the grain has to go around Cape Horn, making a greater distance and consuming more time, and paying higher freights than the Wheat of any other Wheat growing country, to reach the same market. The location is against them, and the grain growers here are placed at a disadvantage in this respect to those engaged in like production in any other country. Even with this disadvantage, the history of the past has shown that the Wheat growers of California have been as prosperous, and even more so, than those of any other part of the world.

There have heretofore been many other circumstances aside from mere distance that have operated to the disadvantage of the Wheat growers in these valleys. The climates through which the Wheat carrying vessels have hitherto been obliged to pass have been so variable, and the risks of the sea continued through so long a period, that it has been considered too risky to ship the grain in bulk, and hence a tax of from five to six cents a bushel for sacks to handle the Wheat in, amounting in the aggregate to $1,000,000 or more a year on the Wheat growers of these valleys, has been one of the necessities of the situation. Then interest and insurance for so long a distance, and for so long a time, has been another serious charge to which the producers have been compelled to submit. Then there being but one route, and but one mode of conveyance, advantage has been taken of this circumstance by speculators in tonnage to the loss of the producers of millions of dollars in some single seasons. Again, San Francisco being the only exporting port that could be availed of, the city has levied unusual tribute on the grain passing over her docks and through her warehouses.

The completion and equipment of the Southern Pacific Railroad to New Orleans before the next Wheat harvest, promises to bring about

A New Era.

In the Wheat interests of these valleys and the entire Pacific Coast. An element of competition in freights is one of the first advantages promised, and consequently lower prices. The time in transit will be reduced to one-third the present time consumed, and hence a less rate of insurance and a less time on which to lay out of the use of the money value of the crops—in other words a lopping off of the insurance and interest expense, amounting to two-thirds that heretofore paid. As the Wheat can be loaded on the cars within a few miles of every Wheat farm in either valley, and will not be trans-shipped until it reaches New Orleans, it will escape the burdensome charges that San Francisco has heretofore collected from it in the way of tolls, wharf dues, etc. Then again, the objection to conveyance in bulk being removed, facilities for handling the Wheat in this manner will undoubtedly follow, and thus a million to a million and a half expense bills for sacks, will be lifted from their shoulders annually.

Not the least among the advantages to result from the dawning of this new era in Wheat culture in this State, we may mention the fact that the reduction of time consumed in transportation will enable us to take advantage of the market, and in this respect we will be placed on a par with the Wheat growers of the Mississippi valley Wheat States, or of Europe or Australian fields. Other advantages of a commercial nature, not now thought of, will doubtless accrue, but if we have heretofore been able successfully to compete with the world in Wheat growing and selling, while laboring under so many disadvantages, may we not justly reckon on a period of unusual prosperity to follow the change for the better so near at hand?

Wheat Crops of the Past.

One of the best elements or factors in estimating the future productive capacity of any section of country for a certain crop, is the product of that country in the past. In the light of the past we judge of the future. We will take the two years of 1879 and 1880, and from returns of the Assessor to the Surveyor General for these two years we make the following tables. The first table shows the number of bushels of Wheat produced in 1879 and 1880, in each county composing the San Joaquin valley, and the total product of the valley for each year. The second shows the same facts as to the Sacramento valley:

San Joaquin Valley.

COUNTIES.	Bushels of Wheat in '79	Bushels of Wheat in '80
Fresno	300 000	3 780,780
Tulare	993,590	1,490,560
Kern	97,257	342,000
Merced	199,130	2,015,115
Stanislaus	3,095,665	3,007,896
San Joaquin	3,750,715	4,986,526
Totals	8,425,357	15,623,877

Sacramento Valley.

COUNTIES.	Bushels of Wheat in '79	Bushels of Wheat in '80
Butte	1,527,000	2,585,568
Colusa	3,806,264	1,597,879
Sacramento	297,317	457,500
Solano	2,105,000	3,250,600
Sutter	1,400,000	2,038,138
Tehama	1,250,000	1,500,000
Placer	250,500	500,267
Shasta	43,300	237,600
Yolo	2,110,100	3,808,000
Yuba	337,739	586,540
Totals	13,127,620	22,362,092
Total bushels for both valleys in 1879		21,552,977
Total bushels for both valleys in 1880		37,985,969

Thus it will be observed that the increase in one year was 16,43,2992 bushels, or over 75 per cent. The above tables do not show the number of acres in Wheat in each year, but for the purpose of comparison we will state that in 1879 there were in both valleys 2,085,317 acres in Wheat, and in 1880 there were 2,151,457 acres in both valleys in Wheat.

It will be noticed that very nearly the same area was in Wheat each year.

The very large increase in product was not therefore due to an increase in acreage, but to a more favorable season.

The Possibilities of the Future of These Valleys.

We have stated that these two valleys contain about 20,000,000 acres of good Wheat land. While this vast area is not all at present available for cultivation, nature has provided the means of rendering it all so. There are in both valleys large sections that have not heretofore been cultivated, because they have been considered too dry to ensure crops without artificial irrigation. The experience of each successive year in cultivating lands that had before their cultivation been regarded as valueless, warrants the belief that in a few years a large portion of those now considered valueless will rank among the best lands in the valleys. But thirty years ago none but the immediate river bottoms were thought worth having, and now millions of acres of lands then rejected are paying interest, and good interest too, on $100 an acre, and much of these same lands are held all the way from $1 to $500 an acre. The experience in cultivating the lands of California has been a continual surprise not only to those cultivating them, but more so to those who had passed them by as unfit for cultivation. In our dry climate, cultivation of the soil not only causes the soil to retain moisture when once in it, but it changes the character of the atmosphere above the soil, charging it with moisture, so that instead of absorbing the moisture from the soil and carrying it away, the soil absorbs moisture from the atmosphere and retains it. As a striking illustration of lands rejected becoming more valuable than those preferred, we will cite the history of the northern part of Yolo county and of Colusa county. This section of the Sacramento valley remained unsettled for years after other sections were occupied, because the lands were regarded as too dry to be valuable for any purpose—certainly for the production of Wheat. And yet Colusa county, as we have seen in the above tables, leads every other county in Wheat raising in the State, and Yolo county stands third in the quantity produced; and these long rejected lands, now under cultivation, give these counties their proud positions. The area of Wheat cultivation is rapidly advancing toward and up the foothills, both of the Coast Range and Sierra Navadas, and we expect to live to see the golden grain waving and hear the clatter of the reaping machine, and see the steam ascending from the steam thrasher high upon the sides of both these mountain ranges.

Then again, there are broad areas of lands in both these valleys, along the lines of lowest depression, running parallel with their main rivers that are now unavailable for Wheat culture on account of the annual overflows from these rivers. Experience in the cultivation of these overflowed lands, where they have been partially reclaimed, has proven them to be the best Wheat lands in the world—absolutely inexhaustable. The process of reclaiming these lands is going slowly on, and has been for years, and although they are at present under a cloud, more especially in the Sacramento valley, on account of the debris from the hydraulic mines, still the day will surely come when this cloud will be dissipated, and these lands will fairly groan under the crops of Wheat that will grow out of them. Under the stimulus of the world's Wheat market, brought two-thirds nearer to our doors, and consequent reduction in cost of production for that market, supplemented by the influx of immigration, consequent on the shortened route and reduced fare from the hives of human beings in the centers of European population, cultivation in these valleys will not only expand, but become improved and intensified. While mixed agriculture will take the place of the present single Wheat crop syestem, and thus double and quadruple the total products of the soil; the Wheat crop itself will increase in yield to the acre, consequent on improved cultivation, till these valleys will become in fact and reality the Wheat graneries of the world.

Twenty millions of acres of the deepest and richest lands in the world—lying in a single valley, in fact in a single body, surrounded by a single enclosure—the snow capped range of the Sierra Mountains and the ocean washed Coast Range. Such is the great interior valley of California, drained and fertilized by the twin rivers, the Sacramento and San Joaquin, and such is the possibility of the Wheat lands of these valleys, with a capacity of producing an annual crop of four hundred million bushels of Wheat while half of their area is devoted to other crops.—*I. N. Hoag in Journal of Commerce.*

Compound Oxygen Treatment.

We take pleasure in commending to the careful attention of our readers the "Compound Oxygen Treatment." This treatment is becoming very popular as a curative agent, for all diseases of the lungs, and other respiratory organs, consisting principally in oxygen inhalation. Dyspepsia, diseases of the liver, and nervous derangements are also cured by this wonderful agent. A New England physician discovered this great remedy for disease after an almost fatal attack of pneumonia, the results of which did not leave him for months. The dispensers of this Treatment have some of the very best testimonials as to its efficacy from those who have used it. Among those who testified to its curative properties are such men as T. S. Arthur, the distinguished author and proprietor of the *Home Magazine*, and Hon. William D. Kelley, member of Congress from Philadelphia. The testimony that comes from persons all over the land who have been cured of diseases that were pronounced hopeless, in many instances, can be characterized as nothing less than marvelous. It is a source of gratification to be able to recommend a really valuable remedial agent, especially in that terrible disease, pulmonary Consumption. The writer can speak personally as to the beneficial effects of the Compound Oxygen Treatment, hence this notice of it. Drs. Starkey & Palen are regularly educated physicians, and had much experience and successful practice before adopting this Treatment as a specialty.—*Shore Line, Conn., Times, New Haven, Sept. 24th, 1880.*

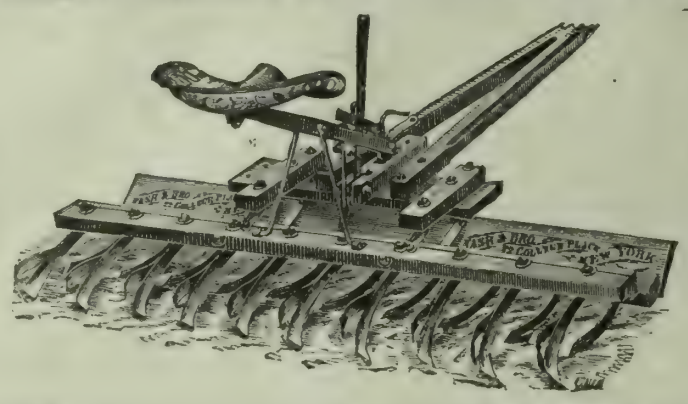
Frosted Forage.

We are getting an unusual number of frosty mornings this year, and the new grass is full of the crystals before sunrise. It may be timely to remark that sometimes the effect of frozen grass and other herbage is disastrous to the health of the animals fed upon it. A correspondent of the New York *Times* writes: "Usually my cows spend the forenoon in the stalls ruminating and digesting the morning's feed, and are not turned out until noon, when they have the range of a pasture. But one day they were turned out earlier, and while the frost was thick upon the grass in places where it was shaded by a hill from the early morning sun. The cows fed upon this frozen grass, and on being brought in, in the afternoon, one was found with the udder very hard and hot and inflamed. From seven quarts of milk at a meal she fell off at once to less than two quarts, and half the udder had no milk. After a whole week's care the udder is not well. Here is a week's product of a good cow lost by one little neglect and thoughtless departure from a regular system of management. But a curious effect occurred in churning the cream three or four days after this frozen grass was eaten. The whole churning of 25 lbs. of butter was of an unusually light color and defective in flavor; and, more than that, it required several days to completely recover the quality and appearance of the butter.

"ACME"

PULVERIZING HARROW, CLOD CRUSHER AND LEVELER.

For the Orchard, Vineyard, Nursery and Grain Field.



Send for Pamphlet giving Testimonials from the Pacific Coast.

The "ACME" subjects the soil to the action of a Crusher and Leveler, and at the same time to the Cutting Lifting, Turning process of double rows of STEEL COULTERS, the peculiar shape and arrangement of which give Immense Cutting Power. The entire absence of Spikes or Spring Teeth avoids pulling up rubbish. It is especially adapted to inverted sod, hard clay and "slough land" where other Harrows utterly fail, and also works perfectly on light soil.

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22 College Place, New York City.

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The Merigot Pump and Spraying Nozzle.

Largely used for Applying Insecticides in Orchards around San Jose.

FAVORABLY MENTIONED AS SERVICEABLE AND REASONABLE IN PRICE BY THE SPEAKERS AT THE SACRAMENTO CONVENTION.

☞The Merigot Spray-Tip Nozzle is the best known.—*Dr. Chapin's Address.*

The pump is Well Made with Metal Valves. Price, $12.

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Langshans, Cochins, Brahmas, Leghorns, Plymouth Rocks, Dorkings, Pekin and Rouen Ducks, Bronze Turkeys, Etc.

I have a large stock of the above varieties for Sale Cheap, considering the quality of stock. For further information, send 3 cent stamp for new circular and price list to **R. G. HEAD, Napa, Cal.**

THE STANLEY PATENT

Vine-Setter and Hole-Digger.

I desire to call the attention of those interested in setting out vineyards to the above tool. The following are a few of the many advantages which it possesses over all tools generally in use for that purpose: 1. It will dig the largest number of holes with the least amount of labor in all kinds of soil. 2. It makes a hole the desired depth for the reception of the cutting, leaving the ground thoroughly loosened at the bottom, with sufficient room for the fertilizer or composite which is necessary to some soils. 3. It leaves room enough to tamp the cuttings air-tight, without injury to the buds, which is an impossibility with the dibble, auger or crowbar. One man can dig from 800 to 1,500 holes per day, according to the nature of the ground. It works equally well in the loosest soil or the worst adobe. It is operated by forcing the blade into the ground with the foot, then turning it around; it cuts and removes the sod with the blade. If desired the hole can be lengthened or enlarged for long cuttings or young trees. The blade is made of the finest saw steel, cold rolled temper; handle, tubular iron.

I manufacture three sizes. Nos. 1, 2 and 3. No. 1 is 2 inch for slips, small cuttings and nursery work. No. 2 is 3½ inch, for grape vine settings especially. No. 3 is 5-inch, for post holes and tree planting.

PRICES.—No. 1, $4. No. 2, $5. No. 3, $6.

I refer to the following parties who, after practical test, have adopted them exclusively: Juan Gallegos, Mission San Jose; J. Sansevaine, Mission San Jose; Fisher & Megahan, Mission San Jose; J. L. Beard, Centreville; H. G. Ellsworth, Niles; Chas. A. Wetmore, State Viticultural Commissioner, San Francisco. In ordering address

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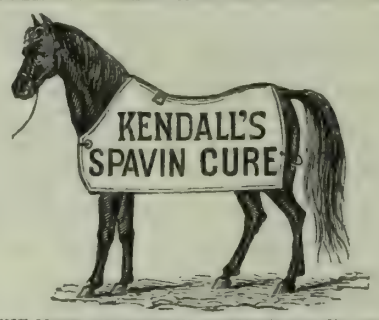

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From a Prominent Physician.

WASHINGTONVILLE, Ohio, June 17th, 1880.

Dr. B. J. Kendall & Co.:—Gents: Reading your advertisement in *Turf, Field and Farm*, of your Kendall's Spavin Cure, and having a valuable and speedy horse which had been lame from spavin for eighteen months, I sent to you for a bottle by express, which in six weeks removed all lameness and enlargement and a large splint from another horse, and both horses are to-day as sound as colts. The one bottle was worth to me one hundred dollars. Respectfully yours,

H. A. BERTOLETT, M. D.

Send for illustrated circular giving positive proof. Price, $1. All druggists have it or can get it for you. Dr. B. J. KENDALL & Co., Proprietors, Enosburgh Falls, Vt.

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IMPROVED HORSE COLLAR

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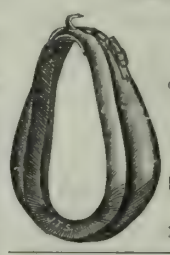

It saves your horse's neck.
It is the best Collar in use.
It can be adjusted to any shape or any animal's neck.

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Drilling Artesian and Ordinary Water Wells, Test Wells for Minerals,

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IMPERIAL EGG FOOD.

Will make your Hens Lay, keep them in the best possible condition and ward off disease. When fed according to directions, sick and drooping fowls are never seen. It furnishes the needed material for forming bone, muscle and feathers, and is

Invaluable for Young Chicks and Moulting Fowls. It comes packed in various sized packages, and being a powder, is easily mixed with the customary feed. Give it a trial. Send Stamp for Circular and Testimonials.

Price.—Single pound, 50 cents; Two and a half pounds, $1.00; Six pounds, $2.00; 25 pound keg $6.25. Address,

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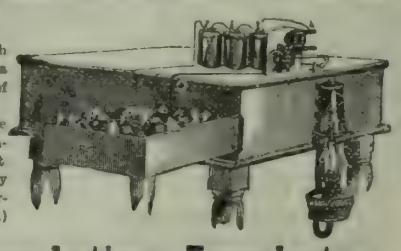

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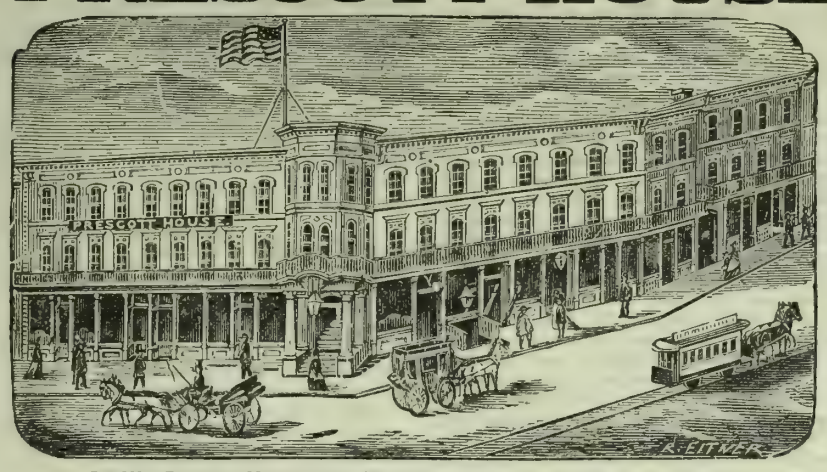

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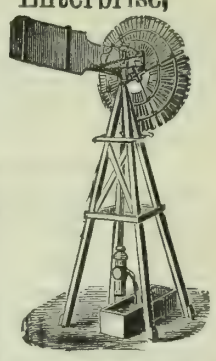

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AMERICAN CHIEF GANG PLOW.

Took the Premium over all at the great plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the best and most desirable Gang Plow in the world.

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The largest and deepest milking herd of Holsteins in the world. 225 head, pure bred, mostly imported, males and females of different ages.

A Large and elegant stud of imported Clydesdale Stallions and Mares of all ages.

Hambletonian Stallions and Mares of superior breeding Personal inspection invited. Separate catalogues of each class, and milk records of cows mailed free on application. All inquiries promptly answered. State that you saw this advertisement in the PACIFIC RURAL PRESS.

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Hunter's Eccentric Patent Coupling.

For carriages, pumps and whiffletrees and other couplings. No bolts, no rattling and no unhitching. State and County rights for sale. Address HUNTER & FRANCIS, Merced, Cal.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co.'s SCIENTIFIC PRESS PATENT AGENCY, No. 252 Market St., S. F.

FOR THE WEEK ENDING JANUARY 17, 1882.

252,414—BOX COVER PRESSES, E. Austin, Winters, Cal.
252,318—COMBINED POTABLE PANTRY, DRESSER AND SIDEBOARD, L. O. Hudson, Stockton, Cal.
252,385—RUBBER STAMP CABINET, C. A Klinkner, S. F.
252,333—CROSSCUT SAWING MACHINE, W. H. Smith, Portland, Or.
252,408—SIGN-BOARD, Geo. B. Wilbur, S. F.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast Inventors transacted with perfect security and in the shortest possible time.

State Horticultural Society.

(CONTINUED FROM PAGE 80.)

ready at the time. It was thought that with the answers of the members the secretary could give the Institute a fair understanding of the outlook for an exhibition if they should appropriate the money for premiums. The discussion on the fair question was prolonged and excited much interest.

Correspondence.

The Secretary read the following:

E. J. Wickson, Secretary State Horticultural Society:—DEAR SIR:—Your favor of the 6th, marginal to the printed letter of the society, has been received and the request and reasons meet my full concurrence. I have already seen Gen. Hazen and promised to aid in getting the needful appropriation for the desired extension of the operations of the U. S. Signal Service to our coast.—Your obedient servant, W. S. ROSECRANS, M. C., House of Representatives, Washington, D. C, Jan. 14, 1882.

E. J. Wickson, Esq., San Francisco, Cal.:—DEAR SIR:—Your circular letter of the 6th inst., calling attention to the letter of the Committee of the "California State Horticultural Society" to Gen. Hazen, in reference to the extension of the U. S. Signal Service on the Pacific coast, is at hand and contents noted, and in reply thereto I would say that the subject matter thereof will receive my earnest and hearty support both as Chairman of the Commerce Committee and as a representative on the floor.—Very Truly yours, H. F. PAGE, House of Representatives, Washington, D. C., Jan. 6, 1882.

Mulberry Growing.

The following communication was read by the Secretary: To State Horticultural Society: Having been informed that your society were to enjoy the privilege and pleasure of hearing Prof. Hilgard, of the State University, upon the virtues of the eucalyptus tree, the members of the Silk Culture Association would like to have permission to draw your attention to the many benefits resultant from the cultivation of the mulberry. The mulberry tree is useful in such a variety of ways as to especially commend it to the California farmer. It can be more easily raised than the eucalyptus, as it is propagated from slips. Its foliage makes excellent feed for cattle. In many parts of Europe, where silkworms are extensively reared in cocooneries, the leaves rejected by the worms are fed in quantities successfully to stock. As the mulberry tree, unlike the eucalyptus, is deciduous, the fallen leaves enrich the soil, returning to it what had been withdrawn.

In the spring of the year there can scarcely be imagined a more beautiful object than a young and vigorous mulberry plantation. Any farmyard would be beautified by the sight of its pale green leaves and myriad blossoms perfuming all the air and affording ample food for bees to turn into luscious honey.

The fruit of the mulberry is esteemed delicious by many, and is one of the *healthiest* of fruits certainly. Even if the inhabitants of the farm are not partial to its peculiar flavor, they will find the chickens and poultry of all varieties not by any means so fastidious, as they will fatten finely upon the bright berries that in falling carpet the surrounding ground.

As birds will eat this fruit in preference to any other, it has been found a good plan for orchardists to surround the cherry, plum and peach orchards with a row of the mulberry tree.

Even if we submit the case upon the merits we already have claimed and can prove it possesses, the farmer certainly should plant the mulberry tree; but believing as we do, that before another decade shall have passed over California, sericulture, in all its branches, will be one of our leading industries, we recommend the cultivation of this most useful tree to every farmer in the counties of Santa Clara, Amador, Alameda (certain portions, that is), San Diego, San Bernardino, San Joaquin, Calaveras, Shasta, Sierra, Nevada, Sacramento, Santa Barbara, Los Angeles, Sonoma, Napa, Marin, in short, in very nearly every county in the State. Let every farmer plant a few trees. It cannot possibly be a loss, and may be a very great gain.—Very respectfully, California Silk Culture Association, Mrs. Katharine B. Felton, Pres.; Mrs. Theo. H. Hittell, Cor. Sec'y.

A Joint Meeting.

The communication of the Silk Culture Association was received and placed upon file. Upon motion, "Mulberry Growing and Sericulture" was chosen as one of the subjects for the February meeting, and an invitation was extended to the ladies of the Silk Culture Association to attend and take part in the discussion.

Mr. Wollebproposed "Hardy Flowering Shrubs and Their Cultivation," as another subject for the February meeting, and it was adopted.

Prof. Hilgard addressed the Society upon the subject of "Eucalyptus Growing." A report of the address will be found in another column of this week's RURAL.

J. Lewelling, of Napa county, exhibited a very fine selection of oranges grown in Napa county. The varieties were of the Sicily sweet, Mediterranean sweet, and a bunch of fine seedling oranges, all of them very large, clean and well matured.

[Advertisement.]

More About Water Supply.

The demand on us for information has recently become so great that we are unable to reply to the letters daily received, and we have thus found it necessary to publish this additional circular, and to provide the means for meeting the demands of those who desire wells for domestic, stock and other purposes. As a large demand for the *points* used in the construction of the driven wells has recently arisen here, it has occurred to us that many of them are being put down without authority or license. *The purchase of the point does not give the legal right to put down and use a well.* The driven well is the invention of Col. Nelson W. Green, of New York, and is secured to him by letters patent No. 73,425, No. 4,372 (re-issued) and No. 218,-875. These patents have been exhaustively litigated in the U. S. Circuit Courts, in the States of New York, New Jersey, Massachusetts, Iowa and Minnesota, and in every instance decided in favor of Col. Green. Because of the immense value and utility of these inventions, combinations of large means and influence have been made at different times to defeat the collection of royalties and licenses. In one of these cases reported in 13th Blatchford, page 208, 19 days were occupied by the most able counsel in the argument, and over 3,000 printed pages of evidence and briefs were before the Court on behalf of the plaintiffs alone, and the expenses of the suit were over $100,000. The opinion was prepared by Judge Benedict, and completely established Col. Green's claim at every point. Judges Dillon, Nelson and Blatchford have all rendered opinions to the same effect; and in a hundred other cases, arising out of collateral matters, have the title and right of Col. Green been most fully sustained. Our object in making these statements is to

Caution

All persons against the use of the driven well without authority, and to say that no person or persons have the legal right to put down or use a driven well in California without authority or license from us. We are the exclusive agents and attorneys of Col. Green, for the States and Territories west of the Rocky mountains, and intend to enforce and protect his rights, as well as our own, to the uses and benefits of these patents. Should any person offer to put down a driven well for you, request him to exhibit his authority from us, and if he is not able to do this, you may rest assured that you will be required, sooner or later, to pay license to us.

To answer the constantly increasing demand for information, to guard against

Fraud and Imposition,

And to supply the orders as fast as they may arrive, we have made arrangements with the well-known house of

Huntington, Hopkins & Co.

To keep on hand all materials necessary for the construction of these wells, which will be shipped by them on receipt of the price stated. Upon the receipt of such order by them, or us as stated below, a full and minute letter of instructions as to the manner of constructing these wells will also be sent, so that anyone of ordinary sense can put them down as perfectly as those especially engaged in the business. This letter of instructions—*together with the license*—will be sent with the goods. The articles sent will include everything necessary to a complete and perfect well, and also a pump of sufficient capacity to deliver 900 gallons of water per hour. Without this letter of instructions, and careful attention to the directions it contains, it is more than likely that the attempt to put down a satisfactory well would fail, and thus the goods furnished would prove a partial loss. In adopting these means of putting the driven well within the reach of everyone, the expenses of employing an expert, so called, are avoided, and the cost of the well is thereby so reduced as to be within the reach of everyone. One of these wells can be easily constructed by two men in two days—usually in one day—to a depth of 50 ft.

Where several wells are required in the same neighborhood, the work can be greatly facilitated by purchasing a few additional tools, costing not over $20. These may be returned to us, if not broken, and one-half of the purchase price will be refunded.

When desired, we will send an expert, for cost of transportation and $5 per day. Contracts for large water supplies will be entered into by us upon the most favorable terms—*upon the basis of success or no pay.*

Material for wells not more than 40 ft. in depth, including pump and license, will be sent for $45. Wells of 50 ft. will be supplied for $50, and for each foot over 50 ft., at 40 cts. per foot—to be sent, *in all cases*, before the goods are shipped.

In sending your order, it will be of advantage also to send us as full and accurate a description of the proposed location of the well, the distance—or supposed distance—of the water beneath the surface, the nature of the soil from the surface down—so far as known, the thickness of the different strata, and any other facts likely to be of advantage to you and us in writing our letter of instructions. In any case where, from the statements of facts, we are satisfied water cannot be obtained in satisfactory supply, we shall so state, and will immediately return your money.

We refer, by permission, to: Chas. Miller, Esq., of Huntington, Hopkins & Co., junction of Bush and Market streets; Lambert & Green manufacturers of H. & L. axle grease, 144 Natoma street; M. P. Holmes, carriage manufactory, 327 and 329 Sutter street; Judge Robert Thompson, 76 Montgomery block; R. H. McDonald, President of the Pacific Bank. All of San Francisco.

For circulars and other information, address BABCOCK, HOWARD & Co., 40 Merchants' Exchange, S. F., Cal.

NOTE.—No letter of instructions will be sent, except it is sent with the goods.

Still Progressive.

The PACIFIC RURAL PRESS, published by Dewey & Co, S. F., has just completed volume XXIII by giving its readers an extra number during the year ending December, 1881.

The RURAL, both editorially and typographically will bear comparison with any agricultural paper published in the United States.

Its editorial department is under the immediate supervision of a gentleman thoroughly conversant with all matters pertaining to agriculture, and who has labored arduously to place the paper where it now stands, one of the leading agricultural papers of the day.

The various departments, which are too numerous to mention, are all teeming with information, both interesting and useful.

Any one number is fully worth the subscription price, but when the volume is completed and bound in book form, its value is increased 10-fold as a book of reference.

The RURAL proposes hereafter to give its readers at least 25% more reading on the average than in the past.—*Ukiah City Press, Jan. 1882.*

THE PACIFIC RURAL PRESS enters upon volume XXIII, and celebrates the event by enlarging 25%. The PRESS is entitled to a first rank among agricultural papers, and should have a large circulation in Santa Barbara county.—*Santa Barbara Press.*

RUSSIAN WHEAT.—It is reported that in Russia there is under consideration the question of imposing an export duty on grain of half a copeck per lb., in order to increase the resources of the Imperial Commissariat Department. It would seem rather poor policy for a wheat-growing country to put a tax on its crop at the time when competition between supply regions is so sharp.

The Pacific Rural Press

[Established in San Francisco in 1870.]

This is the leading farming journal on the western half of the continent, and second to none in America. It is well printed and illustrated, weekly. Contains an unusual amount of fresh, original farm, household and family circle literature. Careful attention is paid to giving full and reliable weekly market reports. The following are among its ably conducted departments: Editorials on agricultural and other timely and important subjects of live interest to farmers and their families; agricultural, and other useful and ornamental illustrations; correspondence from various quarters of our new and rich developing fields of agriculture on the Pacific coast, embracing new hints and ideas from progressive men and women in all branches of rural industry; Horticulture; Floriculture; The Garden; The Home Circle; The Grange; Young Folks; Domestic Economy; Good Health; Entomological; Sheep and Wool; The Dairy; The Stock Yard; Poultry Yard; The Swine Yard; The Apiary; The Vineyard; Queries and Replies; New Inventions (and illustrations of new and improved machinery); Agricultural Notes; Items of General News, etc. Its columns are studiously filled with chaste, interesting, fresh and useful reading, devoid of questionable literature for old or young and fancifully alluring clap-trap advertisements. Send for sample copies.

Subscriptions, *in advance*, $3 a year. Agents wanted, on liberal pay DEWEY & Co., Publishers.
No. 252 Market St., S. F., Cal.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

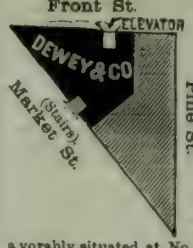
IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

REMITTANCES to this office should be made by postal order or registered letter, when practicable; cost of postal order, for $15 or less, 10 cts.; for registered letter, in addition to regular postage (at 3 cts. per half-ounce), 10 cts

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.



Dewey & Co.'s Patent Agency and Newspaper Offices.

Dewey & Co.'s Patent Agency and the business offices of the Mining and Scientific Press, Pacific Rural Press, Pacific States Watchman and the Fraternal Record are now advorably situated at No. 252 Market Street. Elevator entrance, *No. 12 Front St., S. F.*

Business Offices and Sunny Rooms to Let.

We have some desirable rooms to let adjoining the offices of this paper which will be rented on favorable terms. Stair entrance, No. 252 Market St. Elevator, No. 12 Front St. Parties wishing offices, etc., will do well to call and see them. DEWEY & CO.

$500 Cash in Prizes.

It is only a few years since Messrs. Hiram Sibley & Co. were known at all in the seed business, but in those few years they have advanced with such wonderful rapidity that they are now universally recognized as leading seedsmen. Their warehouse at Rochester is a mammoth building, nine stories high, while in Chicago they occupy a five-story building, and have no room to spare. Mr. Sibley is widely known as proprietor of the 40,000-acre Sullivant farm in Illinois, the largest cultivated farm in the world. Here over 3,000 acres were last year devoted to seed raising.

Just now the firm are specially desirous of obtaining all information calculated to fit them for the most intelligent service of their many customers in the South. To this end they are offering $500 cash in prizes for the best essays on gardening in the southern States. These essays must come from those practically acquainted with all the conditions affecting the subject; and the decision regarding their respective merits will be made by well-known and admittedly competent judges. Full particulars can be obtained by addressing Hiram Sibley & Co., seedsmen, at either Rochester, N. Y., or Chicago, Ill.

Our Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

G. W. MCGREW—Santa Clara county.
M. P. OWEN—Santa Cruz county.
J. W. A. WRIGHT—Merced, Tulare and Kern counties.
JARED C. HOAG—California.
B. W. CROWELL—Humboldt and Trinity counties.
D. W. KELLEHER—Merced, Fresno and San Benito.
A. C. KNOX—State of Nevada.
EDWARD A. WEED—San Francisco.

Volunteer Testimonials of Those Who Have Used Booth's Exterminator.

CENTRAL CITY, Santa Barbara Co., Cal.

A. R. BOOTH.—Your squirrel poison gives good satisfaction. Send us some more. Enclosed find check for amount of bill. KAISER BROS.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired), be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Feb. 1, 1882.

Trade has had a quiet week. Grain prices have been disposed to shade off because of the rains and dullness reported from abroad. The latest foreign news is the following:

LIVERPOOL, Jan. 31.—Wheat: California spot lots are weaker, at 10s 8d@11s 1d. Cargo lots are quiet and steady; the rates are 49s 6d for just shipped, 50s 6d for nearly due, and 51s for off coast.

The Foreign Review.

LONDON, Jan. 30.—The Mark Lane *Express* in its review of the British grain trade for the past week, says: The growing crops remain very healthy. Foreign breadstuffs were weaker. In the Flour trade the nominal supply exceeded the demand, and the possibility of large receipts from the United States exercised a rather depressing influence. Maize was firmly held. Fine Barley was firm, owing to the scarcity. Grinding sorts were dull, and declined 3@6d Friday. For Oats there was a slack demand and prices declined. Cargoes off coast were weaker. Eleven cargoes arrived, of which seven were sold and six withdrawn. Red Winter Wheat on Tuesday was quoted at 54s 3d, but that price was unobtainable. On Friday, No. 2 California was quoted at 53s. The sales of English Wheat during the week were 49,888 quarters, at 46s 3d per quarter, against 34,293 quarters, at 42s 6d in the corresponding week of last year.

Freights and Charters.

The freight market during the past week has been quiet with but few spot charters reported. Those drawn, however show a gradually hardening market. Engagements for the week, both spot and prior to arrival, number 7 vessels, of a register of 8,998 tons, or a carrying capacity of 260,940 ctls. The chartered Wheat fleet in port has now a register of 49,680, or a carrying capacity of 73,620 short tons, or 1,472,400 ctls, against 57,700 tons at the same time in 1881. The disengaged tonnage in port has now a register 34,162, or a carrying capacity of 51,243 short tons, or 1,024,860 ctls against 730 tons at the same time in 1881. The tonnage now on the way to this port has a register of 257,092 tons, against 179,320 tons, at the same time in 1881, and 110,953 tons in 1880.

WHEAT BAGS.—White & Lissak have issued a circular on Wheat Bags, in which they state the supply of 1881 at 46,097,500, including 7,392,500 carried over from 1880, and 5,250,000 made in Oakland during the last two months of that year. The importations for 1881 are thus reduced to 33,455,000. The consumption for 1881 is placed at 29,313,000, exclusive of the second use of bags employed at the local mills, the stock of Oakland, Calcutta and Dundee Wheat Bags on hand in all the warehouses of this city January 1, 1882, being 16,984,000. This is estimated to have sacked 35,000,000 ctls of Wheat. Some of these were sent to Oregon and some were used for other grain. Wheat Bag importers do not look back to last year's business with any feelings of pleasure. What promised to be a remunerative trade at the beginning, was rendered unprofitable by indiscriminate buying. The result was that farmers got cheaper Wheat Bags than in any previous year.

Eastern Grain and Provision Market.

CHICAGO, Jan. 31.—Wheat, firm and higher, at $1 30 cash and February, $1.31⅛ for March. Corn, firmer, at 60⅝ cash, 61½ for March, 66⅝ for May. Oats, weak and lower, at 42½ cash and March, 45½ for May. Rye, Barley and Whiskey unchanged. Pork, strong and higher, at $18 27½ cash, and $18.52½ for March. Lard, stronger, at $11.15 cash, $11.32½ for March.

NEW YORK, Jan. 31.—The markets generally are quiet, but prices for the most part are steady and firm. Wheat is higher under more favorable advices, but exporters were unable to do anything. Barley fairly active and firm; No. 1 Canada, to arrive, $1.15. Provisions are dull and nominal.

Eastern Wool Markets.

BOSTON, Jan. 31.—The Wool market is firm and the demand steady, with but moderate business. Sales of Ohio and Pennsylvania fleeces have been at 44@45½c for X, XX, XXX, and above. Michigan and Wisconsin fleeces sell at 43c for X and medium; No. 1 fleeces, 46@49c ℔ lb. Combing and delaine are firm, and have been in demand at 46@50c, as to quality. Coarse and medium unwashed combing is quiet. In unwashed fleeces sales have been at a wide range of prices, but desirable lots, both fine and medium, command full previous prices. In pulled Wool there is no change. Choice Eastern and Maine super is selling at 45@52½c; common and good supers, 30@33c ℔ lb. California Wool is quiet and unchanged, and sales of foreign Wools have been confined to small lots of Cape and Australian, at previous prices.

BAGS—There is no change in rates.

BARLEY—Feed Barley is quotable 2½c higher, and is firm, but there are few sales.

BEANS—Small White and Pea Beans have advanced about 50c per ctl. Other sorts are unchanged.

CORN—Corn is nominal, in lack of sales, but the value is probably about 2½c less than last week.

DAIRY PRODUCE—Butter is 2½c per lb. lower than on Wednesday of last week, but it is doing a little better than on Saturday last, and values are thought to be hardening a little. Cheese is still scarce and high.

EGGS—Eggs are 1c lower than a week ago, but supplies are being well cleaned up.

FEED—The millers have reduced Bran and Middlings $1 per ton. Oil Cake has advanced to $30. Hay is unchanged.

FRESH MEAT—The Mutton ring is broken and the value has fallen off nearly one-half, 5c ℔ lb. being now the top. Some choice young Lamb goes up to 15c. Beef is unchanged. Hogs are a fraction lower.

FRUIT—Semi-tropical Fruits sold evenly, except that Limes are disposed to do a little better. In Dried Fruit the Raisin market is said to be stiffening a little.

HOPS—Hops are quiet and unchanged. The New York *Producers' Price Current* of Jan. 21st, says:

Receipts have been free but a good many lots are coming to exporters directly; and some lots are delivering to brewers on last month's contracts; the remaining quantity is not sufficient to oppress the market. There are but few transactions making, brewers talking very independently. Dealers buy when favorable opportunities offer, but do not as a rule come up to holders' prices. The best inquiry is for grades at 23c., but few holders are offering anything at all desirable in quality at that price. The feeling among receivers and dealers has been strengthened by the increased activity and stronger holding in the interior of the State.

OATS—Oats are still strong with rates a shade higher

ONIONS—Onions have lost about 10c ℔ ctl during the week and are now abundant.

POTATOES—Potatoes have weakened a little, the outside price being now about $1 75 against $1.90 last week and about the same decline has occurred on all grades.

PROVISIONS—Provisions are quiet and unchanged.

POULTRY AND GAME—Turkeys have recovered and returned to old values. Game Ducks and Tame Ducks are doing better. Fowls are unchanged, except that choice young Roosters bring $7 in some cases.

VEGETABLES—There is no change. Some southern Tomatoes bring 9@10c per lb.

WHEAT—Trade is very slow, and the decline of 2½c in buyers' views restricts sales.

WOOL—Everything is quiet and nominal.

Pacific Coast Weather for the Week.

[Furnished for publication in the PRESS by NELSON GEROM, Sergt. Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending Wednesday, Feb. 1st, at noon, for the stations named:

Date.	Olympia.	Portland.	Roseburg	Red Bluff	Sacram'to	San Francisco	Visalia.	Los Angeles.	San Diego
Thursday.	.19	.24	.13	.02	.13	.38	.00	.00	.00
Friday....	.01	.04	.14	.07	.45	.01	.12	.00	.00
Saturday.	.00	—	—	.00	.00	.00	.00	.00	.00
Sunday ..	.00	.00	.00	.00	.00	.00	.00	.00	.00
Monday ..	.19	.31	.01	.00	.00	.00	.00	.00	.00
Tuesday ..	.13	.12	.67	.12	.25	.24	.00	.00	.00
Wed'eday.	—	.00	.00	.00	.15	.00	.38	.37	.16
Totals	0.52	0 71	0.95	0.21	0.98	0.63	.50	.37	0.16

*Reports missing.
Dash (—) signifies too small to measure.

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., February 1, 1882.

Eng Standrd Wheat..	8¼@ 9	45 inch	9½@ 9¾
Cal Manufacture		40 inch	8½@ 8¾
Hand Sewed, 22x36.	8¾@ 9	Wool Sks Hand Swd	
20x36	8¼@ 8¾	3½ lb	@47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	@49½
Machine Swd 22x36.	8¼@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10¾	Bean Bags	6¾@ 7
Quarters	6 @ 6¾	Twine, Detrick's A	32½@35
Eighths	4¼@ 4½	" " AA	35 @37
Hessian, 60 inch	@12		

Domestic Produce.

WHOLESALE.

WEDNESDAY M., February 1, 1882.

BEANS & PEAS.	
Bayo, ctl	2 00 @2 25
Butter	3 00 @3 25
Castor	3 50 @4 00
Pea	4 60 @4 75
Red	2 00 @2 25
Pink	2 00 @2 25
Large White	3 00 @3 25
Small White	4 60 @4 75
Lima	— @4 00
Field Peas, b'lk eye1	50 @1 75
do, green	2 00 @2 25
BROOM CORN.	
Southern	3 @ 3½
Northern	4 @ 6
CHICCORY.	
California	4 @ 4½
German	6½@ 7
DAIRY PRODUCE, ETC.	
BUTTER.	
Cal. Fresh Roll, lb.	25 @ 26
do Fancy Brands.	— @ 27½
Pickle Roll	22½@ 26
Firkin, new	22 @ 26
Eastern	20 @ 22½
New York	— @ —
CHEESE.	
Cheese, Cal., lb	18 @ 20
EGGS.	
Cal. Fresh, doz	22½@ 25
Ducks	— @ 25
Oregon	21 @ 22
Eastern, by expr'ss	— @ —
Pickled here	— @ —
Utah	— @ —
FEED.	
Bran, ton	— @19 00
Corn Meal	— @39 00
Hay	10 00 @16 00
Middlings	— @28 00
Oil Cake Meal	— @30 00
Straw, bale	62½@— 70
FLOUR.	
Extra, City Mills	5 25 @5 62½
do, Co'ntry Mills	4 75 @5 00
do, Oregon	4 75 @5 12½
do, Walla Walla	4 50 @5 00
Superfine	3 50 @4 25
FRESH MEAT.	
Beef, 1st qual'y, lb.	6½@ 8
Second	5½@ 6½
Third	4 @ 4½
Mutton	4 @ 5
Spring Lamb	12½@ 15
Pork, undressed	5½@ 6½
Dressed	8½@ 8⅞
Veal	7½@ 8
Milk Calves	7½@ 8
do, choice	— @ 10
GRAIN, ETC.	
Barley, feed, ctl	1 65 @1 70
do, Brewing	1 72½@1 80
Chevalier	1 67½@1 72½
do, Coast	1 50 @1 60
Buckwheat	— @1 50
Corn, White	1 80 @1 82½
Yellow	1 80 @1 82½
Small Round	1 80 @1 82½
Oats	1 75 @1 85
Milling	1 80 @1 90
Rye	2 10 @2 25
Wheat, No. 1	— @1 67½
do, No. 2	1 62½@1 65
do, No. 3	1 45 @1 50
Choice Milling	— @1 72½
HIDES.	
Hides, dry	— @ 18
Wet salted	9½@ 11
HONEY, ETC.	
Beeswax, lb	23 @ 25
Honey in comb	15 @ 20
Extracted, light	9 @ 10
do, dark	7½@ 9
HOPS.	
Oregon	20 @ 21
California, new	24 @ 26
Wash. Ter	23 @ 24
Old Hops	— @ —
NUTS—Jobbing.	
Walnuts, Cal	10 @ 11
do, Chile	7½@ 8
Almonds, hd shl lb	8 @ 10
Soft shell	14 @ 15
Brazil	10 @ 11
Pecans	13 @ 15
Peanuts	6 @ 6½
Filberts	14 @ 15
ONIONS.	
Red	— @ —
Silverskin	50 @ 75
Oregon	— @ —
POTATOES.	
Early Rose	1 75 @1 80
Petaluma, ctl	1 70 @1 75
Tomales	1 65 @1 70
Humboldt	1 60 @1 65
" Kidney	— @1 60
" Peachblow	1 60 @1 65
Jersey Blue	— @ —
Cuffey Cove	— @ —
River, red	1 50 @1 60
Chile	1 50 @1 55
do, Oregon	— @ —
Sweet	1 00 @1 25
POULTRY & GAME.	
Hens, doz	4 50 @ 5 50
Roosters	4 00 @ 7 00
Broilers	4 00 @ 5 00
Ducks, tame, doz.	5 50 @ 7 00
Mallard	2 50 @ 3 00
Sprig	1 50 @ 1 75
Teal	75 @ 90
Widgeon	1 00 @1 12½
Geese, pair	1 50 @1 75
Wild Gray, doz.	1 75 @2 00
White do	50 @1 00
Turkeys	12½@ 14
do, Dressed	13 @ 15
Turkey Feathers, tail and wing, lb.	10 @ 20
Snipe, Eng	1 50 @2 00
do, Common	50 @ 75
Quail, doz	75 @ 80
Rabbits	1 00 @1 25
Hare	1 50 @1 75
Venison	5 @ 7
PROVISIONS.	
Cal. Bacon, extra clear, lb	13 @ 13½
Medium	12 @ 13½
Light	13 @ 14
Lard	13 @ 17
Cal. Smoked Beef	11½@ 12½
Shoulders	9½@ 10½
Hams, Cal	12½@ 13½
do, Eastern	16 @ 16½
SEEDS.	
Alfalfa	12 @ 13
do Chile	— @ —
Canary	3½@ 4
Clover, Red	14 @ 15
White	45 @ 50
Cotton	— @ 20
Flaxseed	2½@ 3½
Hemp	— @ 5
Italian Rye Grass	25 @ —
Perennial	25 @ —
Millet, German	10 @ 12
do, Common	7 @ 10
Mustard, White	1¾@ 2¼
Brown	2½@ 3
Rape	2½@ 2¾
Ky Blue Grass	20 @ 25
2d quality	16 @ 18
Sweet V Grass	— @ 75
Orchard	20 @ 25
Red Top	— @ 15
Hungarian	8 @ 10
Lawn	30 @ 40
Mesquit	10 @ 12
Timothy	9 @ 10
TALLOW.	
Crude, lb	6 @ 6½
Refined	9½@ 10
WOOL, ETC.	
FALL—1881.	
San Joaquin	9 @ 14
do, Lamb	13 @ 15
Southern Fall	9 @ 12
do lambs	13 @ 14
Northern, free	16 @ 20
do, defective	14 @ 16
Mountain, free	16 @ 18
do, slightly seedy.	13 @ 15
Humboldt & Mendocino	18 @ 21

Leather.

[WHOLESALE.]

WEDNESDAY, M., February 1, 1882.

Sole Leather, heavy, lb	30 @ 32
Light	25 @ 28
Jodot, 8 to 10 Kil., doz	36 00 @46 00
11 to 13 Kil	50 00 @60 00
14 to 16 Kil	65 00 @72 00
Second Choice, 11 to 16 Kil	40 00 @65 00
Simon Ullmo, Females, 12 to 13 Kil	52 00 @56 00
14 to 15 Kil	60 00 @64 00
16 to 17 Kil	66 00 @68 00
Simon, 18 Kil	— — @57 00
20 Kil	— — @60 00
24 Kil	— — @65 00
Kips, French, lb	— 85 @ 1 20
Ca', doz	55 00 @60 00
French Sheep, all colors	12 00 @15 00
Eastern Calf for Backs, lb	1 00 @ 1 25
Sheep Roans for Topping, all colors, doz	9 00 @10 00
For linings	6 50 @10 00
Cal. Russet Sheep Linings	3 00 @ 5 50
Boot Legs, French Calf, pair	— — @ 4 50
Good French Calf	— — @ 4 00
Best Jodot Calf	4 75 @ 5 00
Leather, Harness, lb	35 @ 40
Fair Bridle, doz	45 00 @66 00
Skirting, lb	33 @ 37
Welt, doz	30 00 @36 00
Buff, ft	17 @ 20
Wax Side	19 @ 20

Signal Service Meteorological Report.

SAN FRANCISCO.—Week ending January 31, 1882.

HIGHEST AND LOWEST BAROMETER.

Jan. 25	Jan. 26	Jan. 27	Jan. 28	Jan. 29	Jan. 30	Jan. 31
30.064	30.121	30 309	30.288	30.257	30.385	30.31
29.852	30.046	30.121	30.198	30.221	30 257	29.97

MAXIMUM AND MINIMUM THERMOMETER.

53	54	50	51	50	52	52
43	47	44	43.5	42	42	47

MEAN DAILY HUMIDITY.

72.7	83	67.7	65	80.3	80	68.3

PREVAILING WIND.

SW	S	W	E	W	W	NW

WIND—MILES TRAVELED.

119	208	156	120	138	150	298

STATE OF WEATHER.

Fair.	Fair.	Fair.	Fair.	Clear.	Fair.	Fair.

RAINFALL IN TWENTY-FOUR HOURS.

.06	.33					.24

Total rain during the season, from July 1, 1881, 8.26 inches.

Retail Groceries, Etc.

WEDNESDAY M. February 1, 1882.

Butter, California		Rice	8 @ 10
Choice, lb	45 @ 55	Yeast Powdr, doz.	1 50 @2 00
Cheese	17 @ 25	Can Oysters, doz.	2 00 @3 00
Eastern	25 @ 30	Syrup, S F &old'n.	75 @1 10
Lard, Cal	— @ 18	Dried Apples, lb	10 @ 15
Eastern	20 @ 25	Ger. Prunes	12½@ 20
Flour, ex.fm.bbl	8 00 @9 00	Figs, Cal	9 @ 10
Corn Meal, lb	2½@ 3	Peaches	15 @ 25
Sugar, wh crushd.	12½@ 13½	Oils, Kerosene	50 @ 60
Light Brown	8 @ 9½	Wines, Old Port	3 50 @5 00
Coffee, Green	23 @ 35	French Claret	1 00 @2 50
Tea, Fine Black	50 @1 00	Cal. doz bot	2 00 @4 50
Finest Japan	55 @1 00	Whisky, O K, gal	3 50 @5 00
Candles, Adm'te	15 @ 25	French Brandy	4 00 @8 00
Soap, Cal	7 @ 10		

General Merchandise.

WHOLESALE.

WEDNESDAY M., February 1, 1882.

CANDLES.	
Crystal Wax	16 @18
Paraffine	20 @—
Patent Sperm	25 —28
CANNED GOODS.	
Asartd Pie Fruits.	
2½ lb cans	2 25
Table do	3 50 @ —
Jams and Jellies	3 75 @ —
Pickles, hf gal	3 25 @ —
Sardines, qr box	1 67 @ —
Hf Boxes	2 50½@1 90
Merry, Faull & Co.s Preserved Beef	
2lb, doz	3 25 @3 —
do 4 lb doz	6 50 @6 —
Preserved Mutton	
2 lb, doz	3 25 @3 50
Beef Tongue	5 75 @6 00
Preserved Ham, 2 lb, doz	5 50 @5 60
Deviled Ham, 1 lb, doz	3 00 @3 50
do Ham ½ lb doz	2 50 @ —
Boneless Pigs Feet	
3lbs	3 50 @3 75
2 lbs	2 75 @ —
Spiced Fillets 2 lbs	3 50 @ —
Head Cheese 3 lbs.	3 50 @ —
COAL—Jobbing.	
Australian, ton.	— @ 8 50
Coos Bay	6 50 @ 7 50
Bellingham Bay	— @ —
Seattle	7 00 @ —
Cumberland	— @13 00
Mt Diablo	— @ —
Lehigh	— @ —
Liverpool	— @ —
West Hartley	— @ 9 00
Scotch	— @ 8 50
Scranton	— @ —
Vancouver Id	— @ —
Wellington	— @ 9 00
Charcoal, sack	— @ —
Coke, bush	— @ —
COFFEE.	
Sandwich Id lb.	— @ —
Costa Rica	12 @ 14
Guatemala	12 @ 14
Java	18 @ 20
Manilla	15 @ —
Ground, in cs	— @ 22½
FISH.	
Sac'to Dry Cod	— @ — 5
do in cases	— @ — 5½
Eastern Cod	— 7 @ — 7½
Salmon, bbls	7 00 @ 7 50
Hf bbls	3 50 @ 4 00
1 lb cans	1 12½@ 1 22½
Pkld Cod, bbls.	— — @ — —
Hf bbls	— — @ — —
Mackerel, No. 1	
Hf bbls	9 50 @ 10 00
In Kits	1 75 @ 1 85
Ex Mess	3 50 @ 4 00
Pickled Herring, box	3 00 @ 3 50
Boston Smoked Herring	65 @ — 70
LIME, etc.	
Plaster, Colden Gate Mills	3 00 @ 3 25
Land Plaster, ton	10 00 @ 12 50
Lime, Snta Cruz bbl	1 25 @ 1 50
Cement, Rosendale	1 75 @ 2 00
Portland	3 75 @ 4 00
NAILS.	
Assrtd sizes, keg.	3 75 @ 4 00
OILS.	
Pacific Glue Co's Neatsfoot, No.1	1 00 @1 00
Castor, No. 1	— @1 05
do, No. 2	— @ 95
Baker's A A	— @1 30
Olive, Plagnoil	5 25 @5 75
Possel	4 75 @5 25
Palm, lb	9 @ —
Linseed, Raw, bbl	— @ 60
Boiled	— @ 65
Cocoanut	60 @ —
China nut, cs	68 @ 69
Sperm	1 40 @ —
Coast Whales	35 @ —
Polar	— @ —
Lard	— @1 00
Petroleum (110°)	18 @ 22
Petroleum (150°)	28 @ 35
PAINTS.	
Pure White Lead.	7¾@ 8
Whiting	1½@ —
Putty	4 @ 5
Chalk	1½@ —
Paris White	2½@ —
Ochre	3½@ —
Venetian Red	3½@ —
Averil mixd Paint gal	
White & Tints	2 00 @2 00
Green, Blue and Ch Yellow	3 00 @3 50
Light Red	3 00 @3 50
Metallic Roof	1 30 @1 60
RICE.	
China Mixed, lb	4½@ 5
Hawaiian	4½@ 5
SALT.	
Cal. Bay, ton	14 00 @22 00
Common	6 50 @14 00
Carmen Id	14 00 @22 00
Liverpool fine	14 00 @20 00
SOAP.	
Castile, lb	9 @ 10
Common brands	4½@ 6
Fancy Brands	7 @ 8
SPICES.	
Cloves, lb	37½@ 40
Cassia	19 @ 20
Nutmegs	85 @ 90
Pepper Grain	15 @ 16
Pimento	16 @ 17
Mustard, Cal ½ lb Glass	— @1 25
SUGAR, ETC.	
Cal. Cube lb	— @ 11½
Powdered	— @ 12
Fine Crushed	— @ 11½
Granulated	— @ 10¾
Golden C	— @ 9½
Cal Syrup, kgs	65 @ —
Hawaiian Mol'sses	25 @ 30
TEA.	
Young Hyson, Moyune, etc	40 @ 65
Country pkd Gunpowder & Imperial	35 @ 75
Hyson	30 @ 35½
Fooo-Chow O	27½@ 32
Japan, medium	35 @ 37½

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., February 1, 1882.

FRUIT MARKET.		Peaches	— 11 @— 11½
Apples, bx	— 75 @ 2 00	do pared	— 14 @— 18
Bananas, bnch,	2 50 @ 4 00	Pears, sliced	— 9 @— 9½
Cocoanuts, 100	6 00 @ 7 00	do whole	— 7 @— 8
Cranberries, bbl	14 00 @16 00	Plums	— 5 @— 6
Limes, Mex	10 00 @12 00	Pitted	— 13 @— 14
do, Cal, box	1 00 @ 4 00	Prunes	— 9 @— 12½
Lemons, Cal, bx	1 50 @ 3 50	Raisins, Cal, bx.	— @ 2 50
Sicily, box	6 50 @ 7 50	do, Halves	— @ 2 75
Australian	— — @— —	do, Quarters	— @ 3 00
Oranges, Cal, bx.	1 50 @ 3 00	Eighths	— @ 3 25
do, Tahiti M	— — @— —	Zante Currants	— 8 @— 10
do, Mexican.	— — @15 00	**VEGETABLES.**	
do, Loreto	— — @— —	Artichokes, doz.	— — @— 50
Pears, bx	— 75 @ 2 00	Beets, ctl	— — @— 65
Pineapples, doz	7 00 @ 8 00	Cabbage, 100 lbs	— 75 @ 1 00
DRIED FRUIT.		Carrots, sk	— 30 @— 60
Apples, sliced, lb	— 6 @— 6½	Cauliflower, doz	85 @ 1 00
do, evaporated	— 10 @— 11	Garlic, lb	— 1½@— 2
do, quartered	— 5 @— 5½	Lettuce, doz	— 10 @— —
Apricots	— 15 @— 17	Mushrooms, lb	— — @— 15
Blackberries	— 14 @— 16	Okra, lb	— 5 @— 8
Citron	— 28 @— 30	Peas, green, lb	— — @— 15
Dates	— 9 @— 10	Parsnips, lb	— — @— ¾
Figs, pressed	— 4 @— 6	Squash, Marrow fat, ton	10 00 @12 00
do, loose	— 3½@— 5	Tomatoes	— 7 @— 10
Nectarines	— 14 @— 15	Turnips, ctl	— — @— 75

1882.

Pacific Mail Steamship Co.

The Steamships of this Company will sail from SAN FRANCISCO during the year 1882 as follows:
From wharf, corner of First and Brannan Sts., Hour of departure, 2 P. M.,

For Yokohama and Hong Kong.

CITY OF PEKING, February 11, July 29, May 6, October 19

CITY OF TOKIO, January 7, June 22, April 1, Sept. 13, Dec. 5

Connecting at Yokohama with Steamers of the Mitsu Bishi Co for Hiogo, Nagasaki and Shanghae. Excursion tickets to Yokohama and return at special rates.

For Sydney and Auckland Via Honolulu

CITY OF NEW YORK	CITY OF SYDNEY.
March 11th, July 1st, October 21st.	January 14th, May 6th, August 26th, December 16th.
ZEALANDIA.	AUSTRALIA.
April 8th, July 29th, November 18th.	February 11th, June 30, September 23d.

Round the World Trip, via New Zealand and Australia, $650.

For New York, via Panama.

ON THE 4TH AND 19TH OF EVERY MONTH, At 12 o'clock, noon. Taking Passengers and freight for Mexico, Central American and South American ports, for Havana and all West India ports; for Liverpool, London and Southampton; for St. Nazaire, and for Hamburg, Bremen and Antwerp

WILLIAMS, DIMOND & CO., Gen'l Agents.

Sewing Machines.

Several first-class styles, good as new, will be sold at a bargain. Call on or address H. F. D., this office.

AMERICAN CONCENTRATED LYE,

Manufactured by

Geo. T. Lewis & Menzies Co., of Philadelphia.

THE

AMERICAN LYE

IS THE

Purest, Strongest and Best.

IT WILL GO FARTHER THAN ANY OTHER.

AN INSECTICIDE

AND A

FERTILIZER.

CONCENTRATED LYE has proved itself where used of sufficient strength to be thoroughly reliable and effectual, and has the great property of fertilizing the tree and soil, as potash is one of the natural constituents of both, and is required for the health of the tree. Its use is therefore recommended. Sixty pounds of the Concentrated Lye of the American Lye Co. is equivalent to 100 pounds of commercial potash.—*Report to San Jose Horticultural Society, 1881.*

THE AMERICAN LYE was specially recommended by Dr. Chapin in his address at the Sacramento Convention, and is the standard basis for the alkaline now being used by tree growers in all parts of the State.

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WHOLESALE AGENTS,

121 and 123 Market St., S. E. cor. Main,

SAN FRANCISCO, CAL.

The Agents beg to notify the Wine Growers and Orchardists that the demand for this **UNRIVALLED BRAND** *has been so enormous as to temporarily deplete stock. We have, however,* **LARGE SUPPLIES** *en route, and shortly due. Hold your orders. No other Lyes will do the work as well.*

Supplies will be Here Next Week.

WM. T. COLEMAN & CO.

GEO. BULL & CO.,

—IMPORTERS OF—

Agricultural Implements.

AND SOLE AGENTS FOR THE

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Celebrated Straw and Wood-burning Engines, Separators and Horse-Powers.

Also a complete assortment in stock of the J. I. CASE PLOW CO.'S Center and Side draft Wood and Steel-beam, Racine Chilled, Breaking, Vineyard, Sulky and Gang Plows and Harrows.

Every plow or implement sold is warranted to give unexceptional satisfaction, or money refunded. Send for Catalogue and Price List, or call and examine stock and prices at the store,

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BRANCH HOUSE,

332 Market St., San Jose, Cal.

☞Special inducements offered to Dealers, Farmers and Ranchers.

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SQUIRREL

POISON.

The most successful Poison in use for Squirrel Killing

C. E. WILLIAMS & CO., Proprietors,

STOCKTON, CAL.

Moore's Sulphur Dip; Safe, Sure and Cheap preparation for the cure of Scab in Sheep.

PETALUMA INCUBATOR.

[Illustrated in RURAL PRESS, Dec. 3, 1881.]

Awarded the first premium over the Axford or National and others at the Petaluma fair of 1881.

Furnishing ample heat, easily managed and nothing to get out of order.

PRICES:

200 Egg capacity	$60.00
360 Egg capacity	75.00
600 Egg capacity	90.00

I. L. DIAS,
Manufacturer and Proprietor,
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WIESTER & CO., 17 New Montgomery St., S. F., Agt's

EGGS TO HATCH

From the following varieties:

LANGSHANS,

Black Cochins, Plymouth Rocks, Brown and White Leghorns, Toulouse Geese and Pekin Ducks.

My breeding yards are composed of selected birds from the leading strains mated to secure the best results.

Fair dealing and satisfaction guaranteed. Correspondence promptly answered. Send for circular and prices.

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Thoroughbred

Spanish Merino SHEEP.

We offer for sale 400 HEAD OF YOUNG EWES AND RAMS. Prices always reasonable and terms liberal. Quality and condition superior to any flock in this State.

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E. W. PEET, Agent.

Whitmore's Improved Gear,

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Buckwagons, Buggies and Light Business Wagons.

Weight carried to the extremities of the Axles. Long, soft, double sweep springs. No side sway or pitching motion. It is jointed, relieving all strain.

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1507 Polk St., San Francisco, Or Charles Whitmore, Traveling Agent for the Pacific Coast.

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For Warming and Ventilating Private Residences and Public Buildings.

Introduced into TEN PUBLIC BUILDINGS and over FORTY PRIVATE RESIDENCES the past year with satisfactory results. Less attention and less fuel required to heat 4 rooms with this system than would warm 1 room with the open grate. Highest testimonials. Address

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Residence, 1227 Eleventh Avenue, East Oakland.

40 Comic Transparent Cards, name on, 10 cents, or 50 fine Chromos, 10 cents, Wise & Co., Clintonville, Ct.

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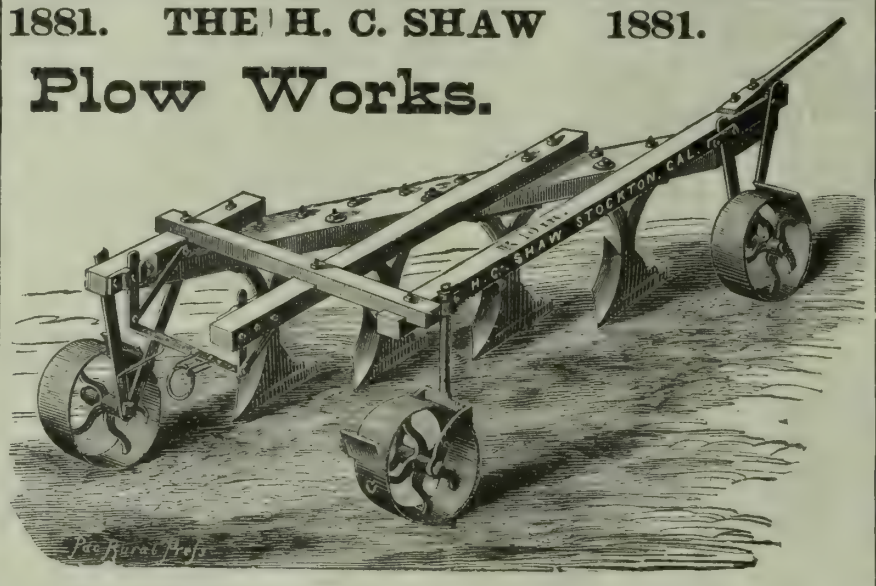
1881. THE H. C. SHAW 1881.

Plow Works.



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THE STOCKTON GANG PLOW,

Over 2,000 of H. C. Shaw's Improved Patent Stockton Gang Plows Sold in Five Years

Cahoon and Gem Seed Sowers, Harrows, Etc. Extras for all Plows and Machines I have sold for the past TWENTY YEARS in this valley. ☞Send for Circular and price list. Always on hand a full stock of Single Plows. Have used these Gangs for over 15 years. Now using 70. Adapted to all soils.—JOHN W. JONES, Atlanta, San Joaquin Co., Cal.

Nathaniel Curry & Bro.,

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FULL STOCK OF COLTS, PARKER AND REMINGTON GUNS, SHARPS, BALLARD, WINCHESTER, KENNEDY, MARLIN, and REMINGTON SPORTING RIFLES; PISTOLS OF ALL KINDS.

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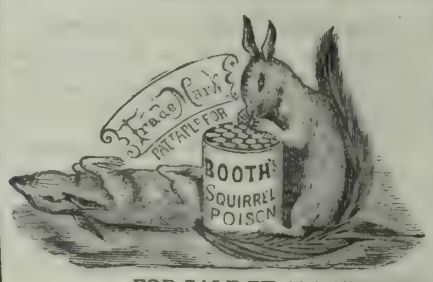

To Squirrels, Gophers, Birds, Mice, Etc.

☞Endorsed by the Grange and all others who have used it.

INFALLIBLE SQUIRREL and GOPHER EXTERMINATOR.

STRENGTH INCREASED. PRICE REDUCED.

Put up in 1 lb., 5 lb., and 5 gallon tins. Manufactured by

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FOR SALE BY ALL WHOLESALE AND RETAIL DEALERS.

FELIX GILLET'S

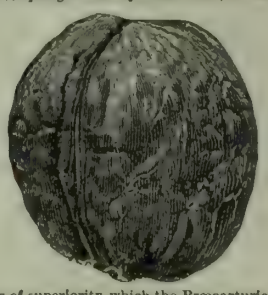
NURSERIES,

Nevada City, - - California.

SPECIALTIES—Nuts of all kinds (Walnuts, Chestnuts, Almonds and Filberts.)

PRŒPARTURIENS.

Or early bearing Walnut, introduced into California from Europe in the spring of 1871 by Felix Gillet, of Nevada City.



The points of superiority which the Prœparturiens possess are:

First—It bears earlier than any other kind, very often when 3 years old; hence its name, Prœparturiens—fertile or precocious.

Second—It is a hardy variety, getting in bloom late in the spring, and being very seldom injured by frost in the spring or fall.

Third—It matures its wood well before the winter; thus insuring a crop of nuts for the ensuing year.

Fourth—It is a regular and prolific bearer.

Fifth—The nut is large, the shell soft, and the meat full and easily extracted from its socket.

☞One, two, three and four-year-old trees for sale. One-year old trees, heavily rooted, sent by mail to any part of California and the United States at $1 per tree, or $10 per dozen, including packing and mailing.

Also, GAND WALNUT, the largest of soft-shell varieties.

SEROTINA or LATE WALNUT, a kind that leafs out late in the spring. Very desirable for a cold climate. One-year-old trees of the two above kinds at the same rates as Prœparturiens.

FILBERTS, CHESTNUTS,

Pears, Cherries, Peaches, Etc.

STRAWBERRIES, RASPBERRIES,

Blackberries, Currants, Gooseberries, Grapes, Etc., Etc.

Send for descriptive catalogue and price list.

SILKWORM EGGS

From Felix Gillet's Cocoonery,

AT $5 PER OUNCE.

Sent by mail to any part of the United States, packing and mailing included, in quantities from 50 cents and over.

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Nevada City, Cal.

CAUTION! I will herewith caution the public in general, and my customers in particular, against buying from agents purporting to be mine, as I HAVE NO AGENTS whatever throughout the State for the sale of my "Prœparturiens" and other valuable kinds of walnuts, chestnuts, filberts, etc.

MULBERRY CUTTINGS FOR SALE,

From choice selected varieties of "MORUS ALBA" or White Mulberry. Also a limited amount of

SILKWORM EGGS.

Address MRS. S. A. SELLERS, Antioch, Cal.

VIZELICH'S

Insect Destroyer

AN IMPORTANT INVENTION.

[From a Stockton Paper].

Nicholas Vizelich had his Insect Destroyer on exhibition to-day in Courthouse square before a crowd of admiring farmers. The Destroyer is a box shaped structure, five feet wide, and mounted on wheels. The machine is applied with two force pumps, one forward and the other aft, with a small smoke stack in the middle. The liquid with which the scale bugs and the phylloxera are vanquished is a composition specially prepared by Mr. Vizelich, and is stored within the box. In a compartment underneath the liquid is a furnace for heating it so as to melt the frost off the trees and thereby get at the bugs and insects. An additional supply of the liquid may be carried in a barrel mounted on wheels. With the pump the water may be sent through a garden hose to a hight of upwards of 50 ft. Mr. Vizelich gave partial illustrations of the working of his invention to-day in the square, and threw a stream to the top of the cedars holding the hose in one hand and working the pump with the other. The new invention worked excellently, and the farmers who watched it operate said that it would not be many months before every orchard and farm in the country would have one of Vizelich's Insect Destroyers. They can be manufactured of any size, from those designed to be worked by one man to a machine large enough to be worked to advantage by a dozen men. The warm liquid runs into the crevices in the bark of the trees and dislodges and kills the vermin.

"VIZELICH'S DESTROYER" will be made in three sizes—one of 65, one of 125 and one of 500 gallons for field use.

For full information address the inventor,

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SEED WHEAT and OATS,

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I have a few thousand left of my half-yearling or June Budded Trees, from 15 to 18 inches, consisting of

Lemon Cling, Smock's Free, Crawfords, etc. Also, Royal and Large Early Apricot.

Price, $15 per 100 this season. I am also prepared to make contracts for the season of 1882-83.

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For sale, all kinds of Fruit Trees, Vines and Fruiting Shrubs raised without irrigation. Also, a general assortment of Evergreen Trees and Shrubs, deciduous Flowering Shrubs; Roses in assortment. Conservatory and Bedding Plants in great variety. Send for Catalogue and List of Prices. Address W. H. PEPPER,
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FLOWER SEEDS. FRUIT TREES.

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Alfalfa, Red and White Clover,

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Also, a large and choice collection of FRUIT and ORNAMENTAL TREES,

BULBS, ROSES, MAGNOLIAS, PALMS, ETC., AT REDUCED PRICES.

Budding and Pruning Knives, Greenhouse Syringes, Hedge and Pole Shears.
☞Price List ready Jan. 1st THOS. MEHERIN, 516 Battery St., San Francisco.

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CONTAINING

Many New and Rare Fruits,

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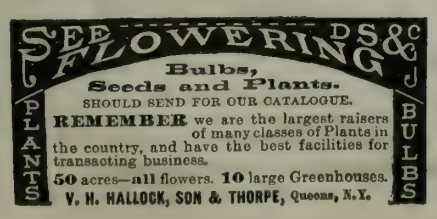

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New Perennial Rye Grass Seed,

Received by the last Australian steamer.

NOTE.—Those who have tried this variety of Grass know its superior qualities over other kinds, either for Hay or Feed; also, its hardiness and adaptability where irrigation is not convenient. This is a superior lot of Seed, as any one intending to sow can ascertain by calling and examining at the old stand

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Orange and Lemon Trees.

ABSOLUTELY FREE FROM SCALE.

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—AT THE—

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We desire to call attention to our stock of native fruit trees, viz: Petite Prunes, Silver Prunes, Yellow Egg and Coe's Golden Drop Plums, Bartlett Pears, Apricots, Apples, Cherries, Peaches, etc. Also 100,000 Rooted Grape Vines of leading kinds, such as Muscat, Tokays, Hamburgs, Zinfindel, Seedless Sultana, etc. Also ornamental trees and plants, such as Magnolias, Arbor Vitæs, Pines, Cypress, Palms, etc. Orange and Lemon trees, best budded varieties. Also Elms, Maples, Poplars and Mulberries for avenue and street planting—in fact everything usually kept in first-class Nurseries. We have many new and rare Fruits and Plants, for description of which our Catalogue will be mailed free to any address. Office and Tree Depot, I and Seventh streets, near Courthouse, Sacramento. Address all communications CAPITAL NURSERIES, P. O. Box 407, Sacramento, or ORANGE HILL NURSERIES, Penryn, Placer county, Cal. WILLIAMSON & CO., Proprietors.

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It is manufactured solely of Bones and residues of Meats dried and pulverized in such manner that all the Calcium, Phosphates, Carbonates, Nitrates and Potassium, which are the main assimilators to plants, are entirely preserved in the Fertilizer and render it most valuable to the cultivators of the soil.

Stable manures require frequent irrigation in order to develop its properties; it is expensive, voluminous, and requires great labor to spread and subsoil it; it propagates weeds, worms, snails and destructive animalcules, the pests of the farmer. On the other hand, Bone Powder can be easily handled, transported at low rates of freight, in bags. It checks the propagation of insects and luxuriates the growth of hops, vines, fruit trees, etc.; can easily be spread around the plants and is most efficacious as an impediment to the rapid and terrible encroachment of the PHYLLOXERA.

The Fertilizer should be sown by hand on the ground when it is moist like seed, and then harrowed. About 400 pounds is the quantity for an acre. Price, $40 per ton.

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Abstract from 19th Annual Statement of the

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CASH CAPITAL fully paid up	$750,000 00
RE-INSURANCE RESERVE	306,260 52
RESERVE FOR UNADJUSTED LOSSES and all other Liabilities	55,675 77
NET SURPLUS	127,979 51
SURPLUS AS TO POLICY HOLDERS	877,979 51
INVESTED IN U. S. GOVERNMENT 4½ BONDS	639,900 00
LOSSES PAID	4,500,000 00

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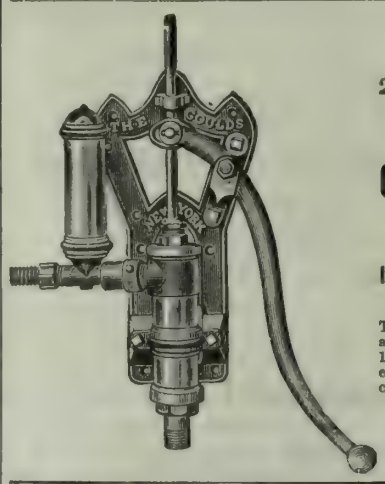
Anderson, Shasta County, Cal.



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INSECT EXTERMINATING LIQUIDS.
This Pump has been gotten up expressly for the purpose noted. The working parts are constructed entirely of Brass and are not affected by the corosive solutions used in them The sale of over 100 of these Pumps last year—principally in the Santa Clara valley is strong testimony as to their merit. Further information can be obtained by addressing the Agents,
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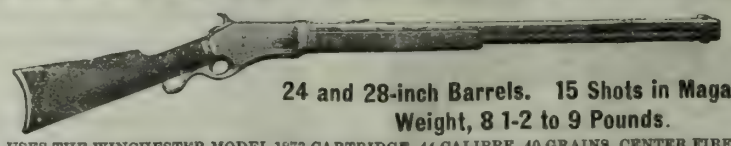

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Weight, 8 1-2 to 9 Pounds.
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Out of 500 Glass Balls thrown from a trap, 479 were broken with this Rifle. Prices Low. Circulars on application to
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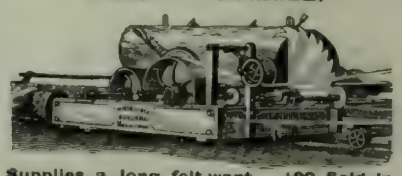

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Every owner of a Farm Engine located in moderately timbered country can find profitable employment the year round by purchasing one of these Mills.
Every owner of a timbered lot is interested in having one of these Mills in his neighborhood. No more hauling logs to mill. All the waste saved.
Write for Circulars and Price Lists, and address of nearest Agent. [Name this Paper.]
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Measure around chest over vest for undershirt; around waist under vest for drawers. Goods sent C. O. D. per W. F. & Co. Price, $6 a suit.

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Weight, all told, 600 lbs.
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APPLES—4 ft., 15 to 20c.; Astrachan, Harvest, Lawver, Pearmains, Nickajack, Pippins, Ben Davis, &c. PEACHES—3 to 4 ft., 15c.; Alexander, Briggs, Foster, Crawfords, Chinese Cling, Gen. Lee, Lemon Cling, &c. APRICOTS—3 to 4 ft., 20c.; Moorpark, Breda, Royal, Early Golden, &c. PLUMS—20c.; best varieties of earliest and latest. NECTARINES—Large Red, yearling trees only, 10c. KAKIS—2 1-2 ft., 20c. Also, 25 from 1 to 10 early Oranges, Walnut, Butternut, Madeira, Hickory, Pecan, Carolina Poplar, Catalpa, Pawpaw, Ash, Maple, Box Elder, Tulip tree, Sassafras, Magnolia, Sour Gum, Basswood, Elm, choice Evergreens, and many more; besides all kinds of Berries and Grape Vines, Strawberry, and other cuttings.
Besides I have 5 kinds each of Broomcorn, Sugar Cane, Dwarf, and well-tested Potatoes; also, Artichokes, Hop roots, Cotton seed, BAMBOOS, Peanuts, Bald Barley, the most valuable forage plants, and many other useful and profitable seeds for the farm. Also a pound of Corn, 25 to 50 cents each. ☞ CATALOGUES FREE.
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JAS. A. PERRY, of River View Stock Farm, Wilmington, Ill., has in Petaluma, Sonoma county, several fine Norman stallions of his last importation direct from France. Catalogues on application to Jas. A. Perry, Fashion Stables, Petaluma, Cal.

Adams' Patent Pillow Sham Holder
Thousands have proved it the best. Can be adjusted to any ordinary bed. Black walnut and nickel plate, $2.25; cedar and brass, $1.75. Sent by mail with directions. G. W. WAGGONER, General Agent, 405 Tenth St., Oakland, Cal.
☞ The trade supplied ☜

PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, FEBRUARY 11, 1882. Number 6

A Grand Irrigation Scheme.

California is interested in anything which is being done in irrigation enterprises everywhere, and not less in endeavors which promise to increase the world's wheat supply. We read in an English exchange that the India Office is lending its sanction just now to an enormous scheme for the reclamation of the waste lands of the Punjab. The waters of the five rivers which give a name to that region, flow wastefully away to the sea, leaving a large tract of desert land, some of which was once fertile, to be the home of nothing and nobody. Those same rivers are sufficient to make that same desert blossom as a rose. The work of cutting canals, which would afford means both for navigation and irrigation, would be enormous; but so far is it thought feasible, that the India Office has undertaken to use the canals, paying tolls for its transit, and to buy the irrigating water, undertaking on its own account to collect the water rent from the natives. Engineering experts declare that the special work can easily be done, and reports have been made to the India Office which show that the land to be reclaimed has soil so rich in alluvial deposit from the Himalayas, that we may reasonably anticipate the time when a great region, now suffering only from want of water, will become the great wheat-bearing territory of India. Some portions of the great doab which it is proposed to reclaim—a doab 50,000 square miles in extent—have undoubtedly been both inhabited and highly fertile in their day. In some cases the canal is almost made, the unused bed of diverted rivers lying ready, so that the earlier portion of the great work will be comparatively easy.

Our Valentine.

We print upon this page a valentine for our youngest friends. The older boys and girls, and the young men and young ladies, will no doubt be fully occupied with sending packages of sentiment and nonsense to each other. But the little toddlers of the nursery will like to have a valentine of their own, so we send them this pretty picture—a basketful of babies. How did they get in? How will they get out?

A BUSHEL OF BABIES—GOOD MEASURE.

Wheat and the Electric Light.

Shall we ever see the San Joaquin valley lighted by electric lights to hasten the ripening of wheat? Probably not; for there is nothing to interfere with the ripening of the grain, providing there is water enough to accomplish the growth of the plant. But in England it is not so; the problem there seems to be not to secure growth, but an opportunity for ripening; so the electricians are seeing what they can do to hurry up the maturity, so as to get the grain out of the way before the rains which come at the usual harvest time can injure it. We read, that early in the past year, wonders of corn raising were practically demonstrated. While the wheat-fields were yet green and the tender blades gave but their summer promise of goodly growth, a bundle of full-sized grain, in stalk, was exhibited at the Tunbridge Wells show of the Bath Agricultural Society. This ripened sample of a spring crop had been grown by the electric light.

How the electric light can be produced cheaply enough to use on such a low priced crop as wheat it is difficult to imagine, but there is no objection to rich men experimenting with such things as much as they like. They now and then bring to light facts which are of universal application and thus all are benefited. If England can grow wheat by electric light in competition with the free sunshine of California, we shall surely think that there must be something the matter with Dame Nature or else with our understanding of her.

There is rather more prospect of success in English wheat growing by some artificial means of drying the grain when untimely showers come in harvest, than in hastening the ripening by artificial lightning.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Smut and Bluestone.

EDITORS PRESS:—After all that has been written on this subject, we only know the effect of smut as a disease. It makes the kernel of wheat—or the flour part—*black* and *soft* instead of *white* and *hard*. In regard to the remedy, we know that bluestone—good bluestone—properly applied, will prevent or circumvent the disease.

Fourteen years' experience on our ranches convinces me that if bluestone is dissolved in cold water till no more will dissolve, and the wheat immersed in half sacks, where it is so loose that the water can get around every grain, and the bluestone of good quality, the act of bluestoning wheat is a sure remedy. We have bluestoned, on an average, 1,000 bushels a year, for 14 years, and never had any smut, except on volunteer. But we never trust the operation to hired hands, who dip whole sacks in and out again in a second. A half sack should lie in the water three minutes, and be rolled over several times. We have plowed so dry that the wheat did not come up for two months, and so wet that even sand land was ropy, and never had any smut, while our neighbors had, who claimed to have bluestoned their wheat. So much for the bluestone question.

But I call the previous question. What is smut? How does it communicate the taint? Does it affect the germ when the grain is dry, or does it affect the sprout after germination? How did smut first originate? Does it still originate? Has the soil anything to do with it? Are there certain gases, salts, alkalies, etc., that affect the grain after it is deposited in the soil? If the latent germ is tainted while the grain is dry, it seems to me that bluestoning could do no good. It would scarcely remove the taint, and preserve the germ. On the other hand, if the smutty powder that adheres to the outside of the grain is the cause, and affects the sprout or root after germination, then washing the seed wheat in clean water ought to remove it. But it will not, for that has been tried; we tried that long ago in the States, when bluestone was called blue vitriol. We tried washing with water and with bluestone. The former failed to prevent, and the latter did prevent the recurrence of smut.

One of your correspondent's calls for a scientific investigation. So do I. Science is right nine times out of ten. We want a more critical examination of the subject. Bring out] your glasses, your retorts, your crucibles, your chemical experts, and let us all know what smut is. In rye it is called ergot and is a poison; in corn it is called blast, and is said to be caused by overgrowth or too rapid growth; in barley it is called smut, as in wheat, with this difference: In wheat every kernel in the head smuts, while in barley, rye and corn, sound grains may be found in juxtaposition with the smut.

The RURAL PRESS is a real scientific paper, and its standing as an agricultural paper demands that a solution of this vexed question be given in its columns. It can be done. Nothing is impossible with science, rightly applied. Yet I do not wholly ignore experience.

S. B. MCCORMICK.

Turlock, Stanislaus Co., Cal., Jan. 28, 1882.

[So far as what smut really is, the proposition is easily met. Smut consists of the spores of a fungus plant which grows upon the substance of the plant as a parasite. Its forms are clearly seen with the microscope. In our issue of Feb. 19, 1881, will be found full descriptions of the different species attacking the different grains, and engravings of them as seen with the microscope. But the conditions which lead to the growth of the fungus and the means of destroying it—they are the problems.—EDS. PRESS.]

Shasta County Notes.

EDITORS PRESS:—Several friends having reminded me lately that my pen has long been idle, I lay aside other cares long enough to send you a few hasty items. Shasta county has had a very pleasant winter so far until the present dry spell, with considerable north wind, set in. However, such weather seems to cause no apprehension here, as crops never fail for want of rain. Plowing and seeding are going forward, and all seem hopeful.

A few days ago I had the pleasure of a trip through the highlands, and was greatly pleased to note the improvement of the past year. Several families of the right kind—possessed of some means and a good stock of energy—have moved in the past summer, and are clearing away the brush, and rapidly creating cheerful homes.

The extensive setting out of vines for raisins is much talked of, and as one of our new settlers has had considerable experience in their manufacture, producing, indeed, as fine an article as I have seen in the State, you can look out for Oak Highland raisins before many years.

At one place near the ditch, where ample facilities for water could be had, we saw what seemed to us a wonderful growth of seedling trees. An apricot not yet three years old, over 2 inches in diameter, fully 12 ft. high, with many large branches, was filled with buds. An almond tree almost the same age, as large, with buds turning white, and many other trees and vines showing thrifty growth. We watch their fate with anxiety; if the spring frosts do not catch them, we shall consider it a very encouraging indication in the direction of fruit growing.

There can be no doubt now that this land will all be settled up within a few years; and the fact that the railroad company have lately graded their land adjoining, some of the best as low as $1.25, gives a better opportunity for the settling and developing of the country.

Anderson, our nearest railroad point, has also made considerable advance the past year, the new grist-mill being a great addition. The water question on the highlands is still unsolved, although we had hoped boring for artesian water would have been tried before this.

The ditch is within reach of all and at present very little is used for mining purposes. Were there enough settlers to join in bringing water on their farms it could be done at comparatively small cost.

There is still room for others, and those coming now could not fail to benefit by the experience and labors of the first settlers. We want people who can harmoniously assist in building up an intelligent Christian community, where our children can grow up free from the evil influences of city or village. Such will be warmly welcomed.

An item of experience in sorghum the past year may prove useful to some one. Three varieties were tried, early amber, Chinese imphee and Honduras. The early amber, so highly prized in many places, proved almost worthless here, producing very little either of seed or syrup. Chinese imphee did considerably better; but Honduras far exceeded them, both in seed and syrup. It would certainly pay any one raising sorghum to try the Honduras.—MRS. J. M. K., Anderson, Cal.

SHEEP AND WOOL.

The Angora Goat Business.

EDITORS PRESS:—The white elephant of America:

High hung in air the hoary goat reclined,
His streaming beard the sport of every wind.—*Rogers.*

Aware that my views of the mohair industry were unique, I felt some hesitation in obtruding my humble pen upon your columns. However, since the questions propounded by Mr. Caldwell in your issue of Dec. 10, 1881, are still unanswered, I shall lay aside, for the present at least, both reluctance and diffidence. The question is asked:

What has become of the Angora goat business in California?

For some years past, several breeders have been looked upon as the exponents of the mohair industry on the Pacific coast; but whether they have yielded the distinction through inadvertence or incapacity, I am altogether unable to determine. Some of them have migrated to the State of Virginia, where they have discovered a pastoral bonanza, and have circulated a pamphlet, which you can obtain by addressing the Virginia Angora Co., Mountain Lake, Giles county, Virginia.

The pamphlet is replete with those specious fallacies that have entailed ruin on many a person of moderate means in California. Another $2,000,000 only is required to extricate the Angora from the predicament in which they have placed him. They are operating under the sanction of the State Legislature, and have the decided opinion of an LL. D.

How will a small band of high grades pay compared with a like number of sheep?

The term high grade is indefinite and sometimes equivocal; also a comparison between the sheep and goat is illusive and illegitimate—they are not of the same genus.

Is there a reliable market for the mohair in the United States?

I submit the following to answer:

Martin Kirby, account of sales of mohair of Farr Alpaca Co., for Bogan & Co.:

101 lbs. at 40c		$40 40
88 lbs. at 35c		30 80
Cr.		$71 20
Dr.		
Deduct freight	$12 88	
Commission 5 per cent	3 55	—$16 43
Balance Credit		$54 77

A further reduction of ten dollars must be made for the shearing, which leaves to the producer 23⅔c a pound for first and second quality mohair. Some of the inferior was sold for bedding, and part consigned to the manure pile.

How will the goats thrive in a rough, mountainous country, where there is not much but brush for them to subsist upon?

My experience and observation do not encourage the belief that a mohair industry can be prosecuted successfully in your county. If your mountain will sustain no other form of existence in the world, some species of the goat can be introduced and will thrive. After their introduction they may be a profit, or they may be a nuisance.

What is the average life of a goat in years?

Fifteen years might be considered longevity. A fleece-bearing goat may be said to be in its prime at four years and yields its heaviest clip, subject, perhaps, to some variation on account of constitutional peculiarities, condition or circumstances. Maybe you can compute from this data the information you require.

What can thoroughbred bucks and ewes be had for?

You answer this question yourself in your statement, "not a single breeder advertises in the columns of the PRESS at present."

It is proper to mention that mohair of good quality was, four or five years ago, double the price that it is at present. Some of the causes of the depreciation are stated in the RURAL of Dec. 3, 1881. Also, it will be obvious that the allowance that I have made for shearing is excessive; but I preferred to pay it to a careful hand, rather than to run the risk of having my few valuable animals cut up by some itinerant sheep-shearer, for the females are pregnant at shearing time, and a goat is more difficult to shear than a sheep.

I do not think that California will regret the retirement of the professional goat breeders. Over 30 years have elapsed since the introduction of the mohair goat into America, and yet not a single instance can be cited where anyone has invested for the production of fleece, or even for fleece and mutton, that has been successful. Must it not be evident that there is an arithmetical rule that governs these failures, as infallible as that which governs the growth, development and decline of the human system from infancy to decrepitude? Else, somebody or other would have stumbled onto a success. Each and all have experienced a mysterious counter-current setting precisely in the opposite direction to the placid surface of the stream on which they were induced to embark. None have thus far given a detailed account of their experience in print, preferring to turn quietly and tacitly to some other occupation rather than to acknowledge publicly the extent of their delusions. This has left the press at the mercy of the professsonals and the professors.

The professional lauded his own stock to the highest. He alone had the very best strain of blood that had ever been imported to the country. When a failure was brought to his attention, he assumed a look of profundity, but was reticent, and merely muttered, "Graded bucks."

On the other hand, under whatever obligations other branches of business may be to the so-called schools and colleges of science, the goat business is under none. As in the disastrous decade of Col. Waring's farming, having assumed a false hypothesis to start with, it looks as if they would bankrupt every State in the Union that tolerates them,

"O'er heaven's high towers to force resistless way!"

Nor can it be said that the agricultural press can be entirely exculpated, when they pass unnoticed the collapse of such audacious projects as the attempt to transform the progeny of the 10,000 head of broncos on Guadaloupe island in a few generations into fleece-bearing animals. For stupendous insanity, this undertaking never has been equaled by anything in the United States of America, unless, indeed, it might find a parallel in the attempt of John Brown to capture Harper's Ferry with 16 men.

Again, if I remember rightly, it was only a few years back since the Hon. N. Gilmore was awarded a service of silver plate by some State committee or other, for the interest he took in the Angora; and yet, when his enterprise was forced to the hammer, as far as I am aware, the agricultural press did not give the catastrophe as much as a passing notice. Upon the very closest inquiry, all I could learn was, that the epitaph on the tombstone read thus:

"Drenched with mathematics!"

When we take into consideration the extraordinary progress that has been made during modern times in improving the breed of almost every description of useful animals, the conclusion can no longer be suppressed that the position of the Angora has been very seriously compromised. The extent of his misfortune, however, can only be realized by placing him in contrast with the American Merino of to-day. From the most ordinary materials imaginable the breeders of the Merino have produced an animal that is bordering on perfection; that reflects a lasting renown upon themselves, and conduces to the profit of their patrons. On the contrary, the professional breeders of the Angora were furnished at the outset with the very best stock that the world could supply, selected at the arbitrary command of the Sultan himself. Nevertheless, they have caused embarrassment to everyone, without distinction, that has been deluded by their doctrines, and have actually been obliged to resort to *occasional* importations to counteract the impurities at the fountain-head.

MARTIN KIRBY (73).

Darrah, Mariposa county, Cal.

AN ELECTRICAL STATURE ALARM.—A curious application of electricity is described in *La Lumiere Electrique*. It consists in a device to prevent military conscripts practicing fraud as to their stature by bending their knees. When the youth stands erect against the measuring post, the hind parts of the knees press on electric contacts, causing two bells to ring; the ringing ceases when there is the least bending. The sliding bar which furnishes the measure, has also a contact, which is pressed by the head, whereby a third electric bell is affected. For a correct measurement, the three bells should ring simultaneously. This system, the invention of M. Cazala, is now employed in the Spanish army.

FORESTRY.

Four Rare Trees of Arizona.—No. 2.

[Read before the California Academy of Sciences, by J. G. LEMMON, Oakland, Nov. 21, 1881.]

No. 3.—"Spreading Cone Pine."

Pinus Reflexa, Engel.—The other new Arizona pine has been known for a longer time than *Arizonica*, but so imperfectly, owing to meager specimens and notes of habit, that Dr. Engelmann upon the reception of abundant material, has only this season declared it to be distinct. Whether this conclusion proves correct or not, the tree is one of great rarity and beauty, hence its description cannot fail to interest the Academy and the general reader.

[A communication from Dr. Engelmann, bearing date of Jan. 4, 1882, announces that extensive examination of specimens and notes confirms the position taken that this pine is a distinct new species.—J. G. L.]

History.

This pine has all along been catalogued as a variety of *P. flexilis*, a peculiar species inhabiting the highest and coolest slopes of the mountains of the State of Nevada. This southern tree was particularly characterized by the position taken by the cone-scales; they are always squarrose or reflexed. The characters otherwise agreeing mainly with *P. flexilis*, this was called varity *reflexa*.

As stated, our pine authority has lately raised this southern form to the rank of a species retaining the same name—*reflexa*.

We first met with this tree in the spring of 1881, on the top of Mt. Graham, at an altitude of over 10,000 ft.; also on the highest peaks of the Patagonia mountains. In May of the past season, we found noble specimens of it in the deer park of the Catalina mountains, and in September fine trees were seen on the highest peaks of the Chiricahua range. No doubt nearly all of the high peaks of the southeastern part of the Territory are ornamented by this pine.

Its Near Relatives.

The *Pinus reflexa* closely resembles our magnificent sugar pine *P. Lambertiana*, and, still more closely as to size, the high mountain pine *P. monticola*. It has the same majestic uprise of the trunk, the same reddish-brown, finely-checked bark, the same want of, or shortness of the lower limbs, the same large, long, outreaching upper limbs that give a broad head to the tree; and, lastly, to complete the deception, it hangs its large, long cones, like Chinese lanterns, out from the ends of these arm-like upper limbs. This tree is, in fact, very closely related to the above-mentioned species, so closely that locality, perhaps, is responsible for the slight differences to be soon set forth.

Pines Classified.

Dr. Engelmann, following Endlicher, divides the pine family into two groups or sections, based upon characters of the scales, number of leaves in a fascicle and the condition of their sheaths, as being loose and deciduous, or they are presistent; also upon the characters of the wood, as soft or hard, light or heavy, etc.

One section, *Strobus*, includes those pines whose cone-scales are thin and soft, their exposed portions, called *apophyses*, bearing a marginal boss or umbo at the apex, which is unarmed, *i. e.*, has no prickle. The leaves are always in fives, their sheaths loose and deciduous; the wood soft, white, light, and containing but little resin.

This section embraces our *Lambertiana*, *monticola*, *flexilis*, and the new *reflexa*, described; together with ten Eastern and old world species.

The other section, *Pinaster*, includes those pines whose cone-scales are generally harder, the apophyses, with a dorsal umbo, which is usually armed with a prickle, leaves, 1 to 5 in a fascicle, their sheaths usually persistent; wood, generally harder, heavier, and more resinous.

This larger section embraces our *monophylla*, *edulis*, *Parryana*, *Balfouriana*, *Tarreyana*, the new *Arizonica*, described, *ponderosa*, *Chihuahuana*, *contorta*, *Sabiniana*, *Coulteri*, *insignis*, *tuberculata*, and *muricata*, with thirty-five Eastern and old world species.

Salient Characters.

The *Pinus reflexa* differs from its congeners in the following minor characters, in addition to the salient features given. *Lambertiana* and *monticola* have long-winged seeds, leaves sharply serrate and denticulate at tip, while the new *reflexa* has large wingless seeds; leaves mostly entire and not denticulate; but the most characteristic of the salient features just announced (Jan. 4, 1882) by Dr. Engelmann: "Long-peduncled, cylindric female aments, erect in the first, recurved in the second year, which associate it with the true *Strobi*, while the large wingless seeds distinguish it from the other species of that section."

Added to this is the character first detected, which gives a name to the species, viz., the scales are elongated and the apophyses strongly reflexed. It is these points, principally, that cause this tree to be separated from its nearest ally, the *flexilis*, of Nevada, and give us a new and beautiful tree, well worthy of extensive cultivation—*Pinus reflexa*.

No. 4.—"New Arizona Cypress."

Cupressus Arizonica, Greene.—Lastly we come to the description of a new and charming cypress, of Arizona.

The genus *Cupressus* contains but a few species, all of which are peculiarly distributed. Four or

five are found in Central Asia and the Mediterranean region; 3 or 4 inhabit Mexico; two, or perhaps only one species, on the California coast; one on the slopes of Mt. Shasta; one on the island of Guadalupe, off the coast of the peninsula of California, and now one in Arizona.

Most persons on this coast are familiar with the Monterey cypress, and it may be taken as the type of the genus. The trees are peculiar for the light, finely divided branches that give to the foliage that airy, lovely appearance that has caused the cypress to be so generally liked for ornamenting lawns, streets and cemeteries. Also, like the true cedars of the old world, all the species of cypress are very pliable to influence, and hence are trained to form trees of fanciful shape, bowers, screens, hedges, and the like.

One fact is very interesting in this connection, that the flat-topped appearance, or that flattening of the head of each limb into benches, so generally observed of the tree in its original home on Monterey point, is due entirely to the depressing influence of the ocean winds. In the sheltered interior the same tree, if isolated and untouched by the hand of man, assumes a symmetrical cone or spindle form.

The Family of Cypress.

The Monterey cypress was named by Hartweg *Cupressus macrocarpa*, on account of its very large fruit, often over an inch in diameter. In its limited home on Monterey point, the tree has a flattened top, with spreading branches, with dark gray and somewhat rugose or ridged bark. The scale-like, appressed, imbricated, bright green leaves are obscurely pitted on the back, with often a longitudinal furrow on each side. Another cypress from the coast farther northward, including Marin county, is described under the name of *C. Goveniana*, Gor.; but Prof. Watson has lately declared the characters insufficient for separating this from the *macrocarpa*. It is smaller; branches spreading and somewhat pendulous; branchlets, slender; leaves, mostly without the dorsal gland and furrows; cones smaller, with smaller seeds.

The Shasta cypress also found near Clear lake, is *C. McNabiana*, Murr. It is a small tree with numerous short, slender branchlets; leaves small, deep green, somewhat glaucous, with conspicuous pits or glands upon the back; cones very small, with thin, prominent bosses, the upper usually very prominent and incurved; seeds small and very numerous.

A fourth species of cypress is named from the island where found, *C. Guadaloupensis*. Wat. It is a large tree, the bark flaking off in thin plates, leaving a smooth, claret-red surface; branches drooping and very slender; foliage glaucous-green; glands on the leaves, obscure; cones, large, an inch or more in diameter, strongly bossed; with very large seeds, three or more lines long. Already in cultivation in San Francisco, although known only since 1875, and promising to become a desirable lawn tree.

History of the New Cypress.

The last discovery, *Cupressus Arizonica*, was first heard of last year through meager specimens collected by Mr. Treadwell and sent to Prof. Hilgard of the California University. Here Dr. Engelmann saw them, and from the information that the branches were naked and smooth like manzanita, the Dr. judged them to indicate a new species, and named it *lævicaulis*.

During the summer Mr. Greene discovered it on the high peaks of the San Francisco mountains. He studied it cursorily and published a meager description in the *Botanical Gazette*, under the name of *C. Arizonica*, Greene. In May last, the writer found a dwarfed tree in the Santa Catalina mountains, but could not get good specimens from it. About the same time Mr. Pringle found specimens in the Santa Catalina also, and forwarded them to Dr. Engelmann.

In August last we returned again to Arizona, this time to explore the Chirricahua mountains in the farther corner of the Territory. After varied experiences, hindrances by the outbreak of the Apaches, sickness by overwork and exposure, we found ourselves in September domiciled in the mining tunnel of a hermit of Rucker valley in the south end of the range, and under the slopes of the highest peaks. Soon we were making regular explorations by long trips every third day to some distant mountain and its canyons, the intervening days being necessarily spent in recuperating strength and drying out our collections. Great was our joy when on one of these arduous climbs up a lofty peak, to find on the summit a ridge of over a mile long, thinly clothed with a beautiful cypress. As none had ever been reported from this region, and as we were many miles from the before-mentioned cypress localities, we hoped for an original discovery, and with much labor obtained full specimens of foliage, limbs, fruit, sections of wood, bark, etc., which were forwarded to Dr. Engelmann. He returned the information that the tree was his *C. lævicaulis*, but as Mr. Greene had done the most at bringing out its characters, he must be allowed the honor of naming it.

Its Beauty and Adaptability.

The *Arizonica* is, without doubt, not only the prettiest, but the most pliable of the whole family. We not only found it on this high ridge at an elevation of over 10,000 ft., but also along the streams on both sides at the bases of the long mountain on the general level of Rucker valley, at an elevation of about 5,000 ft. Young and old trees were found in both localities apparently alike in robust appearance as if equally at home on lofty peak or in lowly vale.

The young trees are gems of beauty. The twigs are regularly alternate and form, not flat sprays, like the Lawson cypress, but quadrangular pyramids of foliage. The little twiglets are quadrangular by the four even, longitudinal rows of imbricated leaf-scales. These scales under the magnifier are found to have a deep pit on the dorsum, like the Shasta cypress. The trees often attain a hight of 60 to 80 ft., with a diameter of 4 to 6 ft. The upper limbs of large trees bend gently outward, giving a flattened top to the tree. All the limbs shed off their outer bark leaving the inner smooth, reddish-colored, and clouded with lighter spots from which the bark has recently fallen. The trunk of all the trees, old and young, retains its bark, which is grayish, of medium thickness, and disposed in longitudinal ridges, frequently dividing into reticulations that cut the furrows between into diamonds and rectangles. The cones are large—three-fourths of an inch in diameter—the younger ones bearing a boss near the center of each apophysis which is often elongated and incurved like a spur. The seeds are usually triangular from overlapping, and are of medium size. Singularly enough, but few fertile seeds have been detected in the cones we obtained with such care, so it is problematical whether or not the new cypress will soon be in cultivation

It is but proper to state that Dr. Engelmann writes that he is by no means certain that this Arizona cypress that is so widely diffused, and which has so long remained uncollected, is not identical with some of the Mexican species—a doubt that requires much future exploration and investigation to clear up. But whatever the result, we have the tree over on our side of the line, and it must in future belong to the United States flora, and be frequently described, catalogued and discussed by American botanists. Fortunately, it is very symmetrical, beautiful and tractable; so it becomes a very valuable acquisition to the wonderful products of our coast, and soon—who knows how soon?—we may sit in our own bowers here in the cities of the Great Bay, and yet be shaded by the *Pinus Arizonica* on one side, and the *Cupressus Arizonica* on the other, while we are admiring the growing beauty of rows of *Pinus reflexa* and *Platanus Wrightii* along the street.

[To prevent ambiguity and mistakes, let me add that the popular lawn tree—the "Lawson cypress"—so called, is not a cypress at all, and for that reason has not been described in this article. This tree is at once distinguished by its graceful, flattened or convex sprays of foliage disposed in horizontal plumes or banners.

It is most unfortunate for us who attempt to popularize botanical names, that this lovely tree should be called *Chamæcyparis Lawsoniana*. When we find that to another of our most interesting trees, the "Douglass spruce," the masters have given the unpronounceable name of *Pseudo-tsuga Douglasii*, teachers become discouraged, and the writer heartily joins them in a demand for a shorter, better, more euphonious nomenclature for our trees.—J. G. L., Oakland, Jan. 20. 1882.]

(CONCLUDED.)

THE SWINE YARD.

Notes on Breeds.

EDITORS PRESS:—As "hog literature" is now in order, I will give my experience with Berkshires and Poland Chinas. I have a dozen half-breed Berkshire and Poland China brood sows and a pair of thoroughbred Berkshires of John Rider's importation and breeding. My oldest sow weighs between 300 and 400 lbs., as she runs in the field without any other feed than what she can pick. (The pasture consists of alfillerilla and volunteer barley and wheat.)

Last March three of my sows brought up 20 pigs, which all lived and did well. In September (at six months old) I commenced killing the barrows and selling them in my butcher wagon. Some of them, however, I sold at home for 5½ cents per lb., live weight. They averaged me about $7.50 apiece when sold. The sows were worth as much for pork, but I preferred keeping them over for breeding purposes. I have now 50 pigs from them worth at least $50. To show how prolific these hogs are, one of them was a mother at eight months, and before she is 13 months old, she will have had the second litter.

In the latter part of August, the same three old sows brought forward 25 more, which are worth $3 each—total, $75. For purposes of my own I weaned the second litter while young, and reared them on cows' milk.

It is a bad plan to reckon chickens before they are hatched, but I think I will be safe enough in counting another 25 from the same three sows before the 1st of March, 1882, worth at least $1 each. Now let us see what all these pigs are worth.

20 pigs at $7.50 each	$150
50 " from young sows	50
2d litter of pigs from old sows, 25, at $3. each	75
3d " " " " probably 25	25
	$300

This gives a total increase of $300 from three sows inside of 12 months. Now, it must be remembered, that with the exception of about a fortnight during harvest time, these pigs hunted their own living; and now, during all this cold north-windy weather, they are shifting for themselves, and the most of them are fit for the butcher at any time.

My thoroughbreds are shifting with the rest, and are doing very well; but in all probability will do much better when they get more used to roughing it, as undoubtedly they saw better times on Mr. Rider's ranch than they are now getting.

There is a great deal said now-a-days about the Duroc hog. I have never seen one as yet; but taking notes from Mr. Getchell's own pamphlet, I should consider the Duroc at least a very expensive hog to provide for. According to his own statistics, it would cost from 50 cents to 75 cents per day to feed him; and I am afraid by the time he got old enough and big enough to weigh half a ton, he would have eaten his head off, at the present prices for hog feed. The Duroc may do well enough for a distillery or brewery or slaughter pen, where feed is cheap, but every person who raises hogs can't afford to feed on grain the year round. What we want is a general purpose hog; one that can maintain himself as nearly as possible; one that will not run and hide his nose in a straw pile when the wind blows slightly from the north; a hog that will dress from 100 to 150 lbs. at nine months old, and without feeding, is a profitable hog to raise. This prevents the necessity of wintering, and is probably the most economical kind of hog raising. I claim that either the mixed Berkshire and Poland China, or the thoroughbred of either kind, will do this if they have good range and water. I have seen Berkshires at a year and a half old dress 400 lbs. of pork, with very little feeding, and at one year old the same hog would have dressed 250 lbs., and these hogs were not fed in a distillery either.

It is claimed for the Duroc that they are "becoming" noted for the large proportion of lean meat and the firmness of their flesh. This looks a little like stealing, for unless hog history is all fiction, the Berkshires have always been noted for that very essential quality, on account of which they have always stood head and shoulders above every other breed of hogs, no matter what there color may have been.

Olimpo, Colusa Co. L. D. J.

HORTICULTURE.

The Prœparturiens Walnut.

EDITORS PRESS:—A subscriber to the PRESS from Santa Clara writes to me, inquiring whether it is so that the *Prœparturiens* is a dwarf species of walnut, adding, justly, that in that case he would not care to have any such trees upon his place; then he adds that he saw that statement in the catalogue of a Santa Clara county nursery.

Having been the introducer into this State, and so far into 18 States and Territories, of that valuable species of walnut, which I have been *cultivating* for the past 12 years upon my own place in Nevada county, and *fruiting* for the past eight years, and, furthermore, having extensively advertised that very species through the press of the State, especially the RURAL PRESS, you will please allow me to answer your subscriber's query and correct the above statement, right in your paper.

In the catalogue referred to above, the *Prœparturiens* is described as a dwarf species, and which is in *full bearing* when six ft. high. The nurseryman in question, having a good reputation as a reliable nurseryman, his statement may be believed without any further comments; but he is certainly mistaken about the *Prœparturiens* being a dwarf species, and I will add that it does not do for a reliable nurseryman to make such mistakes, for in so doing he may be deceiving his customers in particular and the public in general.

The *Prœparturiens* is a *regular standard* tree, and I know what I am speaking about, having upon my place 1, 2, 3, 4, 5, 6, 7, 8, and 15 years old trees, some of the 3 and 4 years old and all the 5, 6, 7, 8, and 15 years old trees having borne fruit; the last named trees for 8 years (they were four years old when imported from France in the spring of 1871). Those 15 years old *Prœparturiens*, which are very nearly 25 feet high, are, in fact, the largest and tallest trees upon my "Barren Hill," and were planted in the spring of 1871, as were also chestnut, mulberry, linden and other trees of large sizes. The *Prœparturiens* is not a dwarf species, and no *Prœparturiens* are in *full bearing* when six ft. high, but when 50 or 60 ft. high. I have several hundred of three years old trees from six to ten ft. in hight; does that show dwarfishness in the *Prœparturiens*? Dr. Chapin, of San Jose, Mr. W. D. Dean, of Colusa, Mr. Geo. Harvey, of Forestville, Sonoma Co., and other persons throughout the State have just had from me three years old *Prœparturiens* 8 ft. high, and I had to cut 10 inches off the top of some of them so as to make them go in 10 ft. boxes; all those gentlemen can testify to the truth of my statement. If the Santa Clara nurseryman, who very likely never saw a fruiting *Prœparturiens* in his life, has got a new species of walnut, a dwarf species, that is in full bearing when 6 ft. high, very well. But let him give it any other name than that of *Prœparturiens*, or else I have a perfect right to object. I want your readers to well understand that I do not dispute the word of the Santa Clara county nurseryman in regard to the dwarfish propensities of the variety he advertises, for I know nothing about it, but only to the name of *Prœparturiens* being applied to it. Do not let us have any more confusion in the classification of fruit in California, for it is already confused enough. If the kind described as dwarfish in the Santa Clara catalogue is a sub-variety of the *Prœparturiens* it would be well then to say so, and not let people infer the way that kind is described that "the" *Prœparturiens* is a dwarf species. By the description I give of the standard *Prœparturiens* that I have been cultivating and fruiting for the last 12 years, your readers will be able to see that it has nothing to do whatever with the dwarf species, *Prœparturiens*, so-called, of Santa Clara county.

Speaking of *dwarf* trees, let me say, that any variety of fruit can be dwarfed. For the last two or three years, it has been quite a fashion in France and England to raise cherry, peach, plum, apple and other fruit trees in *pots*—18 to 24-inch trees! They are placed on the dinner table at parties and *soirees* in place of bouquets of flowers. Nothing, it is said, is more pretty than those little trees, full of fruit perfectly ripe. I wonder that some of our enterprising nurserymen or florists round the bay have not yet gone into the business of raising such pretty pot-trees, for it seems to me they would find a good market for them in San Francisco.

FELIX GILLET.

Nevada City, Feb. 3, 1882.

Treatment for Borers.

EDITORS PRESS:—Something over a year ago, at one of our horticultural society meetings, while the subject of borers in fruit trees was being discussed, I stated that I thought I had (by accident), discovered a ready means for their destruction, but that I was not yet ready to declare its effectiveness, but would make further and more careful experiments. This I have done, and am gratified with the perfect success of the experiment.

The circumstance was this: I had in my orchard some half dozen large cherry trees, over a foot in diameter, of an inferior and unprofitable variety. They were strong, vigorous trees, and not liking to dig them up and disfigure the orchard by removing them and planting in their place small trees, I decided to top them off and graft them to a more profitable variety. I accordingly did so, but failed to wrap the stock of the trees (as is my usual custom), with old sacks to prevent the trees from becoming sunburnt. The result was that, having no top to shield the stock from the hot sun, they became badly sunburnt, and on examination the following spring they were found to be full of borers, from the ground to the branches, of every size from the smallest mite to worms of near an inch in length. They had destroyed the inner bark on the entire south side; the smaller ones working in the bark and between the bark and the wood, and the larger ones had gone deep into the wood. I took my pruning knife and removed a large portion of the bark and cut into the wood removing hundreds of the borers, but not having the time to finish even one tree, I took an old sack and wrapped it round the tree that I had been working on, tying it on with a piece of bale-rope. Being busy until after the cherries were gathered there was no further attention paid to any of the trees. At this time I set a man to cutting out borers. Coming to those trees we found that they were nearly destroyed, two or three quite dead, but on taking the sack from the one I had partially removed the borers from, we were surprised to find the wound healing—not only over the cut, but flowing over the wood where the borers had destroyed all the inner bark; but to our further surprise, not a live borer could be found, neither in the bark nor wood, but plenty of dead ones in both. This is what gave me the hint I spoke of; but fearing that the result might have come from some other cause, I hesitated to accept, and preferred to experiment further. So I selected a large tree that had been badly sunburnt, caused by injury in losing a portion of its top on the south side. By removing a portion of the bark it was found to be perfectly alive with borers, of all sizes, from the egg to the worm of an inch in length, both in the bark and deep in the wood. This tree I selected as offering an excellent opportunity for my experiment. Taking a common grain sack, spreading it apron-like on the south side of the tree over the affected part, I tied it on with bale-rope and left it. On taking off the sack today, in the presence of the Horticultural Commissioner and other gentlemen, to our surprise, we found every borer dead. Some had passed through their transformation, and the dead beetle was found sticking in the hole. The closest inspection failed to discover a single live borer or beetle; and not only that, the sap had flown over the wood, and under the powdered wood and bark, covering almost the entire surface with bright, healthy, new bark. In all the trees that I have had injured by the sun and borer, every one has recovered, and is clothed with fine new bark; and this is attributable, as much or more to the exclusion of the air as to any or all other causes. The exclusion of the air from the wound on a tree and the wound on man seems to be goverened by the same law. In no other way can I account for the beneficial effect of the wrapping of a wounded tree.

WM. H. JESSUP.

Haywards, Cal.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

Reorganization of the Grangers' Business Association of California.

At a meeting of grangers held at Grangers' Hall, San Francisco, Jan. 30, 1882, the question of reorganization of the Grangers' Business Association was brought to the attention of the meeting, whereupon D. Inman, of Livermore, was called to the Chair and Amos Adams was designated as Secretary. The disabilities the present association labors under, by reason of the proscription features of its articles of incorporation, and the necessity of a reorganization with power sufficiently enlarged to meet the present and increasing wants of the association, were fully discussed.

On motion of Amos Adams the meeting then proceeded to organize a company to be known as the Grangers' Business Association, with a capital stock of $250,000, divided into 10,000 shares, at a par value of $25 each, and that shares in equal number in the new organization shall be given in exchange for shares in the present corporation, upon the surrender of certificates.

Articles of incorporation were then presented and adopted, which contain the following provisions: "To deal and trade in all kinds of agricultural produce, live stock, agricultural implements and general merchandise; also to engage in and do any kind of manufacturing, warehousing, shipping and commission business, and in connection therewith to build, own and manage tug-boats and wharves, and to secure water rights for the purpose of getting water for use in its business, and to supply ships; also to borrow and lend money, and also to purchase, hold and exchange any real estate or personal property."

An election for Directors was held, which resulted in the election of D. Inman, I. C. Steele, John Lewelling, Amos Adams, W. L. Overhiser, A. D. Logan, E. W. Steele, R. S. Clay, A. P. Hatch, O. Hubbell and T. Flint. These gentlemen compose the Board of Directors of the present corporation, and will hold their positions until others are elected. All present subscribed for stock to be paid for by surrendering certificates for an equal number of shares of the present organization.

A meeting of stockholders of the old company is called to be held on Wednesday, March 15, 1882, to vote on the question of reorganization, and if carried in the affirmative, then to vote to sell to the new corporation the property of the old.

We are informed that persons owning about two-thirds of the present stock have signified their willingness to have a reorganization take place; therefore we may consider it almost a fixed fact that the Grangers' Business Association will soon be placed upon a basis broad enough to insure success.

Grange Elections.

Lincoln Grange, Placer County.—J. Brook, M.; Hollis Newton, O.; Mrs. Helen Peters, C.; Chris. Crook, L.; Z. Job, A. S.; Mrs. M. A. Newton, T.; A. J. Soule, S.; L. N. Scott, G. K.; Mrs. W. P. Ahart, Ceres; Mrs. E. M. Crook, Pomona; Mannie Fagg, Flora; Lizzie Groff, L. A. S.; Belle Fagg, Sec'y.

Clarksville Grange.—John F. York, M.; Jos. Joeger, O.; Chas. Porter, L.; Wm. Woodward, S.; John H. Long, A. S.; Sister Effie E. Winchell, C.; Geo. Carsten, T.; Samuel Kyburz, Sec'y; Wm. Johnson, G. K.; Sister Carsten, Ceres; Sister S. R. Skyburz, Pomona; Sister Porter, Flora; Sister Woodward, L. A. S.

Carpinteria Grange, Santa Barbara County.—O. N. Caldwell, M.; H. D. Woods, O.; James A. Blood, L.; John Pettenger, S.; E. Pinney, A. S.; Andrew Martin, C.; C. F. Rystrom, T.; Miss Ina I. Cadwell, Sec'y; George Wride, G. K.; Mrs. E. Pinney, Ceres; Mrs. Mary Benn, Pomona; Mrs. L. Blood, Flora; Mrs. Robinson, L. A. S.

Potter Valley Grange, Mendocino county. William Eddie, M.; S. H. McCreary, O.; T. W. Dashiell, L.; Jerry Lierly, S.; Wm. A. Grover, A. S.; J. L. Foster, C.; I. W. Grover, T.; H. W. Baker, Sec'y; R. R. Burrows, G. K.; Laura Lierly, Ceres; Cynthia Eddie, Pomona; Jennie Desluns, Flora; Miss Addie Spencer, L. A. S.

Washington Colony.—By an advertisement in another column it will be seen that G. G. Briggs, of Davisville, the well-known fruit grower and raisin maker, has purchased the Washington Irrigated Colony, at Fresno. Mr. Briggs' experience and judgment of fruit lands will commend this location to many, and his offer to those who desire to plant vineyards on shares will no doubt aid many to get a start in agriculture.

Co-operative Association.—Lodi, Elliott and Washington Granges in San Joaquin county have subscribed over $3,000 to establish a co-operative store on the Rochdale plan. The store is to be located at Lodi.

Healdsburg Grange.—The newly elected officers of the Healdsburg Grange were duly installed last Saturday by State Lecturer, E. W. Davis, of Santa Rosa. At the conclusion of the exercises, Mr. Davis made some interesting and instructive remarks. Among other good things, he said, so far as his observation went in this State, the interest in Patrons of Husbandry was on the increase; societies that some years ago threw up their charters are now calling for a renewal, and will organize at once. It is believed by those best informed that a reaction has set in, and that this important organization will once more become powerful and influential. The new growth will not be so rapid as the first growth was, but it will be far more healthy. It has had its mushroom growth and decline, as all organizations that affect the interests of a large class of our citizens always do. It is now taking deeper root in better soil; the need of co-operation is beginning to be felt by all intelligent farmers, and they believe the best way to get at their wants, and raise the standard of their profession is to meet in a society, periodically, and discuss all matters pertaining to their peculiar interests, and ascertain their true relations in the social organism. Those interested in commercial and trade interests organize for more thorough work, why shouldn't the farmer?—*Flag, Feb. 2.*

District Lecturers.—W. M. Daniel Flint, writes to the *Patron* as follows: I wish to call the attention of the Masters of the subordinate Granges to the importance of the early selection of their District Lecturer. The season is fast passing, and the Lecturer should have his appointment, so that he can lay his plans for his future work. I am anxious to have them appointed, so that I can communicate and co-operate with them in the advancement of the Order. See that the very best men are appointed, for I shall expect them to render a good account of their stewardship at the next State Grange.

Stockton Grange.—At a meeting held Jan. 7th, a testimonial to the devotion and services of the retiring Master, Dr. Grattan, was expressed in a handsome present of silver plate, accompanied by an appropriate address by Sister C. Overhiser. Dr. Grattan has been an able and faithful officer, and is properly honored by the Grange.

Florin Grange.—The Grange reunion at Florin on the last Saturday in January, was attended by the W. M., Daniel Flint, and other visiting grangers, over 300 being present. It was a notable gathering, and a good spirit was manifested. Many neat little speeches were made, in which Bros. William Johnston, G. W. Hancock, Wm. G. Phelps, Overhiser, Ennis and some others took part.

San Joaquin County Lecturer.—Capt. W. G. Phelps has been chosen for appointment as county lecturer for San Joaquin county. Bro. Phelps is an energetic and faithful member of the Order, and is highly esteemed for his Grange work in his district.

Agricultural Notes.

CALIFORNIA.

COLUSA.

Crop Prospects.—*Sun*, Feb. 4: Fears are entertained of a dry season. We have had, up to this time, according to Mr. Washburn's gauge, 5.74 inches of rain for the season, and 1.43 for the month of January. We can only judge of the present and the future by the past. For the dry seasons of the past we have no record at Colusa, and have to depend on Sacramento, which has uniformly a little more rain than at Colusa. It has had more this season, by a couple of inches. In 1872-3, January gave Sacramento 1.733 inches, and for the season up to the last of that month, 4.420 inches. In 1863-4, January gave Sacramento 1.077 inches, and there had been for the season up to that time 4.385 inches. In 1869-70 January gave Sacramento 1.371 inches, and up to the last of January, 6.103 inches, 2.120 of which fell early in October. In 1870-71 January gave Sacramento 2.075 inches, and for the same season up to the end of that month, 3.630 inches. In 1876-7 January gave 2.19 inches, but December and November had given only 0.640 inches. In 1879-80, January gave only 1.423 inches, but November gave 2.207, and December 2.938, making about what we have had for three months this season. Each and every one of these seasons brought wheat on the river lands that were well put in, and on the summer-fallow. While our crops are not very well advanced, the young grain has a good color, and can get along for some time yet without rain. The grain on the low alkaline lands even looks well yet. Volunteer will make nothing without extraordinary good weather in the future. Colusa county has more summer-fallow well put in than she ever had before, and more low land has also been, or will be planted, than on any former season, so that we may confidently expect that we will have from one to three million bags of wheat to sell.

KERN.

Stock Feeding.—Bakersfield *Californian:* Although there is reason to believe that, for the balance of the season, there will be sufficient rain, it has come too late to make a good year for cattle and sheep-ranging. This business has become so uncertain that cattle and sheep farming will probably soon take its place. Feed must be made certain by the process of irrigated cultivation, and, so pursued, stock raising is the most profitable business in this part of the State. It cannot be crippled by extortionate freight charges, because cattle, sheep and horses can furnish their own locomotion to market. There are plenty of sheep rangers in this county with means enough to buy land in the valley and grow feed extensively. Many are doing so, and probably regret that they had not taken this course sooner. Drouths are not so great an evil after all if they cause more attention to be given to the cultivation of the soil and the introduction of better and more certain methods into one of our most important industrial pursuits.

LOS ANGELES.

Shipping Sheep.—Santa Ana *Standard:* The outlook for sheep owners is very gloomy, many of them shipping them away to pastures new. Capt. Ferguson, who lives some 60 miles below Anaheim, has made arrangements to ship to Tucson about 7,000 head, while others are selling them off for from 75 cents to $1 per head. This gentleman says the sheep are dying off very fast in the vicinity of Pomona and the Chino ranch. Oh, for a refreshing and copious rain! The fruit prospect, he says, looks very favorable. There has been very little loss from the late storm, the wind having blown off some, but a good portion of this has been saved and shipped away.

Grain.—*Herald:* Our farmers declined to accept the theory of a dry year, and they plowed and sowed with unusual industry and persistence. The rain which fell on the 24th of January started the grass and the grain. Over enormous tracts of Los Angeles county the wheat and barley are up to a hight of between two and four inches. The first day of February opens with the almost absolute certainty of abundant crops. It is still an open question as to whether the present year, instead of being a year of drouth, shall not prove to be one of floods. Of one thing we have been satisfied by diligent inquiry, viz., that never in the memory of the oldest inhabitant has there failed to be an ample rainfall when, as is the case now, the mountains have been packed with snow. This fact of itself is almost conclusive of a golden year, of course allowing for disasters to the sheep interests.

NAPA.

Grape Grafting.—*Reporter:* At the last meeting of the Napa Grape Growers' Society there was a discussion on grafting. Mr. T. B. McClure, who has had much practical experience in grafting vines, and met with gratifying success, explained in his customary clear manner the methods employed by him in this branch of the vine-growing business. He clears away the earth to the depth of several inches around the vines, prepares the stumps, and making his graft carefully replaces the earth about the vine. By paying particular attention to the manner of inserting and protecting the grafts, no difficulty is experienced in making the vines grow. He loses not over five out of 100. The suckers should be pulled off, and great care taken not to hit the vine while plowing. He had grafted as many as 100 old stocks in one day, but that was exceptionally fast work. Young vines can be grafted much more rapidly. He thought the months of March and April the best time to graft. February is most too early; the sap generally hardly running sufficiently at that time to secure the best results. In grafting on resistant stocks, the gentleman thought it best to put in the graft just below the surface of the ground; if grafted too low down, the cutting sends out its own shoots. If it is possible to graft resistant varieties into European stocks, he thought it would be cheaper than planting resistant cuttings and then grafting European varieties. He had attempted to graft in the side above the ground, but failed to cut off the old stock, and the vines died. Mr. J. L. Marshall stated that Dr. Lockwood had grafted in the side above the ground, and some, he knew, grew. Mr. Estee advised the use of wax in grafting small vines, as it was about as cheap as any other process, and saved the trouble of tying. He grafted 1,000 vines six inches below the surface last year, and the experiment proved successful. Mr. Fisher did not believe in grafting too early, as the tender buds are likely to be nipped by the frost.

St. Helena Vineyards.—Vineyard land in the vine region up valley pays handsomely for all work put upon it in the way of improving it for grape purposes. As an instance, the *Star* mentions that Capt. J. N. Grant has been offered $5,000 for his farm of 15½ acres at Lodi. The Captain bought the land a year ago for $1,000 and has spent about $2,500 since for improvement, and it will be seen that the investment was a good one. His judgement was severely criticised in starting in at so rocky a place, but things have changed since then, and there are several who would like to take his place now.

SACRAMENTO.

Killing Out the Grain.—*Bee:* From a reliable source it is learned that the recent frosts have proved most disastrous in that portion of the Sacramento valley lying along the river, and much of the winter grain will have to be resown. This is owing to the fact that the frosts have killed out the grain so that it will not sprout and is rotting. Especially is this the case on the clayey land bordering on the tules. The summer-fallow, however, is as yet all right, and although the frosts have greatly retarded its growth, still it will yet come out all right with a little more rain. In Sacramento county the grain is as yet all right, and the frosts have not done any damage to the fruit trees or berry vines.

Frost Injury.—Folsom *Telegraph:* The late cold weather and severe frosts have proved damaging to the young grain in this section. In some places, where a few weeks since it looked thrifty and promising, it now scarcely makes any showing whatever. This injurious effect upon the crops is beginning to depress the farmers who were but a few weeks since jubilant over the fair prospect that promised such a fair return. We can but hope that with the return of mild weather, a more hopeful state of things may exist.

SAN BERNARDINO.

Riverside Citrus Fair Association.—Riverside *Press:* On Monday last the stockholders of the Riverside Citrus Fair Association met at Judge Conway's office and adopted a code of by-laws and elected the following new Board of Directors: A. S. White, J. H. Benedict, James Bettner, T. W. Cover, A. Keith, B. D. Burt and Dr. K. D. Shugart. J. H. Benedict resigned as a member of the board and H. B. Everest was elected so fill the vacancy. The meeting also passed a resolution authorizing the Board of Directors to purchase the corner lot on Main and Seventh streets for a pavilion site, and also authorized them to construct a pavilion thereon. The Board of Directors afterwards held a meeting and elected the following officers: President, H. B. Everest; Vice President, A. Keith; Sec., J. E. Conway; Treas., B. D. Burt. They also appointed the following committees: Executive Committee—A. S. White, James Bettner and B. D. Burt. Building committee—A. S. White, T. W. Cover, B. D. Burt and Jas. Bettner. The contractors had two loads of lumber in town while the meeting of stockholders was in session waiting for them to determine where the pavilion was to be built; and as soon as the vote was passed, they drove to the grounds and unloaded their material. Work is being rapidly pushed, and there is no doubt but that the building will be in readiness for use by the date of the citrus fair on the 22d of March. The association have enough money to complete the building and pay for the lot, but the lighting and seating will cost $850; and of this amount there is but about $600 now provided for. The other $250 should be subscribed at once.

Dave Turner.—*Semi-Tropic:* Dave Turner informs us he is now sole proprietor of the nurseries recently owned by himself and Mr. Cunningham in partnership. Dave reports he has sold out most of his large nursery stock, but will soon be on hand with a fresh supply of splendid young trees. We congratulate him on his success as a nursery man, while, at the same time, we are glad to say he deserves it, for what he sells can be depended upon as being just what it is represented to be.

SANTA BARBARA.

Rain.—Lompoc *Record*, Jan. 28: A quiet, warm rain commenced falling Monday night about 11 o'clock, much to the gratification of all who heard its musical patter upon the roofs. In the morning the storm had cleared away, and Robert's rain record was increased by the addition of 35 hundredths of an inch. In the afternoon it commenced coming down again, six hundredths falling. Rain has also fallen at intervals during the balance of the week, making total amount of rainfall for the storm, 53 hundredths of an inch, and for the season, two inches and 80 hundredths. This rain has done a great deal of good both to the growing grain and feed; and there can hardly be a doubt but that, if the season is at all propitious from this out, the year will be a prosperous one. The cold spell is apparently broken, and we will undoubtedly have plenty of rain right along now.

SAN DIEGO.

Editors Press:—We prize your excellent paper very highly. I always watch for the Rural Press, with its short racy stories, and valuable receipts and news items. We have just had the worst snow storm ever known in these parts even by the oldest inhabitant. Trees were entirely stripped of branches broken off by the weight of snow. It very seldom snows in this valley, but this is an unusual winter. Times in our county are looking up and growing brighter every day.—Mrs. I. H., Ballena, Cal.

SOLANO.

Early Blossoms.—Suisun *Republican*, Feb. 3: We have on our table a package of blossoms from the orchard of Mr. G. P. Plaisted, in Pleasants' valley, which were taken from an early China flat peach tree, and which made their appearance on Jan. 29th.

Good Prospects.—Mr. Bernard Bradley informs us that the crop prospect out his way was never better at this season of the year than at present. Both the summer-fallow and winter-sown grains are looking exceedingly well, with the advantage in favor of the winter-sown. His crop prospects are very flattering, and, as a consequence, he is now feeling in a very good humor. From all directions the same report reaches us; and should no untoward accident happen, this portion of old Solano will make a big showing in the wheat markets next fall.

STANISLAUS.

The West Side Prospects.—Modesto *Herald*, Feb. 2: A farmer from the West Side, near Crow's Landing, informed us on Tuesday last that many of the farmers in that section considered their crops were already damaged

by the dry winds beyond recovery. Farmers are often too hasty in giving up hope. It requires a great deal of dry weather to destroy the germ, even after the wheat has sprouted and above ground. We have known it to be withered and nipped by hot north winds, and, after a good rain, to spring up again, actually doing better by the resuscitation. From appearances, the rain of Tuesday visited them copiously, and if it is followed up with later showers, will make the grain mature into a good crop. Of course, the spring rains must come or the harvest will not. There are several chances to take before the season is ended. The worst time is in the spring. Those who have the use of water by virtue of irrigating ditches feel more secure, but we learn that even the water ditches are not supplied sufficiently.

SUTTER.

THE OUTLOOK IN SUTTER.—Yuba City *Farmer*, Feb. 3: During the past two weeks we have seen and conversed with farmers from all parts of the county, and the condition of this and neighboring counties may be summed up thus: In these parts enough rain has fallen for all practical purposes, ranging from 7 to 9 inches; but little more is required to insure us one of the best crops ever gathered in the Sacramento valley. The crop may be said to be all in, with the exception of some low or river border lands which do better sown later, and after the danger of floods is passed. There is more land sown to wheat than ever before in the history of the county, and this has been got in in the very best condition and is doing well. Owing to the continued cold freezing weather, the wheat is somewhat backward, but this is not considered detrimental, as grain has been "rooting" and shooting during the cold weather, and will soon cover the ground as warmer weather approaches. Considerable barley has also been planted and more will be sown on the low lands later on. Already we hear of many farmers commencing to plow fallow for the next season, but so much land being sown to wheat this winter there will be necessarily but little left to be laid over in summer-fallow. More attention than ever is given to the rearing of orchards and vineyards throughout the county. Take it all in all the prospects are brilliant for husbandmen, and could not well be better.

TULARE.

FROST WORK.—Visalia *Delta*, Feb. 3: Wild flowers have not yet appeared. Usually the ground in the latter part of January is dotted at frequent intervals by the flowers, and in February and March they spread their carpeting everywhere. The weather has been phenomenal and has thrown vegetation out of its reckoning. The apparition of hoary Jack Frost keeps the flowers from venturing out into the occasional alluring sunshine. Everything is unbalanced, unhinged and unsettled. Gardens are in a pitiable plight. The celery crop is gone, and the growth of the present crop is utterly retarded by the frost. Parsnips are nearly ruined. Cabbages are light and open. Radishes are hard. Turnips are spongy. Early peas are four and five inches high, but are liable to be destroyed any night, in spite of the vigilance with which they are watched. It is impossible to find sufficient vegetables for the table. Flabby beets can be had, and that is about all. Never before was such a peculiar and unnatural condition of things seen in Tulare county. Gardens should be rank with vegetables, and flowers should be in bloom. It is not the lack of water, for that can be, and is, artificially applied; it is the heavy frosts and the cold nights, which freeze water once in every 24 hours.

THE RAIN.—Thursday rain commenced, and fell during the night, amounting to .38 of an inch at Visalia. In Mussel Slough it was much less, but greater in the foothills and on the plains to the east of Visalia. A good crop is insured wherever farmers have already made preparations, and this amounts to a large area. The heavy frosts and hard freezes following the rains keep back the grass, and otherwise neutralize much of the good of the rain.

WELL-BORING.—At Poplar, Robert Gilbert is still proceeding with his well-boring. A few days ago he thought that he would strike water as soon as he got through a stratum of rock, which was about three ft. thick, but the treasure was not there. Under this stratum he found a tough soil, through which he bored without putting the casing down as he went through a depth of about 40 ft.; then he struck quicksand, and his casing was again needed. So he proceeded to ream out the passage through the rock, so that the casing could pass. When reamed out, the casing fell through several feet, but no serious damage followed. This falling business created quite a sensation throughout the country, for it was reported that Mr. Gilbert had lost his well in a great cavity in the bowels of the earth that was 40 ft. deep. Mr. Gilbert will undoubtedly find water before long, as he is now more than 250 ft. below the surface.

YOLO.

THE OUTLOOK.—*Mail:* We interviewed several Yolo county farmers Saturday concerning the crop outlook, with the following result: W. Y. Browning, four miles southwest of Woodland, believes that the ground must be thoroughly saturated at least once during the winter, to insure good crops. This has not been the case thus far the present season, yet he does not despair of a fair yield of the cereals, as he thinks there is time yet for heavy rains. Lou. Baird, who is one of our largest grain growers, is confident of a favorable result, and has as yet no fears of a failure. W. C. Curtis, who has thus far sown 9,000 acres to wheat, in this and Colusa counties, says that instead of being frightened over the prospects of a drouth, he only wishes he had double the amount of land in cultivation. O. F. Wood, of the "Egypt" neighborhood, says they have had enough rain, and that the ground is in many places too wet to plow. He goes so far as to say that the prospect for a full crop is better than he has known it at this time of year for many seasons. J. W. Chiles is a little dubious, but still is not altogether discouraged. He thinks a great deal will now depend upon the spring showers, not believing that we will be visited by any heavy rains this winter. Frank Glascock is hopeful, and claims that in his neighborhood (the northern part of the county), they have had all the rain necessary, so far, to insure an average crop. J. W. Freeman takes a gloomy view of the situation, and only lives in hopes his dry-weather forebodings will fail to be realized in fact. E. R. Lowe claims to be totally incompetent to express an opinion, as he is devoting his entire energies to the wood business just now. John Hollingsworth says that he has failed to hear one note from his frog this winter, and feels confident that this silence of the batrachian barometer indicates anything but a favorable season. It will be seen that a majority of those interviewed take anything but an unfavorable view of the prospects. We sincerely hope the predictions of the majority may come true.

NEVADA.

CATTLE.—Reno *Gazette*, Jan. 19: Cattle in Long valley are doing well. They are running out and all fat. Nobody is feeding. There is snow in streaks all the way down. At Roberts' there is three inches, at Evans' none and at Chamberlains' there is a little—barely enough to cover the ground. It is a mystery that the last storm missed Sierra valley entirely. There is no snow there and none in the mountains. Farmers think there will be very little hay in the valley next year. There is quite a lot of cattle in Long valley. Greeno has sold all he will this winter, but has 500 or 600 head of cattle on the range. A. E. Ross has nearly 1,000 head on his range. Robert Ross has closed out and is going out of the cattle business. J. McKissick is going into cattle heavier than ever. He must have 1,500 head. He has bought out four big ranches in Secret valley, north of Honey lake, and has taken up nearly all of Madeline plains that is good, except the McDonald and Horn places. S. Roberts has sold 60 head to Lemmons for $14 a head. He is going to Idaho in the spring with 150 head of horses. J. B. Roberts has 135 head in Skedaddle valley, north of Honey lake. John D. Kelly has 250 head of fat beef cattle. He lives in the Tule Confederacy. John Mastin brought 500 head from Oregon to eat up his hay. His cattle may be sold now. There are other parties who have been feeding, but buyers are so plenty it is impossible to keep track of the supply. All the farmers are agreed that this is the lightest winter ever known in Long valley and Roop county.

Answer to "The Other Side."

EDITORS PRESS:—"H. P.," in his letter in last week's PRESS, has answered himself. Look at his figures and see that the fruit business at Winters can't pay; and therefore a man who has lived there 25 years ought not to discourage others from planting trees where peaches at two cents per lb. *will pay.*

At Winters, according to H. P., peach and apricot trees only bear 50 lbs. If H. P. will come over on the 4th of July, I will show him apricot trees with 600 lbs. of fruit on each, from which I have sold $24 worth of fruit per tree in successive years.

In the "winter of his discontent," he pours hot shot into me for an article I published in the RURAL last August on the best fruit land. It was a wicked thing for me to say that land such as my own was better than hills up where he lives. But the "unkindest cut of all" was, that I am irate because his views would prevent me from selling my "little nursery." My nursery has no pests. I am 20 miles from San Jose. Two weeks after I advertised my trees in the RURAL they were all ordered. The peach trees I now sell are from the celebrated nursery of Randolph Peters, of Delaware, are free from all pests, and will soon all be taken except enough for 50 acres, which I expect soon to plant on land where I can irrigate them—such land as I asserted last August to be best for peaches. Let the reader judge between H. P. and me. He gets 50 lbs.; I get 600. Which is the best judge of land?

No wonder our friend is discouraged. He has worked 25 years, pays men $40 per month, boards them at a $4-hotel, pays one per cent. interest on money—all these expenses rolling up for 10 years without income—then trees bearing only 50 lbs! Yet after painting this dark picture to scare off the poor man, he lets slip the admission that he sold 12,000 boxes of fruit last year, mostly apricots. I knew a man once who would not let his neighbor have the waste gooseberry cuttings, lest he would get into the business and break down the market.

As to my views, which did so much harm, I turned to the file of the RURAL and read over the two articles. I remember that some one in Solano county railed against my doctrine of irrigating peaches, and asserted that it made them sour and watery. I did not answer the article. Now I am again called to account. Let me tell "H. P." that it depends altogether on how he irrigates, whether he spoils his peaches or brings them to a high state of perfection. If he soaks the ground with water up to the time the fruit is picked, he will surely have watery, insipid fruit, of a dull green color; but if he runs the water along a furrow mid way between the rows once per week for five or six weeks, and then ceases just before the fruit begins to ripen, he will find that the peaches will be large, high-colored, with excellent flavor. The reason is obvious: The tree is kept in a thrifty condition by the roots finding an abundant supply of water at a distance from the body. This water must run along the roots which pass through dry and hot ground. Thus the water is changed into divine wine by nature's own laboratory before it enters the peaches.

I wish to add that while the *best* peach land was described by me, I am well aware of the fact that many hillsides, where the water percolates through the rocks below the surface, produce the choicest fruit. Yet it will always be true that where trees produce heavy crops of fruit of fine size, appearance and flavor, the conditions will be as I have described, viz., an abundant supply of water at the extreme tips of the roots, and those roots running through dry, hot earth to the tree. W. W. BRIER.

Centerville, Cal.

Santa Cruz Farmers' Association.

EDITORS PRESS:—The association met at the court house, Santa Cruz, Feb. 4th, 1882, at one o'clock P. M. The President being absent, R. H. Sawin, first Vice-President, presided. Minutes of last meeting read and approved.

Dr. Anderson presented to the members of the association copies of a treatise on the insects injurious to fruit and fruit trees in California, and remedies recommended for their extermination, by Matthew Cooke, Chief Executive Horticultural Officer. He called particular attention to pages 22, 23, and 24, which were devoted to the caterpiller.

He presented some specimens of the caterpiller in bottles in its different stages, and stated that the best way to destroy them, was to pick them off in small boxes and burn them. The Secretary read the following circular:

DEPARTMENT OF AGRICULTURE,
DIVISION OF BOTANY,
Washington, D. C., Nov. 16, 1881.

Sir:—I am well aware of the immense importance of the grass crop to the agricultural interests of the country, and that many districts are subject to heavy losses and disadvantages from the want of grasses suitable to their peculiarities of soil and climate.

With the purpose of doing all that is possible for the benefit of the country in this direction, it is desirable to obtain very full information from all observing and progressive farmers and stock raisers concerning the different kinds of grasses which in their respective districts are found valuable, and the various conditions of soil, moisture, or elevation which affect their successful culture. The acquisition of such information will, we hope, enable us to arrive at some conclusions that will be of service to the country, and to this end we ask your attention to the subjoined questions, hoping that you will give us as full replies as possible. An early reply is respectfully requested. Truly yours, &c.,

GEORGE B. LORING,
Commissioner of Agriculture.

The Secretary was instructed to send replies to the questions as follows:

First—What are the natural pasture grasses in your district?

Alfillerilla, burr clover and wild oats.

Second—Are any natural grasses cut for the hay crop; and, if so, what?

None; except wild oats.

Third—What cultivated grasses are used for making a hay crop?

None. Wheat, oats and barley are sowed for hay, and cut in the milk.

Fourth—Have any experiments been made to your knowledge in the introduction of new grasses? And if any, what?

Yes. Alfalfa; but its cultivation in this section has proved a failure.

Fifth—Please suggest any grasses that might be useful in your section.

We cannot. The grasses used for hay in the East are a failure here, on account of the peculiar character of the soil and climate.

Sixth—What is the character of the soil upon which each kind of cultivated grass does the best?

We cannot state.

W. W. Waterman presented the association with some fine specimens of the "New Zealand oats" raised on his ranch at Vine Hill.

There being no further business, the association adjourned to Saturday, March 4, 1882, at 1 o'clock P. M. ROGER CONANT, Sec'y.

ADAMS' SPRINGS.—Miller & Stolle have taken this popular watering place in Lake county, with a view of making new improvements for the coming seasons. Mr. Miller is the well-known florist and seedsman of this city.

GOATS.—The firm of Landrum & Rodgers, of Watsonville, is dissolved by mutual consent. W. M. Landrum will continue in the goat and sheep business more vigorously than ever.

News in Brief.

THERE is a disastrous flood on the Brazos river, in Texas.

THE track of the Southern Pacific is laid 204 miles east of El Paso.

RAIN and snow in the mountain and foothill regions on Sunday night.

GUITEAU, the murderer of the President, has been sentenced to be hung on June 30th.

WASHINGTON TER. is free from debt and has a surplus of over $30,000 in her treasury.

IT requires a general smallpox scare about once in so often to keep the people vaccinated.

A LOT of Chicago restaurant proprietors have been prosecuted for supplying their tables with butterine.

THE colored population of Nevada is less than 400. There are 5,416 Chinese and 2,803 Indians in the State.

CHAS. B. FOSTER, the noted spiritualistic medium, is deemed incurably insane. He is in the asylum at Danvers, Mass.

THERE were about 100 applicants among navy officers to go on the search for De Long and the other missing men of the *Jeannette.*

A NUMBER of farmers living along the Salinas river are estimating the cost of pumping water with engines for irrigating purposes.

THE Carson Mint last month coined $198,000, as follows: Double eagles, $60,000; half eagles, $25,000; standard dollars, $113,000.

A CONTRACT has been awarded at Montreal for tunneling the St. Lawrence, at a cost of $3,500,000, the work to be completed within four years.

THE order of the Czar that only wood be burned in his palace is said to be owing to the fact that the Nihilists have smuggled dynamite in with the coal.

THE Sultan's interview with the American Minister, Gen. Wallace, was to gain information in respect to agriculture, and he has sent to America for specimens of the most improved agricultural implements.

THE *Kern County Californian* thinks that cattle and sheep-ranging has become so uncertain that the business of raising cattle and sheep will hereafter be done by farming, and the owners will grow the feed necessary for their sustenance.

WHEN Guiteau arrived at the jail he was at once taken to his cell and a guard placed over him. This precaution is always observed in the case of prisoners under sentence of death, and will be rigidly adhered to in Guiteau's case, both by night and by day.

A DELEGATION of 75 Dakota people is at Washington urging the admission of the southern half of the Territory into the Union as a State. They claim that there are 200,000 people in the area designed for Statehood, and that the voting population is 40,000.

COMMANDER CHEYNE seems sanguine of securing $40,000 on this side of the Atlantic toward the expense of reaching the North Pole by balloons. Sir Hugh Allan and other citizens of Montreal, offer to assist in obtaining a subsidy of $20,000 from the Dominion Government.

A LONDON dispatch says: The unsettled state of Europe would turn a vast amount of money into American securities, if the war of rates and other wars were suspended. Leading brokers say that they have many clients anxious to invest, but they are frightened by the serious fluctuations of the last few months.

SPEAKING of the toughness of the Piute Indians, the Winnemucca *Silver State* says that the other night a squaw gave birth to a pappoose in an open wickiup with the mercury at zero. Next day she was around, and the babe, wrapped in a rabbit-skin robe, is apparently as contented and comfortable as if born in a mansion.

ALL parties interested have decided that it is best to extend the Atlantic and Pacific road to San Francisco, to prevent the route from being taken by some other company. It is also understood that the Union Pacific shall extend its Utah system to a connection with the Atlantic and Pacific, receiving a pro rata percentage of through business.

THE orange crop of Florida, it is said, will be much shorter than was anticipated. The loss from splitting has been very heavy on the river of St. Johns, in some cases 75% and upwards. A large part of the crop has already been shipped, the fear of a freeze and the loss from splitting having induced owners to market their fruit as soon as possible.

THE Italian Consul, and, it is said, the French and other Consuls, are seriously considering the propriety of advising the abandonment of San Francisco as a port of call for the war ships of their respective nations, and of using Victoria in its place. They say that deserters are promptly arrested and returned by the authorities of Victoria, while the police of San Francisco will not look after them unless sure of what is considered an exorbitant reward.

IN pursuance of a dispatch received by Chas. Crocker from Leland Stanford and C. P. Huntington, who are now in New York, he has given out a contract for the immediate construction of the Atlantic & Pacific railroad from Mohave station, on the Southern Pacific railroad, situated at the head of Mohave desert, eastward to the Colorado river. Mohave station is exactly 100 miles from Los Angeles, and is now the depot for the Cerro Gordo mines, in Inyo county. It lies close to the 35th parallel, which the Atlantic & Pacific railroad will follow. The point at which the road shall cross the Colorado river is left open, to be designated and agreed upon by officers of both the Southern Pacific and the Atlantic & Pacific railroad companies.

Kissed His Mother.

She sat on the porch in the sunshine,
As I went down the street—
A woman whose hair was silver,
But whose face was blossom-sweet,
Making me think of a garden
Where, in spite of the frost and snow
Of bleak November weather,
Late, fragrant lilies blow.

I heard a footstep behind me,
And the sound of merry laugh,
And I knew the heart it came from
Would be like a comforting staff
In the time and the hour of trouble,
Hopeful and brave and strong,
One of the hearts to lean on
When we think that things go wrong.

I turned at the click of the gate-latch,
And met his manly look;
A face like his gives me pleasure,
Like the pages of a pleasant book.
It told of a steadfast purpose,
Of a brave and daring will—
A face with a promise in it
That God grant the years fulfill.

He went up the pathway singing;
I saw the woman's eyes
Grow bright with a wordless welcome,
As sunshine warms the skies.
"Back again, sweet mother,"
He cried, and bent to kiss
The loving face that was lifted
For what some mothers miss.

That boy will do to depend on,
I hold that this is true—
From lads in love with their mothers
Our bravest heroes grew.
Earth's grandest hearts have been loving hearts
Since time and earth began!
And the boy who kissed his mother
Is every inch a man!

Eben E. Rexford.

Aunt Marston's Legacy.

Aunt Marston was dead, and I sat looking at the legacy she had left me in her will. "To my beloved niece, Nellie Stanhope, the faithful nurse, the loving comforter of my declining years, I bequeath my gold ball ear-rings, with the brooch to match, marked with my initials in black enamel." Thus ran the passage referring to me.

When my cousin, Lucinda Marston, handed me the little morocco case she could hardly repress a smile of triumph as she thought of the difference a few short weeks had made in our relative positions.

I had been brought up by Aunt Marston, had lived in ease and luxury all my life, while my cousin had been obliged for years to earn her own living by sewing.

I had always looked upon Greylands as my home, while she had never been invited to spend even a week at the delightful old country house on the Hudson since she was a child.

And now she had come into possession of the old homestead, and I, the favorite, whom she had hated and envied for so many years, was put off with this insignificant bequest!

"After all your toadying," she said, with a sneer, "it is too bad to be cut off with a shilling; but if Mr. Lewis,"—the other executor—"knows anything about it, they are worth a great many shillings, for he says they are 18-karat gold, and that Ormolu, who made them, would give you $50 for them to-day. However, you are welcome to them. And now I suppose you will see the necessity of looking about for another home."

The bitter, insulting words, the desolate, deserted feeling at being thus cruelly turned out of the only home I knew, overcame the unnatural calmness with which I had hitherto borne my irreparable loss, and I threw myself on my bed and wept, as I never in my short, happy life thought it possible I could weep.

I don't know how long it lasted, but when I became calm my heart still ached, but my brain seemed clearer, and I could look my situation in the face.

I was no sycophant; I knew that well, for I loved my aunt dearly, and had always given her a daughter's willing devotion, without one thought beyond the present; I even told Charley Burnett, to whom I was engaged with her consent, and whom I loved with all my heart, that "we'd better bide a wee"—for I could not leave my second mother to spend her last days alone, or cared for by hirelings.

Aunt Eunice had often said to me, "You and Charlie will not have to wait long, dear child, and I will see that your future is provided for." I did not care for myself, but I felt so disappointed for his sake when I found that I was left absolutely penniless.

I think now, as I look back, that after she became paralyzed, she wanted to say something to me about it; for, as she lay there so white and still, almost like a piece of statuary, the muscles about her lips would twitch as if trying to form words, and the ever-restless eye would turn on me with an earnest, appealing look like the yearning, pitiful expression of a dumb animal trying to make its sufferings understood.

But she died and made no sign, and now Charlie must plod in the old way, and I must try to earn my own living, for I had made up my mind that I would never be an additional burden on the poor fellow.

I threw the jewel-case from me with a sigh of disappointment as I thought it all over, and then, ashamed of myself, took it up again and kissed the well-known trinkets, in fact the only ones my aunt ever wore, and put them tenderly away among my other treasures—her gifts and Charlie's—in the trunk I was packing.

Alas, for the frailty of human resolutions. Charlie would not hear of my earning my own living, and, though he did not exactly threaten to commit suicide if I refused, he looked so utterly miserable and forlorn that I was forced to reconsider my decision.

Charlie and I are quite old married folks now, and four little, curly-pated, restless bodies tumbled about in the small, poor room that serves me as a bed-room, sitting-room and nursery, coming to mamma with their small hurts and pains to be kissed well again and petted, while often my heart and head both are aching.

So many little mouths to feed, so many little limbs to clothe and sew for; eight little feet that are never still to cover with shoes that wear out so fast.

It is no wonder that Charlie has to wear his coat till it is threadbare, and my only best dress is my old black silk made over and over again, which, with lace ruffles at the wrists and throat, and Aunt Marston's legacy, forms my gala-day toilet.

I would not complain for myself, but Charlie looks so pale and tired, and his cough gets worse and worse every day. If he could only go in the country for a month, the doctor says, rest himself, keep in the open air, drink plenty of milk and take some gentle exercise, such as a little rowing or riding, he would get well.

My head aches with thinking how to get the money that will save Charlie's life. My darling husband, so devoted, so unselfish, depriving himself of even the smallest indulgence for me and our little ones!

I think bitterly on the unequal distribution of the good things of this world; so few have all, and so many have nothing; but when I say so, Charlie laughs and says I'm a little communist, a dangerous character, and should be suppressed.

As usual, while I sit sewing, I am devising a thousand impracticable schemes, when my reverie is interrupted by my elder boy, Robert.

"Oh, mamma! see those beautiful ponies!"

I look out and see a phaeton drawn by a span of black ponies, and seated at her ease, her lap-dog beside her, I recognize my cousin, Lucinda Marston.

How circumstances have changed! She and her dog in my place. I and my children living a life of privation! My husband dying for the need of the money she lavishes on her horses and dogs in a week!

I cannot help a reproachful feeling toward my aunt as I reflect on her capricious treatment of me. At sight of that cruel face I live over again that last dreadful interview when my cousin gave me the jewels. Her words rang in my ears once more, but with a new meaning.

"Ormolu would give you $50 for them," she had said.

"Fifty dollars!" I exclaim aloud. Fifty dollars means rest, country air, rowing, riding, life and health for Charlie.

I opened the satin-lined box, and looked at the yellow baubles, that smiled and twinkled in their soft bed, as if they were glad they were going to be of some use at last.

"Oh, you treasures!" I said, and with a thankful heart.

While I put on my hat and shawl, I had mentally made away with half my legacy, for I had bought Charlie an entire new suit, nice, warm flannels, and all, and barely left him enough to pay his board with in the country.

Carried away by the excitement of the moment, I scarcely knew what I was doing till I found myself in the palatial store at Blank street, and heard a gentlemanly voice say, in answer to my question: "Will you please wait a moment, miss?" while he spoke to an elderly man, who in a while came to me and said:

"Would you mind telling me, madam, how this set of jewelry came into your possession?"

My heart sank. There seemed to be something of a doubt as to whether they had been honestly come by.

"Certainly not," I said. "They were left to me by my aunt, Miss Eunice Marston. You may perhaps remember that she bought them here."

"Will you give me your name and address, please?"

I did so, and found that the young man knew my husband well; had also remembered having seen me in the store with my aunt.

"Do you know madam, what these jewels are worth?" questioned the elder gentleman.

"About $50, I suppose," I said.

He took one of the earrings out of the case, and giving a little twist and a light pressure of the small gilt knob at the lower side of the ball, it opened in two parts; taking off the golden envelope, he held up to my astonished eyes an immense solitaire diamond that sparkled and blazed like a star as it trembled in his hand.

"The earrings alone are worth $10,000, and with the brooch, which opens, too, you see, the set is worth about $25,000.

The words had no meaning to me; everything faded before my eyes—all was darkness.

When I came to my senses I was lying on a lounge, and a sweet-looking lady sat by me bathing my head. When I was sufficiently recovered to think of what had happened, and was assured that it was not a dream, I had another interview with the gentleman, who, like the genii in an Arabian story, had evoked such wonders from a simple golden ball.

Upon my signifying my desire to sell the jewels an agreement was made, and I went out of the store a rich woman, with Ormulo & Co.'s check for $20,000 in my pocket.

When I reached home, Charley stood at the front door waiting for me, looking anxious, poor fellow, for no one could tell him where I had gone, and it was very unusual for me to be out when he came home.

He must have thought I had gone crazy, when, putting the check in his hand, I threw my arms around his neck right there in the vestibule, and, crying as if my heart would break, said:

"Oh, Charlie! Oh, Charlie!" Then when he had taken me into the house I drew all my little ones together in my arms crying, "Oh, my darlings! my darlings!"

When my excitement had abated somewhat, I thought of the precious paper.

"Where is the check?" I said.

"Check!" said Charlie, blankly; "what check?"

"I gave you a check for thousands of dollars!" I excitedly answered.

"Poor child!" said Charlie, "poor darling, trouble has turned your brain."

But upon my insisting, very much as one humors a sick child, he consented to humor me, and pretended to look for it.

"Here is something, papa," exclaimed Amy, as she put in his hands a crumbled bit of paper she had picked up in the hall.

I can see the expression on his face now. I do really believe my dear husband, for one minute, thought I had, in my insanity, been guilty of forgery, burglary, highway robbery, or some dreadful thing. It seems but yesterday, and yet five happy years have gone since then, and we have a house of our own, with a cozy library full of books for Charlie, and a large, sunny, lovely room for the children's nursery.

You wouldn't know Charlie, he is so rugged and brown. He is now cashier of the bank in which he began as an errand-boy.

We are not rich, by any means, but have everything we need and many luxuries.

No matter, Charlie any my darling children are happy, and I wish aunt Eunice could look into my grateful heart to-night—a heart so filled with a sense of all my blessings that I can scarcely see through the happy tears that fill my eyes, to write these few last words.

A Western Drover's Story.

My name is Anthony Hunt. I am a drover, and live miles and miles away upon the Western prairie. There wasn't a house within sight when I moved there, my wife and I, and now we haven't many neighbors, though those we have are good ones.

One day, about 10 years ago, I went away from home to sell some 50 head of cattle—fine creatures as I ever saw. I was to buy some groceries and dry goods before I came back, and above all, a doll for our youngest Dolly; she had never had a store doll of her own—only the rag babies her mother had made her.

Dolly could talk of nothing else, and went down to the very gate to call after me to buy her a big one. Nobody but a parent can understand how full my mind was of that toy, and how, when the cattle were sold, the first thing I hurried off to buy was Dolly's doll. I found a large one, with eyes that would open and shut when you pulled a wire, and had it wrapped up in paper, and tucked it under my arm, while I had the parcels of calico and delaine and tea and sugar put up. Then, late as it was, I started for home. It might have been more prudent to stay until morning, but I felt anxious to get back, and eager to hear Dolly's praises about her doll.

I was mounted on a steady-going old horse of mine, and pretty well loaded. Night set in before I was a mile from town, and settled down as dark as pitch while I was in the middle of the wildest bit of road I know of. I could have felt my way though, I remembered it so well; and when the storm that had been brewing broke and pelted the rain in torrents I was five miles, or may be six, from home yet, too.

I rode fast as I could, but all of a sudden I heard a little cry like a child's voice! I stopped short and listened—I heard it again. I called and it answered me. I couldn't see a thing; all was dark as pitch. I got down and felt around in the grass—called again, and again was answered. Then I began to wonder. I'm not timid, but I was known to be a drover and to have money about me. It might be a trap to catch me unawares and rob and murder me.

I am not superstitious—not very; but how could a real child be out in the prairies in such a night, at such an hour? It might be more than human.

The bit of a coward that hides itself in most men showed itself to me then, but once more I heard the cry, and said I:

"If any man's child is hereabouts, Anthony Hunt is not the man to let it die."

I searched again. At last I bethought me of a hollow under the hill, and groped that way. Sure enough I found a little dripping thing, that moaned and sobbed as I took it in my arms. I called my horse, and the beast came to me, and I mounted and tucked the little soaked thing under my coat as well as I could, promising to take it home to mammy. It seemed tired to death, and pretty soon cried itself to sleep against my bosom.

It had slept there over an hour when I saw my own windows. There were lights in them, and I supposed my wife had lit them for my sake; but when I got into the door-yard I saw something was the matter, and stood still with a dead fear of heart five minutes before I could lift the latch. At last I did it, and saw the room full of neighbors, and my wife amid them weeping.

When she saw me, she hid her face.

"Oh, don't tell him!" she said. "It will kill him!"

"What is it, neighbors?" I cried.

"Nothing now, I hope—what's that in your arms?"

"A poor lost child," said I. "I found it on the road. Take it, will you? Iv'e turned faint." And I lifted the sleeping thing and saw the face of my own child, my Dolly.

It was my darling, and none other that I had picked up on the drenched road.

My little child had wandered out to meet "daddy" and the doll, while her mother was at work, and whom they were lamenting as one dead. I thanked heaven on my knees before them all. It is not much of a story, neighbors, but I think of it often in the nights, and wonder how I could bear to live now if I had not stopped when I heard the cry for help upon the road, the little baby, hardly louder than a squirrel's chirp.

That's Dolly, yonder with her mother in the meadow, a girl worth saving—I think—(but then I'm her father and partial maybe) the prettiest and sweetest thing this side of the Mississippi.

Louie's Birthday.

[Written for the RURAL PRESS, by O. F. W.]

"Oh, papa!" exclaimed Mrs. W. to her husband, the other evening after tea, "Do you know that to-morrow will be our little Louie's birthday!" "Yes," replied the father, "but you know we are poor, and during the past year we have not been very successful, and I fear the little fellow's fourth birthday will not be celebrated by the giving of any presents." "Well, papa," replied the wife, "we cannot let the day pass without some recognition of it." Harry, Willie and Fannie had told their mamma what they wished to give their little brother on his birthday. Willie was to give him a book with nice pictures in it; Harry would give him a false face, Fanny a little wagon. Now, in addition to this, Mrs. W. suggested that papa and mamma should prepare the table with some candy and cakes and four little candles; so, it was decided that this programme should be carried out. Accordingly, the next morning when Louie awoke he was dressed and marched into the parlor to behold the little table with the presents upon it and the candles all lighted. There was more pleasure depicted on his countenance than it is possible to describe. Little Louie fairly jumped for joy. Now, what had it cost the parents to furnish so much pleasure for their little boy? About 25 cents, and perhaps made an impression on his mind that he will remember with pleasure to the end of his life. We should not forget the birthdays of our little ones, but endeavor to present them with some token of remembrance, be it ever so small. Little children look to their parents to provide them with pleasure as well as necessaries, and if their desires are not complied with and their homes not made happy, they will seek pleasure elsewhere, and though, I regret to say it, may drift out into the sea of hoodlumism. In answer to the question "What shall we do with our children?" I answer, make home pleasant and attractive.

HOME.—Rev. W. J. Smith recently lectured at the Central Presbyterian Tabernacle upon "Some Family Secrets Told." The theme of the discourse was the home circle and the necessity of preserving all its tender influences. "Go with me," said the speaker, "to the home of the man who spends his time away from his family, and I will show you where all is strife and contention, or ignorance, or discomfort, or worse. We have got to be home bodies to enjoy to the fullest extent the charm of home." The lecturer then described the different homes to be met with; homes where the wife scolded the husband and the husband rated the wife; homes where, while the parents were Christians, no Christian influence ever entered. "Out of every thousand men but few experience that real, holy, ennobling sense of what home should be. Home must be something more than a place to eat and sleep in. Home grows upon those who seek to extract the greatest good from its influences. The prattle of the children, the interest of instructing them, the comforts to be derived from mutual fellowship, all increase, if we but humor the better impulses of our nature." The speaker concluded his address by pathetically alluding to the homes of our childhood days, drawing tears from many an eye as he painted in vivid colors mother's old arm-chair, and the place at the table so long unoccupied by the wayward son. The sermon closed with an exhortation to make home more of a heaven, a place of rest, where kindliness, love, Godliness and all the gentler attributes ruled.

Chaff.

A MAN cannot smoke his cigar too short unless he smokes it too long.

COLORED belles refuse to wear bangs. They say you can't pull the wool over their eyes.

FOOD for reflection: Eating a large supper and going to bed to lie awake and think about it.

A RECENT African explorer, in giving an account of his travels, speaks of ants one inch long. The insects must be gi-ants.

IF a two-wheeled vehicle is a bicycle, and a three-wheeled a tricycle, it does not follow that the one-wheeled is an icicle. It is a wheelbarrow.

A LITTLE child was addressed by a gentleman the other day. "How old are you?" he asked. "Old!" said the child, indignantly; "I'm not old at all. I'm quite new."

"I WISH to ask the court," said a facetious barrister, who had been called to testify as an expert, "if I am compelled to come into this case, in which I have no personal interest, and give a legal opinion for nothing?" "Yes, yes, certainly," replied the mild-mannered judge; "give it for what it is worth."

Leaflets From the Margin of Lake Tahoe.

[Written for the RURAL PRESS by M. E. O. W.]

On Christmas day there came in the mail-bag a big hollowed-out potato, full of fresh fragrant flowers. There were violets, daisies, jassmine, pinks, two varieties of roses, sweet peas, fuchsias, heliotropes and two that we didn't know. Only the heliotropes were changed; fuchsias are so tender that they look hurt in a very short time, but these were as fresh as though just plucked. Last winter a box of fresh flowers came that were very nice, but as yet we do not know who sent either of the lots, but think the same kind heart sent both, of course. Whoever they may be, they surely take the RURAL PRESS and will know by this what a sweet, bright spot they made in this snow-bank.

This winter has been very warm and pleasant, though the ground has been covered with snow enough for good sleighing since the 15th of November. The fishing has just been wonderful in size as well as numbers. From the *Tahoe Tattler* we clip the following: "Johnie Bronch, the lucky fisherman, on Saturday, Jan. 21st, off Observatory point, caught 18 trout that weighed 52 lbs., and one of them weighed 22 lbs." Such sport was never known here in winter. From the same source we learn that Jas. A. Richardson, of San Leandro, has just put into Lake Tahoe water 22,000 white fish.

Never before have there been so many workers at the lake in winter. Several of the wood camps have large forces at work, and there are more than twice as many people here as last winter.

We have been looking over our last year's copies of the PRESS. What a splendid volume it is, and how we do enjoy it! But with the sunshine there comes the shadow, and ours is in the loss of our precious friend, Mrs. M. J. Locke. But we have the memory of those pleasant hours spent in her home and mine. In the wave of sorrow that almost overcomes us—that we shall walk this earth without her—comes the comforting thought that it is better so. When this clay is worn out and only a pain, it is good to be free and lay the useless thing away. The PRESS that illustrated her bright face had the immortal Garfield family, too, and that made it the greater treasure. How many bright lights have been called home in the past year. Who is to go in 1882?

Castle Keep, Jan., 1882.

CANON LIDDON ON THE POSITION OF WOMAN. In the course of his Christmas day sermon at St. Paul's Cathedral, Canon Liddon glanced at the position of woman in the ancient world and pointed out the change in her position throughout Christendom. The feeling with which women had come to be regarded was one which, without the aid of legislation, without reducing itself to a theory or a philosophy, had insensibly corrected the wrongs of centuries and had secured for women that tender respect and deference which was the true safeguard of her commanding influence and which alone secured it. We had lived on into a time when this feature of our Christian civilization seemed—it could only be for a moment—to be imperilled. We were told again that the condition of women in Christendom was one of subjection, and efforts were being made in a new sense to place her on an equality with man by giving her a man's education, a man's occupations, a man's tastes, a man's ambitions, if it were possible, a man's character. The difference between these modern efforts, professing to improve the condition of woman, and that of our Divine Redeemer, entering this world as the son of a virgin mother, was that he respected the characteristic virtues and graces of the sex, while these moderns imperilled or would sacrifice them. It was easier to produce a Catherine de Medici of France or a Catherine of Russia than to find a St. Agnes, a Saint Monica, or a Hannah More. It was easier to unsex woman by making her man's rival in the struggle of life—a pallid caricature, at best, of man's self-assertion—than to make the most of those qualities of purity, modesty and self-devotion, in which her true power and excellence consisted.

YOUNG FOLKS' COLUMN.

Our Puzzle Box.

Numerical Enigma.

I am composed of sixteen letters.
My 8, 9, 7, 5. 12, is a masculine name.
My 1, 16, 2, 13, 9, 14, 12, is an animal.
My 15, 6, 11, 4, is a color.
My 10, 5, 3, is to occur unexpectedly.
My whole was a bold pioneer in the exploration of America.

JERRY.

Decapitations.

1. Behead a sort of spear and leave a bird.
2. Behead a small piece of meat and leave a plant.
3. Behead a bird and leave an agricultural implement.
4. Behead a mixture and leave a tree.
5. Behead a bird and leave a weed.
6. Behead to imagine and leave a rank.

MELANCTHON.

Charade.

All things are hastening my first to decay,
The flowers in the wildwood, the children at play;
The ferns in the meadow soon wither and die;
The leaves of the forest fall mournfully by.

The infant that's torn from its fond mother's breast;
The aged ones gone to their long looked-for rest;
The sun every day as it fades with the night,
Are reckoned my next when they're gone from our sight.

It is thus, ever thus, with our best earthly toys,
Our hopes and our pleasures, our sorrows and joys;
Our friends and our kindred, as they strive for the gaol,
Are making a rapid advance in my whole.

CROSSCUT.

Blanks.

[Fill the blanks with the same words transposed.]

1. The —— has some —— upon its back.
2. Persons at the sea —— are said to be having very much ——.
3. —— of the fox's tail remains in the ——.

UNCLE CLAUDE.

Transpositions.

1. Transpose a kind of cart and form a measure of length.
2. Transpose a nickname and form a conjunction.
3. Transpose a vessel used for boiling purposes and form a well-known toy.
4. Transpose a trifle and form to vomit; again, and form extent of duration.

MELANCTHON.

Answers to Last Puzzles.

NUMERICAL ENIGMA.—Nathaniel Hawthorne.

DECAPITATIONS.—1. Cask, ask. 2. Cash, ash. 3. Band, and. 4. Bear, ear. 5. Ban, an. 6. Whale, hale.

HIDDEN TOWNS.—1. Campton. 2. Weare. 3. Rye. 4. Dover. 5. Warner. 6. Sandown. 7. Pelham.

CURTAILMENTS.—1. Seer, see. 2. Seat, sea. 3. Beer, bee. 4. Mart, mar. 5. Fore, for. 6. May, ma.

METAGRAM.—Mast, vast. Last, past.

Jonathan Niles and his Fife.

In his youth, Jonathan Niles was a musician of the Revolutionary Army. In 1778, while the American army was encamped at Tappan, on the Hudson, General Lafayette had command of the advance, his particular duty being to guard the water-front; and in order that any attempt on the part of the enemy at surprise might be guarded against, Lafayette issued orders that there should be no noise of any kind by the troops, between the hours of tattoo and reveille.

Our Jonathan was one of Lafayette's musicians, and his instrument the fife. He was a son of Connecticut, and he had a maimed and disabled brother who was a cunning artificer, and who, among other quaint things, had made the fife upon which Jonathan played. It was so constructed that it could be blown to shrill and ear-piercing notes that belong with the drum, or could be softly and sweetly breathed upon as to give forth notes like the gentle dulcimer.

One evening Jonathan wandered down to the water's edge, and seated upon a rock, gazed off upon the darkly flowing, star-gemmed flood. His thoughts were of his home and of the loved ones, and anon came memories of the old songs that had been wont to gladden the fire-side.

Unconsciously he drew his flute from his bosom and placed it to his lips. In his mind, at the moment, was a sweet song, adapted from Mozart, which had been his mother's favorite. He knew not what he did. To him all things of the present were shut out, and he was again at home, sitting at his mother's feet—and the charm was not broken until a rough blow upon the back recalled him to his senses.

"Man! what are you doing? The General may be awake. If he should hear you—ah!"

It was a sentinel; and even this guardian of the night afterward confessed that he had listened, entranced, to the ravishing music for a long time before he had thought of his duty to stop it.

On the following morning an orderly came to the spot where Jonathan had been eating his breakfast, and informed him that the General wanted to see him at headquarters.

Poor Jonathan turned pale and trembled. He knew that Lafayette was very strict, and that in those perilous times even slight infractions of military orders were punished severely. As he rose to his feet the sentinel of the previous evening came up and whispered into his ear:

"If it should be about the music, Jonathan, don't you be alarmed. Not a soul save you and me knows anything about it. I can swear to that! So, do you just say it wasn't you. Stick to it, and you'll come out all right."

Jonathan looked at the man pityingly. "What! my mother's son tell a lie like that? It would be the heaviest load I ever carried—heavier than I ever mean to carry, if I have my senses."

He then went to the General's quarters—a tent pitched in a commanding sight, overlooking the whole line he had to guard. Lafayette was pacing to and fro, sad and moody, as though his thoughts were unhappy.

"Comrade, who are you?"

"Jonathan Niles, General,"

"Last evening I heard music down by the river's bank. Were you the musician?"

"It was I, General, but I knew not what I did. I meant not to disobey your order. I sat and thought of home and my mother, and—"

The General started at the sound of that word, and the shadow upon his face grew soft and ethereal.

"Of your—mother! And I thought of mine. It was a theme of Mozart's, and was my mother's favorite. If you will be so kind, go bring your instrument and play for me that strain here in my tent. It will do me good."

In the after years—even to his dying hour—the man loved to tell that story. Though he would never urge the truth upon any in consideration of so mean a thing as the benefit that might result, yet he could not put away the thought that the sweetest and most blessed memory of all his soldier's experience might have been lost to him had he grasped the opportunity to tell a lie, which might, to some, have seemed most opportune and profitable.

GOOD HEALTH.

Malarial Organisms in the Blood.

In the blood of patients suffering from malarial poisoning, M. A. Laveran has found parasitic organisms, very definite in form and most remarkable in character. Some were cylindrical curved bodies, pointed at the extremities, with a delicate outline and a transparent body, colorless except for a blackish spot in the middle, due to pigment granules; on the concave side a fine line could often be traced, which seemed to unite the extremities of the crescent. These bodies presented no movement. Spherical organisms were also seen, transparent, of about the diameter of a red blood corpuscle, containing pigment grains which, in a state of rest, were often arranged in a definite circle, but sometimes presented rapid movements, and then lost their regular arrangement. On the borders of the spherules very fine filaments could often be preceived in rapid movement. These filaments were in length three or four times the diameter of a red corpuscle. Their number varied. Sometimes three or four were seen around a spherule, to which they communicated an oscillatory movement, displacing the adjacent red corpuscles.

There were also bodies of spherical or irregular form, transparent or finely granular, about the hundredth of a micro-millimeter in diameter, containing dark red, rounded pigment grains, either regularly arranged at the periphery or aggregated at some part of the spherule. The bodies and granules were both motionless. These appear to be the ultimate or "cadaveric" stage of those last described. They have no nuclei, and do not tint with carmine. Lastly, spherical elements were met with similar to those already described, but much smaller in size, and apparently representing a stage in their development. The animated nature of the mobile pigmented spherule, furnished with filaments, appears indisputable. Besides these organisms, the blood of patients suffering from malarial fever contain: 1. Red corpuscles, which appear to be vacuolated at one or two spots and contain pigment granules. 2. Pigmented leucocytes. 3. Free pigment granules, possibly proceeding from the destruction of the parasitical organisms.

These elements were first discovered by M. Laveran about a year ago, and since then he has examined the blood in 192 patients affected with various symptoms of malarial poisoning, intermittent and continued fever, and palustral cachexia, and found the organisms in 180. The disease had been contracted for the most part in different regions of Algeria and Tunis. He convinced himself, by numerous and repeated observations, that these organisms are not to be found in the blood of persons suffering from diseases that are not of malarial origin. In most of the cases of malaria in which the examination yielded a negative result, the patient had undergone a course of treatment with quinine, and to this fact the absence of the organisms from the blood was probably due. The addition of a minute quantity of a dilute solution of sulphate of quinine to a drop of blood was found at once to destroy the organisms. In all the examinations great care was taken to preclude the entrance of any extraneous objects into the drop of blood examined.

In general the parasitic bodies were found in the blood only at certain times; a little before, and at the moment of, the accession of the fever. In some very obstinate cases the organisms were always present in the blood. They rapidly disappeared under the influence of a quinine treatment. It is conjectured that in the apyrexial intervals the organisms probably sojourn in internal organs, especially the spleen and the liver. After death from malarial disease pigment granules are found in great numbers in the blood, and especially in the small vessels of the spleen and liver; and they may be, in the most severe cases, so abundant that not only the spleen and liver, but the marrow of bone, and even the gray substance of the brain, are darkened by their presence.—*Lancet.*

DOMESTIC ECONOMY.

DUTCH OLIEKOCKS.—The following well-tested recipe is over 100 years old; rub one cup of butter and two cups of sugar to a cream, add two eggs thoroughly beaten, two cups of milk and one cup of yeast; home-brewed is the best. Mix in flour enough with these ingredients to make a dough as soft as you can handle. Set it in a warm place and let it rise till the next afternoon. Then roll the dough out about an inch thick and cut into small cakes with the top of the tea-caddy. Put a raisin in the center of each one and bury it in the dough. Have a shallow iron kettle with about three lbs. of lard; put it over the fire where the lard will melt, then set it forward, and when boiling test with a bit of bread; if the bread rises brown instantly, cook the doughnuts. Try one in about ten minutes after they are put in to see if they are done through. When the doughnuts are removed from the grease drain them in a sieve and then roll them in powdered sugar. They are best eaten cold and will keep a long time. If the fat gets too hot, move to a cooler spot on the range.

VIRGINIA MUFFINS.—One quart flour, one teaspoon salt, one tablespoon sugar, one tablespoon butter and lard mixed, one tablespoon well-mashed Irish potato, three well-beaten eggs, one-half teacup home-made yeast. Rub the butter and lard into the flour; then the mashed potato; salt and sugar should be sifted with the flour. Pour into this the eggs and yeast, and make into a soft dough with warm water in winter and cold in summer, and knead thirty minutes by the clock. If wanted for an eight o'clock winter breakfast, make up at eight o'clock the night before. At six o'clock the next morning make the dough into twelve round balls without kneading, and drop into well-greased tin baking-cups. These cups should be smaller at bottom than at top, and must be three and one-half inches deep. Grease the hands, and pass them over the top of each muffin; set them in a warm place for fully two hours and then bake. The depth of the cup is important, because, if properly made, they rise to the top or nearly so, and would be heavy if baked in the shallow cups commonly used.

VENISON STEAK.—To wash a venison steak is to ruin it. When you slice the steaks from the haunch they ought to be clean. The outside cut may be soiled from transportation; then you may rub it clean with a damp towel. A venison steak should be broiled on a clear hot fire, well salted, and with a very little pepper, and eaten plain with a very little hot butter in the dish. A good sauce is made with a couple of teaspoonfuls of currant jelly, a mustardspoonful of celery seed, and some of the gravy from the venison steak, served as hot as possible. Hot plates—very hot ones—are a necessity for game of all kinds, and most especially venison.

CELERY FRITTERS.—Cut half a dozen white stalks of celery about two inches long; boil them till tender in boiling water and salt, dip them in the following batter, and then fry them golden brown in smoking hot fat. Frying batter: Mix together smoothly the yelk of a raw egg, a tablespoonful of salad oil, a little salt, pepper and nutmeg, quarter of a pound of flour, and enough cold water to make a batter stiff enough to hold the drops from a spoon. Just before using the batter, stir into it the whites of the two eggs beaten to a stiff froth. Fry the fritters just before they are wanted for use.

CREAM OF RICE SOUP.—Two quarts of chicken stock (the water in which fowls have been boiled will answer), one teacupful of rice, a quart of cream or milk, a small onion, a stalk of celery, salt and pepper to taste. Wash the rice carefully, and add to the chicken stock, onions and celery. Cook slowly two hours, put through a sieve, add seasoning. The milk or cream, which has been allowed to come just to a boil in a separate sauce-pan, is to be added the last thing. If milk is used, add a teaspoonful of butter.

PARSNIP FRITTERS.—Scrape and wash the parsnips (pick out and throw away any little woody bits), boil them until they are tender; then wash them until they are perfectly smooth; for three large parsnips, allow two eggs, one cup of rich milk, one teaspoonful of butter; add three of flour. Beat the eggs light; stir in the mashed parsnip, beating hard; then put in the milk and butter; salt it well, and fry in hot lard, just as you fry griddle cakes or flour fritters.

ORANGE FRITTERS.—One pound flour, one pint of milk, with a teaspoonful of salt in it, and a quarter pound of melted butter, and three eggs beaten very light. Prepare four oranges by removing the rind and every particle of white pith, divided into small pieces without breaking the skin. In each spoonful of butter put a piece of orange, and fry a golden brown; sift powdered sugar over as soon as taken from the pan.

DOUGHNUTS.—Three lbs. of flour, 1½ lbs. of sugar, 1 lb. of butter, six eggs, two wineglasses good yeast, mix them with milk to a paste, set it to rise, shape them and fry in lard.

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TABLE OF CONTENTS.

GENERAL EDITORIALS.—A Grand Irrigation Scheme; Our Valentine; Wheat and the Electric Light; 97. The Week; The Grain Gambling Movement; Railway Commission; Grasses in California; The Disinfection of Fruit. 104. Horse Breeding in California, No. 3; Propagation of Vines by Cuttings, 105.
ILLUSTRATIONS.—A Bushel of Babies—Good Measure, 97. Grape Cuttings and their manner of Growth, 105.
AGRICULTURAL NOTES, from the various Counties of California and Nevada, 100-101.
PATRONS OF HUSBANDRY.—Reorganization of the Grangers' Business Association of California; Grange Elections, 100.
CORRESPONDENCE. Smut and Bluestone; Shasta County Notes, 98. Answer to "The Other Side"; Santa Cruz Farmers' Association, 101.
NEWS IN BRIEF on page 101 and other pages.
SHEEP AND WOOL.—The Angora Goat Business, 98.
FORESTRY.—Four Rare Trees of Arizona, 98-99.
THE SWINE YARD.—Notes on Breeds, 99.
HORTICULTURE.—The Præparturiens Walnut; Treatment for Borers, 99.
HOME CIRCLE.—Kissed His Mother (poetry); Aunt Marston's Legacy; A Western Drover's Story; Louie's Birthday; Home, 102. Chaff; Leaflets from the Margin of Lake Tahoe; Canon Liddon on the Position of Woman, 103
YOUNG FOLKS' COLUMN.—Our Puzzle Box; Jonathan Niles and His Fife, 103.
GOOD HEALTH.—Malarial Organisms in the Blood, 103.
DOMESTIC ECONOMY.—Dutch Oliecocks; Virginia Muffins; Venison Steak; Celery Fritters; Cream of Rice Soup; Parsnip Fritters; Orange Fritters; Doughnuts, 103.

Business Announcements.

Plants and Shrubs, F. Ludemann, San Francisco.
Washington Irrigated Colony, J. W. North, Gen'l Agent.
Oakland Poultry Yards, Geo. B. Bayley, Prop'r.
Chicago Screw Pulverizer, H. P. Nichols, Stockton, Cal.
Flowering Plants, E. Gill, Nurseryman, Oakland, Cal.
Genuine Red Gums, Isaac Collins, Haywards, Cal.
Blue and Red Gums, E. Gill, Oakland, Cal.
Books on Orange Culture, Ashmead Bros.
Burnham's Abletene, W. M. Hickman, Stockton, Cal.
Orange Nursery, Parker Bros., Prop's, Orange, Cal.

The Week.

It has been another week of drouth and cold, with persistent northers chilling the marrow and robbing the soil of moisture, its cold meantime arresting growth in field and garden; and our State, usually at this season ablaze with wild flowers, is hard and bare; fit—as they say at the East—fit bed for a winter of sleighing. California is cranky this year! Usually when we have a dry year, we are beguiled by balmy air and warm skies, but now we have frost and wind without its following compensation of abundant rain. It may be that this is yet to come. It is surely to be hoped for, because the thirsty winds have dissipated nearly all the moderate moisture which has been given to the greater area of the State. The wheat plant has suffered in some low-lying and particularly frosty regions, but generally is still holding its own in hope of better things. Field work of different kinds is being pushed, and the plows will work for next year's crop if not for this. Tree and vine planting is still being pursued, and in well-cultivated ground the spring rains will, no doubt, bring water enough to meet the requirements of most of the young trees, although some plantations may come to an untimely end.

The Grain Gambling Movement.

The Produce Exchange of this city is now discussing the advisability of inaugurating a system of trade in grain like that which prevails in Chicago and New York, known as the grain call method of dealing. This is the style of business which we have freely denounced as grain gambling, because it does not signify an actual transaction at the rates named, but is simply a wager that the market will be so and so at such a time, or will not be so and so, as the case may be. We have objected to this style of grain dealing, because it was not actual transaction, and prices thus reached were subject to elevation and depression from hosts of causes other than the demand and supply, and were therefore illusory and an injury to legitimate trade. For these reasons we have been glad that this style of grain dealing has not found favor on this coast.

But there is something to be said on the other side perhaps. There are cases now and then reported which indicate the existence of a ring or combination for mutual interest among leading wheat buyers to manipulate values, and to force whoever comes into the market with a lot of wheat to part with it at such a rate as the members of the combination shall name. In the face of such an agreement among dealers, it would perhaps be better to have a little more sensation and a little more open trade and a rate publicly named, so that the wheat owner could know something more about it than he does at present. Mr. W. D. Hixon, whom we believe has been a promoter of the "call" enterprise from the start, told us the other day, that those who took up the subject a year or more ago, communicated with wheat growers and others in the interior, and that the prevailing sentiment was in favor of a grain "call," because it would give an open price and break up the something of a monopoly which the leading firms are said to have formed.

This seems to be the matter from both sides so far as the farmer's interest is affected. We would much prefer a fair trade in wheat, the market values based upon actual transfers and the market untrammeled and unaffected by combinations of interests. We have seen such produce markets, and we would like to see them again.

The proposition to establish a "call," seems to have a large body of adherents in the Produce Exchange, but there is opposition and further committee work has been ordered. A report was made on Tuesday, and was in part accepted, and an abstract of this will give an idea of the methods proposed:

Rules to govern transactions are suggested which provide for the election and immediate organization of a Call Committee by the election of officers in the manner prescribed, including a Grain Inspector, who shall inspect, when called upon, any grain negotiated in the call, and furnish a certificate, stating quality or grade of grain. His certificates shall be on the basis of the official standards of the Exchange. His compensation shall be one-quarter of a cent per sack of grain inspected, and shall be paid by the seller. All labor of handling necessary for inspection shall be added to the fee. Also defining other duties of the Call Committee. One person of a firm only is to be allowed as a representative of such firm; the call business day to begin at 11:30 A. M., and transactions in the grain call shall be for 1,000 centals or multiples thereof.

It is further provided that on time contracts, purchasers can require of sellers ten per cent. margins, to be extended as the market advances with equal security to the selling; such securities to be deposited in an authorized bank and subject to prescribed conditions.

It is also provided that all deliveries upon grain contracts, unless otherwise expressly agreed, shall be made by tender or regular warehouse receipts, which receipts shall have thereon the certificate of the Inspector of Grain giving the grade of such grain and the date of inspection. All such warehouse receipts shall be made to run at least five days from the date of such delivery, free of storage charges; regular or customary storage charges shall follow such receipt and be chargable upon the property covered by the same, and be issued by such warehouses as are in good repute and are conveniently approachable by vessels of ordinary draft, having customary shipping facilities, and are in other respects conformable to such requirements as may be prescribed by the Call Board Committee. Seawall grain sheds shall be considered as regular warehouses under this rule.

It is still in doubt whether the Produce Exchange will adopt any such style of grain dealing as they have now under consideration. At the meeting of Wednesday, the opposition was led by Hon. Horace Davis, and disclosed rather more strength than was expected.

ADVERTISING EXTRAORDINARY.—The triple-plated, cold-rolled cheek of some newspaper publishers sometimes paralyzes us with astonishment. We have one before us, a Boston affair which offers us a free copy of the paper (which is sold for 60 cents per year) if we will give their advertisement two or three times—showing the style of the advertisement they expect, and which in the RURAL PRESS would be worth $8 or $12 according to the "two or three times" they mention. Twelve dollars' worth of advertising for 60 cents, and that 60 cents in trade—the proposition would seem to be preposterous enough to bring a blush to the cheek of a brass fire-dog. We don't often bother our readers with matters pertaining wholly to the business department of our paper, but this instance of colossal cheek must go on record for the benefit of whom it may concern.

FLOUR FOR TEXAS.—We understand that the first shipment of California flour over the new road to Texas has been made by the well-known mills of Sperry & Co., of Stockton. The lot was 20 tons of the popular brand of these mills. It is to be hoped that the outlet of flour toward the southeast will prove large.

Grasses in California.

The report of the meeting of the Santa Cruz Farmers' Association, published in another column, shows that Dr. Loring, Commissioner of Agriculture, is making a special inquiry into the growth of pasture and meadow grasses in this State and presumably throughout the country. This investigation is one of the most important which could be undertaken, and should draw out a vast fund of valuable information. A monograph could be written upon the growth of alfalfa or lucerne alone. The introduction of the plant from Chile into California, its spread in this State and then the dissemination of the seed through the States east of the Rocky mountains and its behavior in these new regions form a very interesting study. We have been collecting data on this point for some time, attracted to it from the fact that the plant has proved so valuable here, and the peculiarity of its progress *eastward*, when it might have been distributed *westward* generations ago, for it has long been well known in Europe and on the continent. The charming stories of its growth in California gave "alfalfa" an impetus which the staid testimonials of European growers could not gain for "lucerne." California ought to yield the Commissioner much interesting information about other forage plants. Almost everything which succeeds anywhere has been tried here, and most have failed. There have been much time and money expended on grass growing experiments by our dairymen and if the records of their experiments could be collected it would be of much value as a guide to new experimenters. There are a few grasses which now seem to be steadily gaining in favor, and there is a prospect that they will figure largely in supplying our lack of perrenial forage plants. We hope commissioner Loring may succeed in obtaining the data for a good volume on the subject he has taken up. There is scarcely anything which would be of greater value to California and to the other newer regions of the country.

Railway Combination.

It is not many months since we were counting the prospective overland routes on our fingers, and wondering where they could all find terminal facilities. Some said there was sure to be three competitive routes and some said five, and all were looking forward to favorable freight rates, which would let out much California produce, which is now held from shipment by the high cost of transportation. It is a great disappointment to be forced to the conclusion that competition is again ruled out of our prospects, because railways from which so much was expected, have quietly joined issues and properties with the old lines and there is to be no competition after all—at least not in the immediate future.

It cannot be regarded otherwise than a sad blow to our industrial interests that healthy competition is to be strangled by railway combination. Not alone in the repression of business and production is the evil to be sought. Those who study closely the extension of the powers of corporations in this country discern a menace to the welfare of the country in all its interests. Take for example the matter of railway combination, which will be now most forcibly impressed upon the people of this State. A writer in the *North American Review* for February has a well-written article entitled "A Remedy for Railway Abuses," in which the following paragraphs occur:

If the handful of men who control the vast system of transportation in a country containing fifty millions of people should to-day come together with the intention of establishing a monopoly, it would be established to-day—all the vague and vehement opposition, however widespread notwithstanding. And, after its accomplishment, the people would gladly acquiesce, for they are tired of war and discrimination and fluctuation.

And yet, the establishment of such a monopoly, however advantageous it might be for a time, would in the end not fail to undermine the constitution and entire political system of the country. More than that, the monopolist would become, in fact, the emperor of the United States. He would own President, Legislature, and Courts, and could bequeath his monarchy, as private property, to his eldest son. In the not distant future the ills from which monopoly delivered us might seem little compared to those it brought on. Monopoly, therefore, though a satisfactory solution of the economic difficulty of our problem, ought to be, for political reasons, incontinently rejected.

But have we the power to do so? Is it not already too late? This is a practical question, which cannot be answered excepting by an actual trial of strength. At all events, it is certain that in order to have any chance of success whatever, something must be opposed to the monopoly principle which shall offer to the people all its economic advantages without its political dangers. Unless this can be done, the contest is decided in advance.

Is there such a thing? I answer, there is. The seventh proposed solution of the railway problem, placing the entire matter of railway transportation on the highways in the hands of the people of the United States, can cure all economic ills as well as monopoly can do it, for it has all the advantages of the latter, and will bring on none of the political evils incident to monopoly, for it has none of its disadvantages. In this sign alone can monopoly be conquered.

The benefits from combination which the writer alludes to are the evils of discrimination between different points, the carriage of freight from competing points for less than cost, and assessing the loss upon the local traffic of the road, etc. These are minor benefits compared with the danger from the growth and extension of corporative power.

The writer holds that there could easily be formed a combination of all the railway kings of the country, and the people would acquiesce. It certainly looks that way. Where is the power to hinder? It seemed probable a few years ago that bounds would be set upon railway abuses, and the companies would be brought under regulatians and laws. But recent events do not indicate much progress in that direction. California has a railroad commission which seems to understand perfectly how not to do anything—unless it be for themselves; and the State Treasury is denied the money which should come from taxes on railway property. Not only this, but this bold refusal on the part of the companies to pay taxes is placing our schools in jeopardy, because the money is not forthcoming for their support.

Certainly there is not much to enjoy in the contemplation of the railway problem in this State at present, and whence is the remedy to come? The writer in the *North American* says the United States should own and manage the railways. It is difficult to see how it could get possession of them. It seems to be impossible to get anything strong enough to prevent railway abuses, how could the Government get the railways themselves? There is the hope of the ultimate triumph of right and justice in the shape of an awakening of the people and the demand that wrong shall cease; but will this generation see it?

The Disinfection of Fruit.

The great problem in the present fight against scale insects is, how to handle the oranges and lemons upon which the pests have fastened themselves. The regulations formed by the Chief Horticultural Officer, Mr. Cooke, are as follows:

8. Fruit of any kind infested by any species of scale insect or scale insects, or the germs thereof, namely, their eggs, larvæ or pupæ, known to be injurious to fruit and fruit trees, and liable to spread contagion, is hereby required to be disinfected, as hereinafter provided, before removal off the premises where grown, for the purpose of sale, gift, distribution or transportation.

10. Fruit on deciduous and citrus trees infested by any species of scale insect, or scale insects, or the germs thereof, namely, their eggs, larvæ or pupæ, may be disinfected before removing from the tree, or from the premises where grown, by washing or thoroughly spraying said fruit with a solution composed of one (1 lb.) of whale-oil soap and one-fourth of one pound of flowers of sulphur to each and every one and one-quarter (1¼) gallons of water used as such disinfectant, or in any manner satisfactory to the Chief Executive Horticultural and Health Officer.

It is necessary to do something, because there is no way that an insect can be carried hither and thither more easily than on a fruit which one can put in his pocket, and some of the oranges and lemons from some localities are well covered with the tiny pests. But it is true that the treatment of ripe fruit with whale-oil soap, etc., will destroy its market value, for the wretched perfume of whale-oil soap will not do as a substitute for the aroma of an orange. The spraying of the fruit when small and growing will no doubt prevent the lodgement of insects upon it, and smut as well, and by another year the fruit will be cleaned in this way beforehand. But now there is the infested fruit, and something must be done with it. We understand that Mr. Cooke is looking into the subject, and will no doubt give such an easement of the difficulty as he can without permitting the dissemination of the insects.

The Weekly Newspaper.

Vanity Fair and the *Golden Era*, which were consolidated some months ago, are now published by Harr Wagner and E. T. Bunyon, both of whom are young and enterprising young men. The following paragraph is from their issue of Jan. 7th:

The American people read much. In their hurry to get rich they pause to notice the recorded events of the hour. The dailies supply the news of the day. The weeklies give the matured thoughts of the week. The head-line paragrapher on a daily paper draws an immense salary, but the thinker is in demand on the weekly. The daily is to glance at, but the weekly is read. The one supplies news, the other thought. The one records events, the other theories. The one relates stories of blood and murder, the other of love and marriage. The one excites, the other satisfies. The one supplies advertisements, the other reading matter for the public. A literary newspaper, in a large and intelligent community, is a necessity. We recognize the wants of the people. A pure and elevated weekly newspaper, filled with choice literary matter, is a boon in any educated family.

RIVERSIDE CITRUS FAIR.—Under San Bernardino county in our "Agricultural Notes," this week, will be found the details of a recent meeting of the Riverside Citrus Fair Association. The pavilion enterprise has succeeded, and the building is now under way. We have no doubt that the fair, which will begin March 22d, will be the grandest display of semi-tropical fruits ever held in the United States. There have been fine ones in southern California before, but the disposition this year will be to surpass them all. We trust all citrus fruit regions will come forward with their best products, and let a generous competition for the awards prevail.

INFORMATION WANTED ABOUT RAMIE CULTURE.—It is a pretty well-settled question now that the fiber of the ramie plant can be separated and dressed by machinery quite satisfactorily and cheaply. That being the case, it is important for our culturists to know what has been the result of various undertakings in ramie culture on this coast. We therefore urge all of our readers who can, to report information on this subject for publication in our columns. Give us the facts, brief and simple, if you have not the time to write them out elaborately.

Horse Breeding in California.—No. 3.

[Written for the PRESS by JOSEPH CAIRN SIMPSON.]

Roadsters and Fast Trotters.

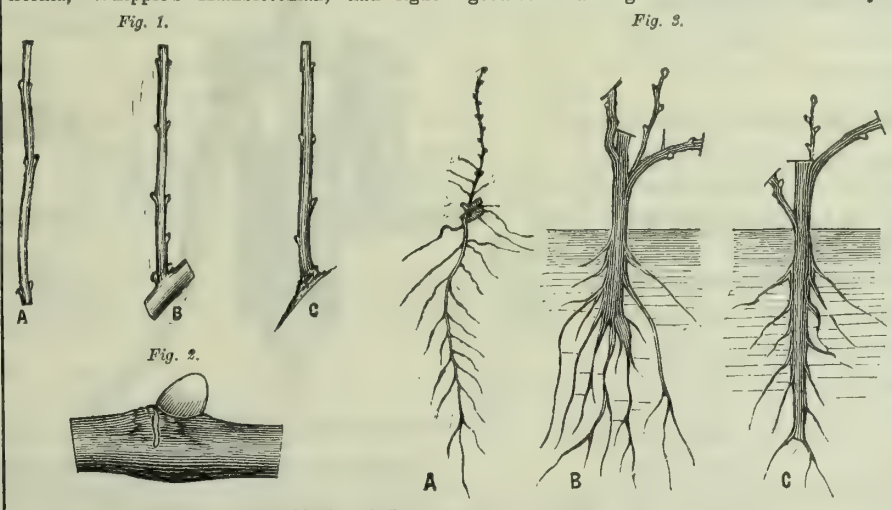
The leading strain of trotting horses, as has been previously stated, are the Hambletonians. They are more numerous than any other family, and it is doubtful if ever a horse lived which had such a number of descendants in the same number of generations as the founder of this popular breed. There were over 1,300 of his sons and daughters, and, owing to the high reputation, a majority of the males were kept entire, and this also secured them abundant patronage all over the Union. It would be mere speculative conjecture of scarcely any value to hazard a guess at the number, though anyone who has the least information on the subject will concede that this must be the dominant strain of this class of horses. Where there are such vast numbers there must be a variety of grades, and, while so many have exhibited a high degree of excellence, there must be a still larger array of mediocre ability, and not a few which are positively inferior. It would be an anomaly in breeding if it were otherwise, as there are "breeds" in studs which have been managed with rare skill, and the soundest judgment used from the selection and coupling of the procreative animals to the rearing and maturing of the progeny. The public stallion must necessarily receive many mares which are totally unfitted for him. If even the owner were reasonably certain that the offspring would not come up to the expected standard, he is loth to tell his customer what he thinks, if even the pecuniary part is a secondary consideration. It is a disparagement of the stock of his neighbor, and there is no other property which men are so sensitive about as they are of their horses. The old mare has been a favorite of long standing. Her disposition and the work she has done, especially if that has run over a series of years, has endeared her to the whole fami'y. A filly from her, though wanting in her good qualities, comes in for a share of the affection, and for Mr. ——— to tell him that either one is not good enough to mate with his horse is an insult. Thus in the second generation there is 25% of good blood and 75% of inferior. A few more generations and the valuable characteristics vanish entirely. Thus among the descendants of Ryadyk's Hambletonian are all grades, and it behooves the breeder to look closely at the intermediate links in the chain of descent.

Hambletonian was rather a peculiarly shaped horse. He had a grand constitution, with a great deal of substance and power. He could trot fast for the little education he received, and there is scarcely a doubt that he would have been very speedy with proper tuition. His form was good without showing much beauty, his head being rather coarse, and his croup considerably higher than his withers. His legs were capital, and his color all that could be desired—a dark bay. He was a "good-sized horse," large enough for most uses, without being at all unwieldy. Thus, from personal characteristics, Hambletonian was well fitted for the production of the class of horses we have in view. His sire was Abdallah, a bay horse 15¾ hands, and of fine appearance, excepting that his tail was scantily clothed with hair, and he had a thin mane. His head was a trifle coarse, but altogether he must have been a fine-looking animal, or William T. Porter would never have extolled him as he did. He wrote, in 1840, and published in the *Turf Register*, of which he was the editor, and also of the old *Spirit of the Times*, "that with the exception of Andrew Jackson, for whom $5,000 has been refused, Abdallah is the finest limbed and most blood-like trotting stallion we ever saw."

Mr. Porter was the oracle of his day in horse circles, and one of the best writers on equine subjects of any period. He was instrumental in the purchase of Abdallah for the Kentuckians, and when his stock proved to be so good in the vicinity of New York, negotiated the repurchase at more than double the amount of the original price. The dam of Hambletonian was by imported Bellfounder, and he was also a fine-looking horse of good size, and peculiarly adapted to mingle with the Abdallah blood. On the paternal side he was descended from the Norfolk Trotter, highly prized in England for fast-driving horses. According to Mr. Jacques, who at one time owned Bellfounder, his dam was by the noted race-horse, Sir Peter, from a thoroughbred mare, and from the high character of Mr. Jacques, I feel very positive that he would not have published such a statement without good grounds. Abdallah was by Mambrino, a thoroughbred son of Messenger, and was of commanding appearance. He was bay, about 16 hands, "lengthy and rangy," and was much fancied by the farmers of Long Island, on account of his stock being uniformly of a good color, upheaded, stylish and fine travelers.

The grand-dam of Hambletonian, a mare called "One Eye," was by Bishop's Hambletonian, another thoroughbred son of Messenger, and also a bay, rather smaller than Mambrino, but still of fair size, and a horse of great power and symmetry of proportion. The third dam of Hambletonian was Silver Tail, by Messenger. So that this noted thoroughbred horse figures three times in the pedigree without taking into consideration the dam of Abdallah, which was claimed to be by him or one of his sons. From this brief account it is evident that there were the proper elements in the genealogy of Hambletonian to secure favorable consideration, and that size, stamina and form were the characteristics of the ancestry on every side. It would be superogatory to occupy much space with transcribing the trotting proclivities of the family, and a few illustrations will be sufficient. The Breeders' Trotting Stud Book is a compilation of pedigrees based on a 2:30 standard. The first volume, published in May, 1881, brings up the list to the close of 1880, and through the season of 1881 has added several to the credit of sires. It will serve the purpose to copy from that. Hambletonian had 34 sons and daughters, with records ranging from 2:17¼ to 2:30. His son, Volunteer, had 21, from 2:11¼, of St. Julien, to 2:30, and this stallion has five which have trotted faster than 2:20. Geo. Wilkes had nine within 2:21 and 2:28¼. Alexander's Abdallah had five from 2:14 to 2:30. Aberdeen had four from 2:15½ to 2:25½. Happy Medium had six from 2:22¾ to 2:30. Harold had five from 2:10¾ to 2:28½—his daughter, Maud S., having reduced the figure to 2:10¼ in 1881. The sons which have representations in the 2:30 class would make a long list, but those which are quoted are sufficient to exemplify the position. It would be a grave omission, however, to skip Electioneer with his three two-year-olds with records of 2:21, 2:24¼, 2:25¼, as this is so much in advance of what any other sire can show, and when to that is added 2:36½ for a yearling, it is fair to anticipate that this California-domiciled son will outrank any other in time. The grandsons of Hambletonian are keeping up the reputation, and after making allowance for the shorter period in the stud, it appears as though that generation would be equally as potent. The first of January, 1881. Almont had 13 from 2:21¼ to 2:30, and since then, his son Piedmont has taken the second place in the line of stallions, with 2:17¼ to his credit. The grandson in California, Whipple's Hambletonian, had eight from 2:19 to 2:30; Wood's Hambletonian had six 2:20 to 2:30; Belmont (Alexander's) had five from 2:18¾ to 2:29; and so the list might be extended, until space was required much beyond the limit of these articles. My intention was to group the Pacific coast members of the family hereafter; but as it might lead to the impression that they were underrated, they will be introduced at this point. The sons of Hambletonian in this State are, Echo, Electioneer, Speculation, Arthurton, Irvington, Ulster Chief and Mohawk Chief; and they have sustained the honor of the tribe fully. Echo has Gibraltar, 2:22½; Belle Echo, 2:23¼ at four years old; Echora, 2:24½; Annie Laurie, 2.30 at three years old, and many others of great promise. In addition to the three two-year-olds by Electioneer, viz., Wildflower, 2:21, Bonita, 2:24¼, and Fred. Crocker, 2:25¼, there are several more at Palo Alto which showed very fast; Hinda Rose, yearling, record 2:36½, and others of the same age not very far behind her. Albert W., by Electioneer, was one of the best three-year-olds of last season; and besides winning several races, was "timed" in the race won by Sweetheart at San Jose last fall, in 2:28. The winner of the Embryo Stakes of 1880 and 1881 was another Electioneer. Speculation is the sire of Oakland Maid, 2:22, of Crown Point, 2:24½, and others which are sure to trot. Arthurton and Irvington, though young in the stud, can show colts which are deserving of high praise. Ulster Chief has been unfortunate in not having any of his progeny tested yet. The blood of Mohawk Chief is aiding in the Palo Alto exhibit, and his mares especially are likely to be highly prized. Happy Medium's fastest son, Brigadier, has only colts which will be three years old this spring, and they are highly thought of. There is scarcely a descendant of Rysdyk's Hambletonian here which has not merit. But the intention of this article is to give more of a general summary than to individualize, and from that showing prove that the fast trotting step is a natural inheritance of the Hambletonians. This characteristic being established beyond question, the points to consider are size, form, temper and color. The sizes of Hambletonian and his immediate progenitors have been given and the figures will come up to that which would be desired. So far as the descendants of Hambletonian have come under my observation a large proportion of them would also meet the requirements of breeders in this respect. The stallions will range from 15½ to 16½ hands and with corresponding substance. I have seen Hambletonians which were of very faulty configuration, and others which were nearly models. The highest form is found in those which had either a known and recent addition of thoroughbred blood, or where there was a strong presumption that the unknown was of that strain. I have also seen very fine shape when there was a combination of Black Hawk, Clay, Mambrino Chief, or Bashaw blood with that of Hambletonian, and also from inbreeding on the original. It would be invidious, perhaps, to say what were the causes for deterioration, and it will be sufficient for the purpose of this essay to note the examples which show the success. The rage for a time was Hambletonian and American Star, and some went so far as to claim that this was the only proper "nick." Then it was found that the Mambrino Chiefs, Clay, especially the Harry Clay mares, the Pilot Jrs., etc., were "happy conjunctions" with the blood of the "Hero of Chester." I consider that the "temper" of the Hambletonians is very good. Those I have had have been exceptionably well-disposed and "level-headed" to a degree which I never saw excelled. The greatest experience I have had was with the colts of a son of Hambletonian, Logan, owned by D. A. Gage. When associated with Mr. Gage in the breeding of horses at Atwood Place, he broke quite a number of colts by Logan and from a variety of mares. Not one gave any trouble, and after a few days' tuition a pair of them could be driven through the streets of Chicago with as much safety as horses which had been used there for years. From what I have seen of others I am inclined to the belief that it is a family trait, though, of course, there are likely to be not a few of contrary proclivities.

It is rare indeed to see other than horses of "good color" among the Hambletonians. Bays and browns are the prevailing shades, with occasionally chestnuts. For all the inbreeding to the gray Messenger, it is seldom that there is a reversion to that hue, and the causes are, in all probability, the divergence in the sons, Bishop's Hambletonian and Mambrino, and to the influence of Bellfounder. From this short sketch it is apparent that this race of horses is well adapted for one of the component parts of the roadster and fast trotter, such as the general farmer may expect to rear at a profit, and fortunately, there are other strains in California which are worthy of conjunction. This will be evident as the work progresses.



GRAPE CUTTINGS AND THEIR MANNER OF GROWTH.

THE STATE AGRICULTURAL SOCIETY.—The State Board of Agriculture met in Sacramento, on Monday Feb. 6th, all members except J. D. Carr being present. H. M. La Rue was elected President without opposition. Retiring Pres. Shafter donated $300 of his salary to the society; he gives $100 in special premiums at the next fair, and the Board voted him a $100 silver service. Superintendent of the Park Hancock donated half his salary to the society and the other half, $50, will be given him in the form of a silver pitcher. At the evening session a committee was appointed with full power to act in the matter of widening the park track, and the salary and traveling expenses of the president for the coming term were fixed at $200. No action was taken on the premium list, which was deferred till the next meeting. The secretary was instructed to send out the last premium list to all exhibitors, inviting their suggestions and amendments, made necessary by the backwardness of the season. Edward F. Smith was re-elected Sec'y, L. Upson, Treasurer, and Chris Green, Supt. of the Park. The Board then adjourned till April, 13th.

OUR DRIED FRUIT INTEREST.—We had a talk the other day with J. M. Hixson, of the firm of Hixson, Justi & Co., who has lately returned from a prolonged visit to the Eastern cities in the interest of California productions. Mr. Hixson has gained much information on the subject of marketing our dried fruit, which may be of value to our producers, and if a visitor can get him in a talking mood, he can get an hour's commercial lecture without cost.

Propagation of Vines by Cuttings.

The report of Chas. A. Wetmore, Chief Viticultural Officer, to which we made allusion in a recent issue, contains much practical information on vine growing, as well as discussions of other matters affecting the industry. We have secured permission to reproduce such parts of the report as we may deem of especial interest to our readers, and at this time we present some considerations in connection with the propagation of grapevines by cuttings, as that is the matter which is attracting most attention just at this time. The report contains a translation of a Practical Manual of Viticulture, by Gustave Foex, with illustrations. Therefrom we collate the following hints and instructions: Canes intended for cuttings should not be cut until well ripened. Moreover, cuttings from plants attacked with divers cryptogamic diseases, such as anthracnose, mildew, etc., must not be used; generally they are not so well nourished, and moreover risk propagating in the new plantation the evil with which they are attacked. It has been observed that generally the cuttings of average development, with nodes not far apart, and taken from the middle of the cane, present the greatest chances for rooting, and produce the most fruitful plants, and those that yield the soonest. Large canes do not root as easily, and tend to produce wood rather than fruit; while those that are too slender run the risk of withering before taking root, they are often insufficiently ripened, and generally do not make very vigorous plants. It is expedient, in the reproduction of vines cultivated for their fruit, to choose in preference canes whose flowers set well, and which have yielded the finest and most abundant fruit. These characteristics, peculiar to the cane, are firmly established by this sort of choice, and thus a notable increase in the production will be obtained. When, on the contrary, it is a question of producing grafting-stocks, it is only necessary to make sure of obtaining vigorous plants, and there is no need of taking these last points into account.

When the cuttings must be kept some time before setting them out, the surest means of preserving their vitality is to bury them in a heap of sand in a cellar or similar place. When they have to be kept but a short time after being cut, it suffices to immerse the lower part in water.

The kinds of cuttings generally used for vines are the mallet cutting and the ordinary cane of new wood. The mallet cutting is the lower part of a cane having a mallet or piece of wood two years old attached obliquely to the base (Fig. 1 *B*). The swelling found at the point where the cane unites with the old wood is very rich in latent buds, susceptible of developing under ground into roots. It has long been used almost exclusively on this account; however, it is difficult to plant it with the dibble, owing to the oblique position of the mallet; moreover, the wood of the latter, too old to root well, frequently decays, injuring the health of the plant. It has been suggested, as a remedy for these faults, to do away with the two-year-old wood, leaving only the swelling at the end of the cane (Fig. 1 *C*); there are then the best chances for success as regards rooting. It is general to resort to the ordinary cutting of new wood (Fig. 1 *A*). This last, which is the simplest and easiest to procure, moreover, gives perfectly satisfactory results; it consists, as its name indicates, of a single fragment of a cane whose length varies according to circumstances.

According to rule, and if only the development and good constitution of the forthcoming plant is cared for, the shortest cuttings are the best. Cuttings with a single eye, for instance (Figs. 2 and 3 *A*), give rise to a cluster of very strong roots continuous with the cane, which assures remarkable vigor to the plant. Very long cuttings, on the contrary (Fig. 3 *C*), are covered with a great many tufts of roots arranged on each node, not one of which acquires great development, and which diminish in length from top to bottom down to a point where the cane, incapable of putting forth any more, is without apparent vitality, and sometimes ends in dying and partially decomposing. But the question is not so simple as it at first appears. The cutting must be planted in sufficiently wet soil to insure its taking root. Now, in most cases, the requisite freshness is found only at some depth in the soil; whence the necessity of giving the cutting a greater length than at first appears desirable. Cuttings, therefore, should be longer as the soil in which they are to root is drier. Generally their length may vary between 6 and 14 inches (Fig. 3 *B*), the cane not being above the ground more than one or two eyes; in most cases it would be inexpedient to overstep these limits.

Independently of the two types we have just mentioned, it has been proposed to use the cutting having a single eye under ground (Fig. 2), and herbaceous cuttings, in order to multiply American vines economically. Unfortunately, when applied to the *V. æstivalis*, which alone, thanks to their high price, can pay the expenses of hotbed frames, hotbeds, etc., requisite in this method of reproduction in the South, the first does not take root in sufficient proportion for it to be of interest to use it. As to herbaceous (green) cuttings, we can rationally dream of using in this way only the refuse that is cut off in trimming grafts. Set out in light soil, irrigated, and properly shaded, they take root tolerably well, but do not make such thrifty plants as do the good, well-ripened cuttings.

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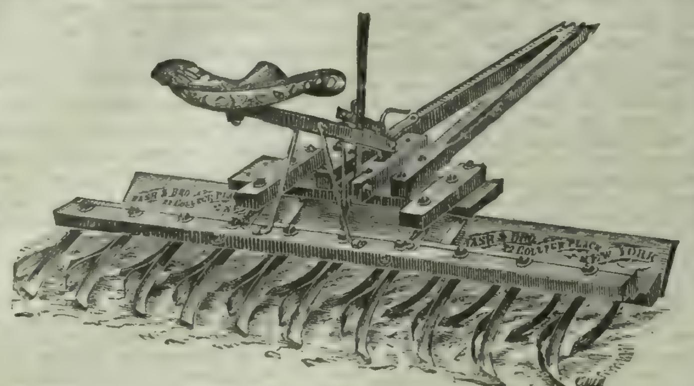

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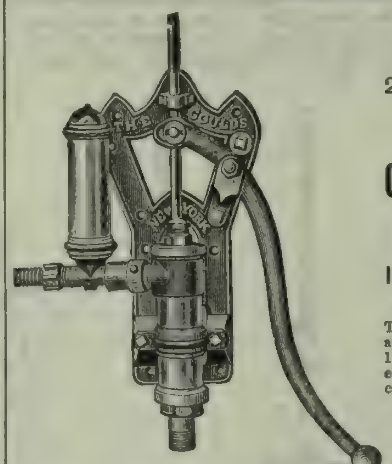

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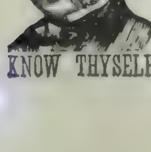

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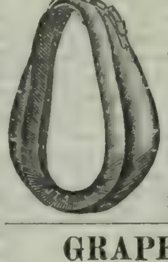

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FOR MINING, IRRIGATION, MECHANICAL DOMESTIC & MUNICIPAL PURPOSES

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40 Merchants' Exchange San Francisco, Cal.

MERRILL'S PATENT REIN HOLDER.

This is a sure and certain preventative to keep horses from running away. **Price $2.50.** Address W. P. MERRILL, Florin, Sacramento Co., Cal.

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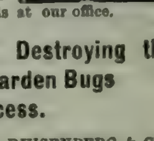
EXTRACT OF TOBACCO.



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Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

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An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable. Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

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Bulbs, Seeds and Plants.

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WM. FARRINGTON, Santa Clara, Cal. Breeder of Norman horses; owner of the horse "Cunard," of stock of Perry's importation.

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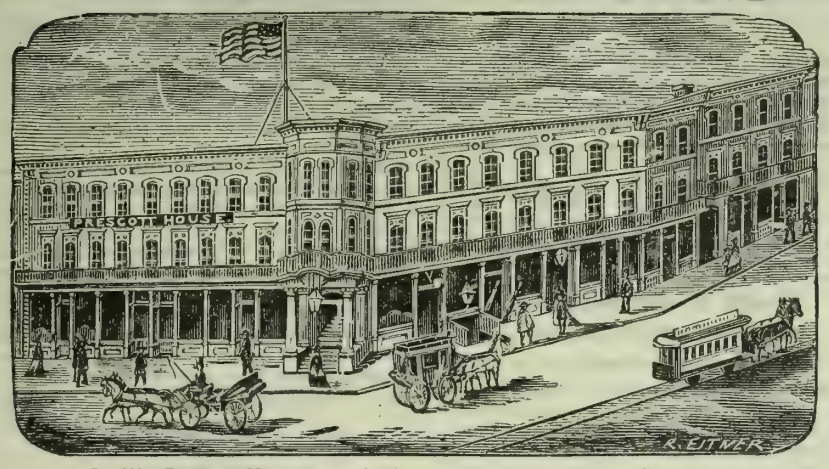

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Of all kinds and sizes.

Keeps a good supply of well seasoned wood on hand. Blacksmithing and painting departments in connection.

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LITTLE'S CHEMICAL FLUID.

The New Non-Poisonous Sheep Dip and Disinfectant. Price reduced to $1.00 per gallon. For directions and testimonials apply to FALKNER, BELL & CO.,

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Goods Crops every Season without Irrigation

Farms, Stock Ranches, Dairy Farms, Fruit Farms, Vineyards, Chicken Ranches and homesteads of every class and description in this and adjoining counties for sale or rent on reasonable terms. State requirements and obtain suitable particulars from the Real Estate

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MAIN ST., STOCKTON, CAL. FIRST-CLASS HOUSE

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This House is the Leading Hotel of the City, containing all the modern improvements. General Ticket Office for the Big Trees, Yosemite Valley, Bodie, and General Stage Office for all the Southern Mountain Towns. The Yosemite Coach will convey guests from the boats and all trains, free of charge

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65,000 tons capacity. Storage at lowest rate

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The most complete, compact, durable and effective machine for pumping and other light work. No jerk or jar; runs easy and gives a continuous stream of water. Is light, portable, convenient to move or set in operation. Capacity, 2 000 gallons an hour, with one horse. Weight, all told, 600 lbs.

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LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

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ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1881.

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The Famous "Enterprise,"

PERKINS' PATENT Self Regulating

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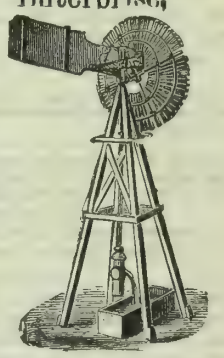
Pumps & Fixtures.



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All sizes of Pumping and Power Mills. Thousands in use. *All warranted.* Address for circulars and information

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AMERICAN CHIEF GANG PLOW.

Took the Premium over all at the great plowing Match in Stockton, in 1870.

This Plow is thoroughly made by practical men who have been long in the business and know what is required in the construction of Gang Plows. It is quickly adjusted. Sufficient play is given so that the tongue will pass over cradle knolls without changing the working position of the shares. It is so constructed that the wheels themselves govern the action of the Plow correctly. It has various points of superiority, and can be relied upon as the best and most desirable Gang Plow in the world.

Iron Founders, Machinists and Manufacturers of Improved Agricultural Implements. General Jobbing and repairing done in the best manner at most reasonable rates. Send for circular to MATTESON & WILLIAMSON, Stockton, Cal.

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CLYDESDALE AND HAMBLETONIAN

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The largest and deepest milking herd of Holsteins in the world. 225 head, pure bred, mostly imported, males and females of different ages.

A Large and elegant stud of imported Clydesdale Stallions and Mares of all ages.

Hambletonian Stallions and Mares of superior breeding Personal inspection invited. Separate catalogues of each class, and milk records of cows mailed free on application. All inquiries promptly answered. State that you saw this advertisement in the PACIFIC RURAL PRESS.

SMITHS & POWELL,

Lakeside Stock Farm, Syracuse, N. Y.

Hunter's Eccentric Patent Coupling.

For carriages, pumps and whiffletrees and other couplings. No bolts, no rattling and no unhitching. State and County rights for sale. Address HUNTER & FRANCIS, Merced, Cal.

SEEDS.—The Seed Annual for 1882, just published by D. M. Ferry & Co., Detroit, Mich., and supplied free to all upon application, is a most valuable work, and worthy of a place in any library. Not only are its illustrations of first-class order, but its pages are full to repletion with information of the most valuable kind to all who grow anything from the tiniest flower to the largest garden crops. Being themselves seed growers on the largest scale, they bring the work an amount of practical experience hardly equalled by any others, while they are thus enabled to supply seeds of the purest quality and most vigorous growth that can be obtained. We gladly call attention to their advertisement in our column elsewhere.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

A TURNED LEAF will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

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AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.

ANNUAL STATISTICIAN of 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 816 California st. Price, $4.

Volunteer Testimonials of Those Who Have Used Booth's Exterminator.

SAN LUIS OBISPO, June 10, 1881.

MR. A. R. BOOTH.—*Dear Sir:* I tried one of your cans of Squirrel Poison, and find it very good. I found 42 dead squirrels after putting it out, and I think there were more which I did not find. Yours, J. B. TOWNSEND.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired), be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

The Pacific Rural Press

[Established in San Francisco in 1870.]

This is the leading farming journal on the western half of the continent, and second to none in America. It is well printed and illustrated, weekly. Contains an unusual amount of fresh, original farm, household and family circle literature. Careful attention is paid to giving full and reliable weekly market reports. The following are among its ably conducted departments: Editorials on agricultural and other timely and important subjects of live interest to farmers and their families; agricultural, and other useful and ornamental illustrations; correspondence from various quarters of our new and rich developing fields of agriculture on the Pacific coast, embracing new hints and ideas from progressive men and women in all branches of rural industry; Horticulture; Floriculture; The Garden; The Home Circle; The Grange; Young Folks; Domestic Economy; Good Health; Entomological; Sheep and Wool; The Dairy; The Stock Yard; Poultry Yard; The Swine Yard; The Apiary; The Vineyard; Queries and Replies; New Inventions (and illustrations of new and improved machinery); Agricultural Notes; Items of General News, etc. Its columns are studiously filled with chaste, interesting, fresh and useful reading, devoid of questionable literature for old or young and fancifully alluring clap-trap advertisements. Send for sample copies.

Subscriptions, *in advance*, $3 a year. Agents wanted, on liberal pay DEWEY & Co., Publishers.
No. 252 Market St., S. F., Cal.

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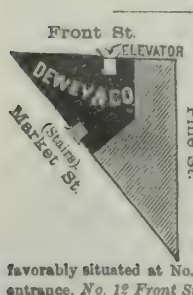
We have some desirable rooms to let adjoining the offices of this paper which will be rented on favorable terms. Stair entrance, No. 252 Market St. Elevator, No. 12 Front St. Parties wishing offices, etc., will do well to call and see them. DEWEY & CO.



Dewey & Co.'s Patent Agency and Newspaper Offices.

Dewey & Co.'s Patent Agency and the business offices of the Mining and Scientific Press, Pacific Rural Press, Pacific States Watchman and the Fraternal Record are now favorably situated at No. 252 Market Street. Elevator entrance, *No. 12 Front St., S. F.*

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

REMITTANCES to this office should be made by postal order or registered letter, when practicable; cost of postal order, for $15 or less, 10 cts.; for registered letter, in addition to regular postage (at 3 cts. per half-ounce), 10 cts

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Feb. 8, 1882.

The continued drouth has tended to raise prices on nearly all kinds of produce. Grain is especially firmer because of chance of a short crop. Butter is raised by the short growth of grass owing to the cold. Trade is rather light and for present uses.

The latest from abroad is the following:

LIVERPOOL, Feb. 7.—Wheat: California spot lots are steady, at 10s 8d@11s 1d. Cargo lots are quiet and steady; the rates are 49s for just shipped, 50s 6d for nearly due and 50s 6d for off coast. Receipts of Wheat the past three days, 164,000 centals, including 81,000 American.

Freights and Charters.

Freights are weaker, owing to the continued dry weather, and tonnage holders are inclined to press ships on the market. Quotations are about £3 5s Cork for orders, and have a decided softening tendency. Charters for the past week number 8 vessels, of a register of 10,289, or a carrying capacity of 15,483 short tons, or 308,660 ctls. The disengaged tonnage in port has now a register of 43,563, or an export capacity of 65,344 short tons or 1,306,880 ctls, against 5,023 tons at the same time in 1881.

Eastern Grain and Provision Market.

CHICAGO, Feb. 4.—There is great activity in the Wheat trade, and fluctuations admitted of lively speculation. The deal is, however, manipulated by a few heavy dealers, and there is no very marked tendency, what is lost one day is being regained the next. Wheat was the most active and unsettled, although provisions were at times decidedly animated in expectation of a squeeze. Corn is steady each day. Oats were exceptionally weak, and steadily declined. The sales of March options during the week were as follows: $1.30⅞@$1.33¾; Corn, 60¼@60⅝c.; Oats, 41¾@43c; Pork, $18.22½@18.35; Lard, $18.22½@18.45. The receipts of grain for the week were: Flour, 116,000; Wheat, 221,000; Corn, 1,288,000; Oats, 510,000; Rye, 33,000; Barley, 158,000. Shipments of Flour, 94 000; Wheat, 147,000; Corn, 1,251,000; Oats, 630,000; Rye, 21,000; Barley, 101,000. Receipts for the same time last year: Flour, 107,000; Wheat, 157,000; Corn, 684,000; Oats, 474,000; Rye, 28,000; Barley, 117,000. Shipments of Flour, 123,000; Wheat, 70,000; Corn, 483,000; Oats, 396; Rye, 25,000; Barley, 106,000. The condtiion of affairs as regards the movement is very satisfactory to holders.

CHICAGO, Feb. 7.—Wheat, easy, at $1.30⅜ cash, $1.31⅜ for March. Corn, weak, at 60 cash, 60⅜@60½ for March Pork, easy, at $18 50 cash, $18.57½ for March. Lard, easy, at $11 32½ cash, $11 32½ for March. Short ribs, $9.40 cash, $9.45 bid for March.

The Foreign Review.

LONDON, Feb 7.—The Mark Lane *Express* in its review of the British grain trade for the past week, says: The condition of the Wheat plant is very satisfactory. The native grain trade is unchanged; foreign Breadstuffs are nominally unaltered. There is an ample supply of foreign Flour, but the trade is very slow. There is a small Corn supply. Maize is practically unchanged. Oats are very dull. Of sales, cargoes off coast are dull, closing worse on Saturday. The easterly winds have detained the California ships, and the rising bank rates have prejudiced business. Fifteen cargoes arrived, of which six were sold and one withdrawn. On Friday, 52s 6d was refused for No. 1 California, and 55s for Oregon. Trade in forward is inanimate. The sales of English Wheat were 50,080 quarters, at 46s 1d per quarter, against 30,559 quarters, at 42s 7d per quarter for the corresponding week of last year.

Eastern Wool Markets.

BOSTON, Feb. 4.—The Wool market has been quiet, and prices are unchanged and are firm for all kinds of Wool except coarse and low. The transactions of the week amount to 1,638,000 lbs. of all kinds against 1,745,000 lbs. for the same week of last year. In Ohio and Pennsylvania fleeces, the sales of the week have been 207,800 lbs., from 43½@49c. Included in these sales are 15,000 lbs. choice XXX Ohio at 49c, the highest obtained for fine Wools for some time. In Michigan and other fleeces business has been light. The sales of medium and No. 1 fleeces have been at 44@47c, for New York, Michigan and Ohio. Not much is doing in combing and delaine fleeces, but the sales have been at fair prices, and in some instances 52c has been realized for choice combing. In coarse, unwashed and medium combing the sales have been from 25@32c. California Wools have been quiet, and prices steady. Pulled Wools are firm. Choice supers continue to command extreme prices. In foreign Wools the principal business has been in new Australia, 94,000 lbs. selling at 43@46c. Carpet Wools are quiet.

BOSTON, Feb. 7.—There is no change in Wool. Manufacturers are purchasing sparingly, but the weather has been unfavorable for active movements. In California Wool there is but little doing. In foreign Wool business has been light for some days past.

BAGS—Bags are quiet and unchanged.

BEANS—Beans have advanced sharply and are firmly held. Our list shows an advance of $1 per ctl on some sorts.

BARLEY—Barley is active and the demand strong. The advance is 5@7½c per ctl. We note sales: 200, 100 and 30 tons brewing, $1.85; 400 sks light do, $1.80; 700 ctls Chevalier, $1 80; 1,200 sks Chevalier, 1,200 sks feed and 500 sks do, $1.77½, 2,000 and 400 sks Chevalier $1.75; 500 sks poor feed, 1.72½; 1,400 sks do, $1.70 and 1,800 sks old weevilly do, $1.68¾ ℔ ctl.

CORN—Corn is in short supply and has risen quickly to $2@$2.20 ℔ ctl.

DAIRY PRODUCE—Butter is scarce and higher, sellup to 32½c ℔ lb. Cheese is lower, owing to new supplies.

EGGS—Eggs are 5c higher per dozen.

FEED—Hay has advanced $1 per ton for all kinds. Corn Meal has gone up to $40@$41 per ton.

FRESH MEAT—Choice Beef is advancing and Pork is firm at a fraction better. Mutton is cheaper and many poor sheep are coming in. Some of the Lambs arriving are in shocking condition.

FRUIT—Apples are unchanged. Oranges and Lemons are selling better, and Limes are notably high.

HOPS—There is nothing doing of any consequence.

OATS—Oats are still arriving from the north, but are firmly held, and will profit by the rise in Barley.

ONIONS—There is no change.

POTATOES—Prices gain about 5c per ctl this week, and supplies are moderate.

POULTRY AND GAME—The Chinese New Year is giving Fowls a short demand, and young Roosters have notably advanced.

PROVISIONS—There is no change in prices and a fair trade.

VEGETABLES—One box of Asparagus from Alameda sold at 40c per lb. Green Peas from the lower coast are still coming in, and bring 12½@15c per lb. Stock Vegetables are unchanged.

WHEAT—An advance of 5c per ctl is noted, but there is not much selling. The talk is of the movement of Wheat over the new railroads through Arizona. The freight rate of the 5,000 tons, which is to go from California by rail to St. Louis and thence down the Mississippi to Europe, is $13 per ton, which, at the price paid for the Wheat delivered at St. Louis, makes $1.77½ per ctl net at Stockton, the shipping point. The delivery runs through April.

WOOL—There is no change and little trade.

Domestic Produce.

WHOLESALE.
WEDNESDAY M., February 8, 1882.

BEANS & PEAS.		Brazil	10 @ 11
Bayo, ctl	— @3 25	Pecans	13 @ 15
Butter	4 00 @4 25	Peanuts	6 @ 6½
Castor	3 50 @4 00	Filberts	14 @ 15
Pea	— @5 00	**ONIONS.**	
Red	— @3 12½	Red	— @ —
Pink	— @3 12½	Silverskin	50 @ 75
Large White	3 00 @3 25	Oregon	— @ —
Small White	— @5 00	**POTATOES.**	
Lima	5 50 @5 75	Early Rose	1 75 @1 80
Field Peas, b'lk eyel	50 @1 75	Petaluma, ctl	1 75 @1 85
do, green	2 00 @2 25	Tomales	— @ —
BROOM CORN.		Humboldt	1 75 @1 90
Southern	3 @ 3½	" Kidney	— @1 75
Northern	4 @ 6	" Peachblow	1 75 @1 90
CHICCORY.		Jersey Blue	— @ —
California	4 @ 4½	Cuffey Cove	— @ —
German	6½@ 7	River, red	1 50 @1 60
DAIRY PRODUCE, ETC.		Chile	1 50 @1 55
BUTTER.		do, Oregon	— @ —
Cal. Fresh Roll, lb.	27 @ 30	Sweet	1 00 @1 25
do Fancy Brands	31 @ 32½	**POULTRY & GAME.**	
Pickle Roll	22½@ 26	Hens, doz	5 00 @ 7 00
Firkin, new	22 @ 26	Roosters	4 00 @ 8 00
Eastern	20 @ 22½	Broilers	4 00 @ 6 00
New York	— @ —	Ducks, tame, doz	5 50 @ 7 00
CHEESE.		Mallard	2 50 @ 3 00
Cheese, Cal., lb	17 @ 19	Sprig	1 50 @ 1 75
EGGS.		Teal	75 @ 90
Cal. Fresh, doz	27½@ 30	Widgeon	1 00 @1 12½
Ducks	— @ 25	Geese, pair	1 50 @2 00
Oregon	21 @ 22	Wild Gray, doz	1 75 @2 00
Eastern, by expr'ss	- @ —	White do	50 @1 00
Pickled here	— @ —	Turkeys	12½@ 14
Utah	— @ —	do, Dressed	13 @ 15
FEED.		Turkey Feathers, tail and wing, lb.	10 @ 20
Bran, ton	— @19 00	Snipe, Eng	1 50 @2 00
Corn Meal	40 00 @41 00	do, Common	50 @ 75
Hay	11 00 @17 00	Quail, doz	75 @ 80
Middlings	— @28 00	Rabbits	1 00 @1 25
Oil Cake Meal	— @30 00	Hare	1 50 @1 75
Straw, bale	— 62½@— 70	Venison	5 @ 7
FLOUR.		**PROVISIONS.**	
Extra, City Mills	5 25 @5 62½	Cal. Bacon, extra clear, lb	13 @ 13½
do, Co'ntry Mills	4 75 @5 00	Medium	12 @ 13½
do, Oregon	4 75 @5 12½	Light	13 @ 14
do, Walla Walla	4 50 @5 00	Lard	13 @ 17
Supertine	3 50 @4 25	Cal. Smoked Beef.	11½@ 12½
FRESH MEAT.		Shoulders	9½@ 10½
Beef, 1st qual'y, lb.	6½@ 8½	Hams, Cal	12½@ 13½
Second	5½@ 6½	do, Eastern	16 @ 16½
Third	4 @ 4½	**SEEDS.**	
Mutton	4 @ 5	Alfalfa	12 @ 13
Spring Lamb	8 @ 10	do Chile	— @ —
Pork, undressed	5½@ 6½	Canary	3½@ 4
Dressed	8½@ 9	Clover, Red	14 @ 15
Veal	7½@ 8	White	45 @ 50
Milk Calves	7½@ 8	Cotton	— @ 20
do, choice	— @ 10	Flaxseed	2½@ 3½
GRAIN, ETC.		Hemp	— @ 5
Barley, feed, ctl	1 75 @1 77½	Italian Rye Grass	25 @ —
do, Brewing	1 80 @1 85	Perennial	25 @ —
Chevalier	1 75 @1 77½	Millet, German	10 @ 12
do, Coast	1 50 @1 60	do, Common	7 @ 10
Buckwheat	— @1 50	Mustard, White	1½@ 2½
Corn, White	2 00 @2 20	Brown	2½@ 3
Yellow	— @2 00	Rape	2½@ 2½
Small Round	— @2 00	Ky Blue Grass	20 @ 25
Oats	1 75 @1 85	2d quality	16 @ 18
Milling	1 80 @1 87½	Sweet V Grass	— @ 75
Rye	2 25 @2 30	Orchard	20 @ 25
Wheat, No. 1	1 70 @1 72½	Red Top	— @ 15
do, No. 2	1 62½@1 67½	Hungarian	8 @ 10
do, No. 3	1 45 @1 50	Lawn	30 @ 40
Choice Milling	— @1 75	Mesquit	10 @ 12
HIDES.		Timothy	9 @ 10
Hides, dry	— @ 18	**TALLOW.**	
Wet salted	9½@ 11	Crude, lb	6 @ 6½
HONEY, ETC.		Refined	9½@ 10
Beeswax, lb	23 @ 25	**WOOL, ETC.**	
Honey in comb	15 @ 20	FALL—1881.	
Extracted, light	9 @ 10	San Joaquin	9 @ 14
do, dark	7½@ 9	do, Lamb	13 @ 15
HOPS.		Southern Fall	9 @ 12
Oregon	20 @ 21	do lambs'	13 @ 14
California, new	24 @ 26	Northern, free	16 @ 20
Wash. Ter	23 @ 24	do, defective	14 @ 16
Old Hops	— @ —	Mountain, free	16 @ 18
NUTS—Jobbing.		do, slightly seedy.	13 @ 15
Walnuts, Cal	10 @ 11	Humboldt & Mendocino	18 @ 21
do, Chile	7½@ 8		
Almonds, hd shl lb	8 @ 10		
Soft shell	14 @ 15		

Fruits and Vegetables.

[WHOLESALE.]
WEDNESDAY M., February 8, 1882.

FRUIT MARKET.		Pears, sliced	— 9 @— 9½
Apples, bx	1 00 @ 2 03	do whole	— 7 @— 8
Bananas, bnch	2 50 @ 4 00	Plums	— 5 @— 6
Cocoanuts, 100	6 00 @ 7 00	Pitted	— 13 @— 14
Cranberries, bbl	14 00 @16 00	Prunes	— 9 @— 12½
Limes, Mex	13 00 @16 00	Raisins, Cal, bx	— — @ 2 50
do, Cal, box	2 00 @ 8 00	do, Halves	— — @ 2 75
Lemons, Cal, bx	1 50 @ 3 50	do, Quarters	— — @ 3 00
Sicily, box	6 50 @ 7 50	Eighths	— — @ 3 25
Australian	— — @— —	Zante Currants	— 8 @— 10
Oranges, Cal, bx	1 75 @ 3 50	**VEGETABLES.**	
do, Tahiti M	— — @— —	Artichokes, doz	— — @— 50
do, Mexican	15 00 @17 00	Asparagus, lb	— — @— 40
do, Loreto	— — @— —	Beets, ctl	— — @— 65
Pears, bx	— — @— —	Cabbage, 100 lbs	— 75 @ 1 00
Pineapples, doz	7 00 @ 8 00	Carrots, sk	— 30 @— 60
DRIED FRUIT.		Cauliflower, doz	— 85 @ 1 00
Apples, sliced, lb	— 6 @— 6½	Garlic, lb	— 1½@— 2
do, evaporated	— 10 @— 11	Lettuce, doz	— 10 @— —
do, quartered	— 5 @— 5½	Mushrooms, lb	— — @— 15
Apricots	— 15 @— 17	Okra, lb	— 5 @— 8
Blackberries	— 14 @— 16	Peas, green, lb	— — @— 15
Citron	— 28 @— 30	Parsnips, lb	— — @— 4
Dates	— 9 @— 10	Squash, Marrow	
Figs, pressed	— 4 @— 6	Hat, ton	—10 00 @12 00
do, loose	— 3½@— 5	Tomatoes	— 7 @— 10
Nectarines	— 14 @— 15	Turnips, ctl	— — @— 75
Peaches	— 11 @— 11½		
do pared	— 14 @— 18		

General Merchandise.

WHOLESALE.
WEDNESDAY M., February 8, 1882.

CANDLES.	
Crystal Wax	16 @18
Paraffine	20 @—
Patent Sperm	25 —28
CANNED GOODS.	
Assrtd Pie Fruits.	
2½ lb cans	2 25
Table do	3 50 @ —
Jams and Jellies	3 75 @ —
Pickles, hf gal	3 25 @ —
Sardines, qr box	1 67 @ —
Hf Boxes	2 50½@1 90
Merry, Faull & Co.s Preserved Beef	
2lb, doz	3 25 @3 —
do 4 lb doz	6 50 @6 —
Preserved Mutton	
2 lb, doz	3 25 @3 50
Beef Tongue	5 75 @6 00
Preserved Ham,	
2 lb, doz	5 50 @5 60
Deviled Ham, 1 lb, doz	3 00 @3 50
do Ham ½ lb doz	2 50 @ —
Boneless Pigs Feet	
3lbs	3 50 @3 75
2 lbs	2 75 @ —
Spiced Fillets 2 lbs	3 50 @ —
Head Cheese 3 lbs	3 50 @ —
COAL—Jobbing.	
Australian, ton	— @ 8 50
Coos Bay	6 50 @ 7 50
Bellingham Bay	— @ —
Seattle	7 00 @ —
Cumberland	— @13 00
Mt Diablo	— @ —
Lehigh	— @ —
Liverpool	— @ —
West Hartley	— @ 9 00
Scotch	— @ 8 50
Scranton	— @ —
Vancouver Id	— @ —
Wellington	— @ 9 00
Charcoal, sack	— @ —
Coke, bush	— @ —
COFFEE.	
Sandwich Id lb.	— @ —
Costa Rica	12 @ 14
Guatemala	12 @ 14
Java	18 @ 20
Manilla	15 @ —
Ground, in cs	— @ 22½
FISH.	
Sac'to Dry Cod	— @ — 5
do in cases	— @ 5½
Eastern Cod	— 7 @ — 7½
Salmon, bbls	7 00 @ 7 50
Hf bbls	3 50 @ 4 00
1 lb cans	1 12½@ 1 22½
Pkld Cod, bbls	— @ —
Hf bbls	— @ —
Mackerel, No. 1	
Hf bbls	9 50 @ 10 00
In Kits	1 75 @ 1 85
Ex Mess	3 50 @ 4 00
Pickled Herring, box	3 00 @ 3 50
Boston Smoked Herring	65 @ — 70
LIME, etc.	
Plaster, Golden Gate Mills	3 00 @ 3 25
Land Plaster, ton	10 00 @ 12 50
Lime, Snta Cruz bbl	1 25 @ 1 50
Cement, Rosendale	1 75 @ 2 00
Portland	3 75 @ 4 00
NAILS.	
Assrtd sizes, keg	3 75 @ 4 00
OILS.	
Pacific Glue Co's Neatsfoot, No. 1	1 00 @1 00
Castor, No. 1	— @1 05
do, No. 2	— @ 95
Baker's A A	— @1 30
Olive, Plagnoil	5 25 @5 75
Possel	4 75 @5 25
Palm, lb	9 @ —
Linseed, Raw, bbl	— @ 60
Boiled	— @ 65
Cocoanut	60 @ —
China nut, cs	68 @ 69
Sperm	1 40 @ —
Coast Whales	35 @ —
Polar	— @ —
Lard	— @1 00
Petroleum (110°)	18 @ 22
Petroleum (150°)	28 @ 35
PAINTS.	
Pure White Lead	7½@ 8
Whiting	1½@ —
Putty	4 @ 5
Chalk	1½@ —
Paris White	2½@ —
Ochre	3½@ —
Venetian Red	3½@ —
Averil mixd Paint gal	
White & Tints	2 00 @2 00
Green, Blue and Ch Yellow	3 00 @3 50
Light Red	3 00 @3 50
Metallic Roof	1 30 @1 60
RICE.	
China Mixed, lb	4½@ 5
Hawaiian	4½@ 5
SALT.	
Cal. Bay, ton	14 00 @22 00
Common	6 50 @14 00
Carmen Id	14 00 @22 00
Liverpool fine	14 00 @20 00
SOAP.	
Castile, lb	9 @ 10
Common brands	4½@ 6
Fancy Brands	7 @ 8
SPICES.	
Cloves, lb	37½@ 40
Cassia	19 @ 20
Nutmegs	85 @ 90
Pepper Grain	15 @ 16
Pimento	16 @ 17
Mustard, Cal ½ lb Glass	— @1 25
SUGAR, ETC.	
Cal. Cube lb	— @ 11½
Powdered	— @ 12
Fine Crushed	— @ 11½
Granulated	— @ 10½
Golden C	— @ 9½
Cal Syrup, kgs	65 @ —
Hawaiian Mol'sses	25 @ 30
TEA.	
Young Hyson, Moyune, etc	40 @ 65
Country pkd Gunpowder & Imperial	35 @ 75
Hyson	30 @ 35½
Fooo-Chow O	27½@ 32
Japan, medium	35 @ 37½

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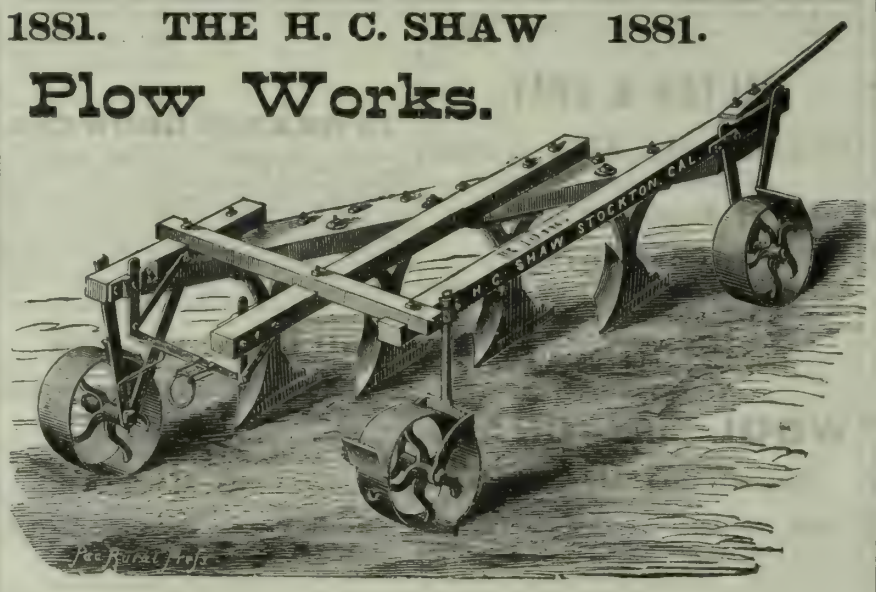

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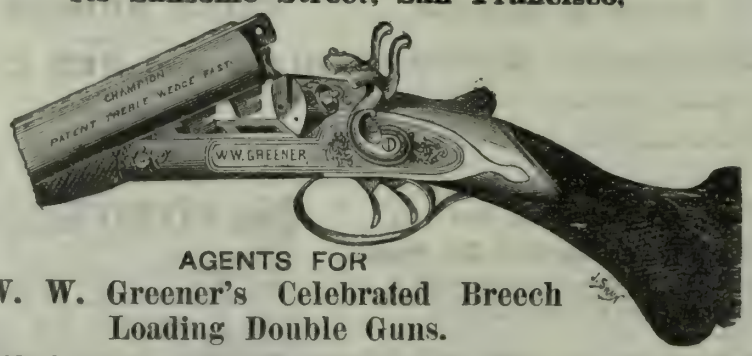

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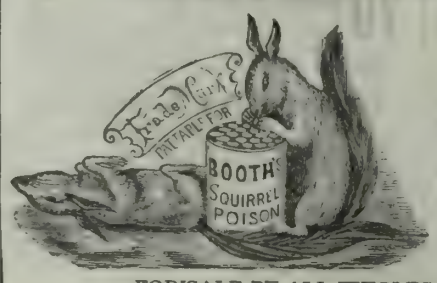

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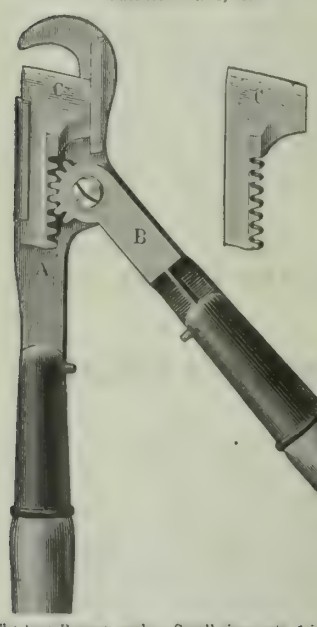

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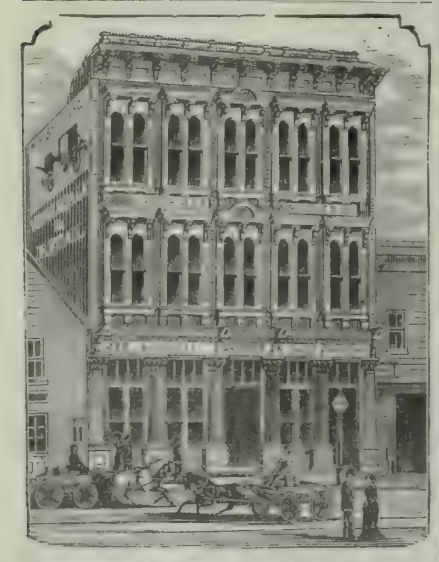

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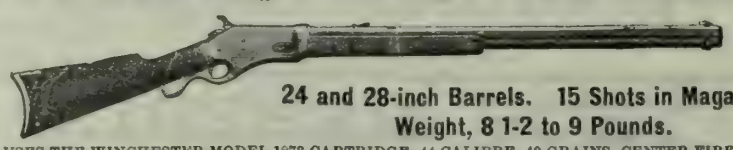

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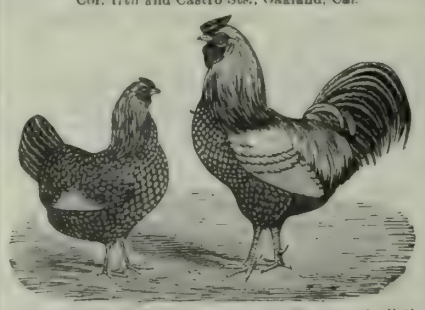

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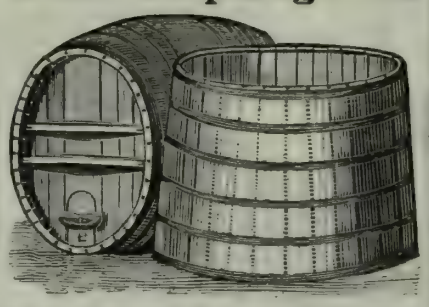

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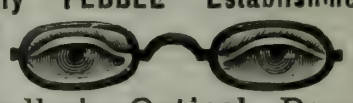
1863  1882

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PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, FEBRUARY 18, 1882. Number 7

Agricultural Banks.

We have made great progress in this State during the last few years in gaining proper recognition for agricultural security by our banking institutions and the reduction of the rate of interest on such loans is one of the greatest benefits which our farmers have enjoyed. It is interesting that the good character of agricultural security is gaining recognition from financiers everywhere, and that money is being turned to the assistance of legitimate producers instead of giving all the favors to city securities and speculation. We read in a foreign exchange that some agricultural credit banks are about to be opened in Roumania, which will be founded by the Government. The following are a few of the particulars of the scheme: Banks will be opened in the capital of every district, each of which will be independent of the other. The bank will be formed for a period of twenty years, though the stated period can be lengthened at the pleasure of a general committee. The object of these agricultural banks is to make capital, to be laid out in agricultural schemes and interests easy of attainment. The capital will consist of from 150,000 to 130,000 Lei, which sum will be distributed by the government for each district, according to the wants of that district. The shares will be 100 Lei, each of which will be issued at par. The shares are not issued *au porteur*, but are written to order, and can only be bought by Roumanian agriculturists, or those following a calling allied to agriculture. The shares can only be endorsed after a declaration made by the endorser and the assignee, which must be *vise* by the manager of the bank. The banks will come into operation as soon as the capital is forthcoming, either from the State, the shareholders or the district. Every single share has a vote in the general committee. The operations of the bank are limited, the sole object of their establishment being to benefit the Roumanian farmers.

Tramways for Farm Produce.—The construction of tramways along the highways fo the hauling of grain has been mooted in several counties of this State, especially, perhaps, in Tulare county. No doubt great saving could be accomplished in the cost and time of hauling, even though animals should be used as the motive power. It seems that a more elaborate system of tramways is to be attempted at Wisbech, England, by the Great Eastern Railway Co., to solve the difficulty of getting farm produce to market cheaply and expeditiously. Last session an act was obtained by the company for the construction of a tramway from Wisbech to Upwell, a distance of six miles through a productive agricultural district. The lines are to be laid along the high road, and the construction of two or more bridges across the Wisbech canal will be required. The tramway is about to be commenced, and will cost £25,000. The company appear to be satisfied that it will prove remunerative, as the directors have given notice of their intention to apply to Parliament for powers to extend the line to the agricultural parishes of Elm and Fridaybridge, and to construct another line from the Great Eastern passenger station at Wisbech to the market-place in the center of the town. The line will be worked by steam motors, and will be available for passengers as well as goods.

Salt Storms and Sheep Pastures.—Our readers who may have sheep on pastures adjacent to the coast, may be interested in testimony to the value of salt-bearing winds from the Welsh flock masters. It is true that we do not have such gales as prevail along the coast of Wales, and there is no such carriage of saline vapor across the land, but our summer winds carry a certain amount of salt upon the coast pastures, as is practically demonstrated by the fact that stock thrives without the feeding of salt. In Wales, the beneficial effects of gales on the upland sheep pastures are very great. The sheep farmers call heavy gales from the sea salt storms, because they carry immense quantities of salt to great altitudes. It is said that an ordinary wind will not carry salt more than about 600 ft. high; but that a gale like that of Oct. 14th leaves a thick saline coating on land as high as 2,000. After these heavy storms, salt has been detected 80 miles inland. Flock masters say, that after a salt storm, sheep fatten in a month's less time than during ordinary weather, if the storm is not followed by excessive rains. It is also believed that the salt has the effect of checking "red water" and liver rot, greatly reduces mortality amongst lambs, and makes animals all round more prolific.

The Department of Agriculture.—The present Commissioner of Agriculture is now nearer being a Cabinet officer than any of his predecessors have been, and we trust he may attain the position for which he is well qualified. Dr. Loring has elevated the department not a little since his accession. He has strengthened his force by the engagement of able specialists, and by an active campaign at the fairs last fall, did much to show the people that the department is to be carried on for the general good and advancement of the agricultural interest. It will certainly be a merited acknowledgment of the importance of the agricultural interest to elevate the department from a bureau to a more exalted piece of governmental furniture. It is reported by telegraph from Washington, that the unanimous report of the Agricultural Committee in favor of making the Agricultural Bureau an Executive Department, with its head a Cabinet officer, which was agreed upon Tuesday, is regarded as a strong indication of belief in the success of the measure, which came very near passing last session. The present head of the department has done more to raise it in general estimation than any of his predecessors, and will undoubtedly be made the first Cabinet Minister. The idea of putting the geological and other surveys under it strikes all as a good one.

OAKLAWN FARM, THE PROPERTY OF M. W. DUNHAM, WAYNE, DuPAGE COUNTY, ILLINOIS.

A Fine Horse-Breeding Establishment.

We give on this page an engraving showing the fine breeding farm of M. W. Dunham, of Wayne, Du Page county, Illinois, who is well known to our readers as the leading importer and breeder of Percheron horses in the United States. Upon the left are the stables of which we gave a detailed engraving last year. They have a solid frontage of 600 ft., and are well planned and constructed. In the center of the engraving is the old farmhouse, and upon the right, on the higher ground, is Mr. Dunham's residence. The whole establishment is well kept, the fields smooth as lawns, and the hedgerows neatly trimmed. The engraving shows the place well. It only needs a group of the noble Percherons in the foreground to enable the reader to imagine himself at "Oaklawn."

Personal.—E. W. Peet has just returned from Vermont, his native State, where he spent several weeks visiting the numerous breeders of thoroughbred Spanish Merino sheep. While there he attended the annual meetings of all the breeders' associations, obtaining valuable facts and figures of importance to wool growers in general, which he promises to give us in an extended article upon the subject at an early date. Mr. Peet brought with him a few choice specimens of Vermont breeding. First and last, he has brought from the East into this State 1,700 head of thoroughbred sheep, and for 12 years has been prominent as a breeder, doing much to excite competition and promote the best interests in this branch of industry.

The Grain Call.—The "Grain Call" and several other "calls" seem to be in a fair way to be introduced into the San Francisco manner of trading. The Produce Exchange has finally adopted the "call" system, appointed a "call committee" and chosen the following officers: H. A. Mayhew, President; W. H. Walker, Secretary; A. H. Lissak, Caller; A. J. Gove, Inspector. Probably the call business will begin during the coming week. Meantime the Merchants' Exchange has established a "call" at its headquarters on California St. The first meeting was held on Monday afternoon, and an address was delivered by R. G. Sneath, one of the Trustees, explaining the proposed method of dealing and the arrangements to be made therefor. Afterwards the call was begun by J. O. Eldridge, in his usual Demosthenic style, but his eloquence availed naught. Evidently the idea is too new. The San Francisco dealers have not found their voices yet, but they will doubtless be found possessed of sufficient lung power ere long.

National Forestry Convention.—We have received from that well-known veteran arboriculturist, Dr. Jno. A. Warder, of North Bend, Ohio, an invitation to attend the National Forestry convention to be held in Cincinnati in April next, the precise day yet to be announced. Dr. Warder writes: "We hope to see California represented." We trust some of our readers may be able to attend. Let all interested in forestry remember the convention, and if they have occasion to go East in April next prepare to attend the meeting.

Southern California Citrus Fair.

We print on another page the full official announcement of premiums and rules for the Southern California Citrus Fair to be held in Riverside March 22d to 25th. The new pavilion to which we have alluded in former issues of the Press, will be completed, and will give ample space and excellent facilities for a splendid fruit exhibition. There will also be a good room for discussions in the evenings, and these meetings will serve to round up the work of the days by giving an opportunity for the discussions brought forward by the exhibits. The Riverside people are taking hold of the citrus display business with energy and liberality, and we trust the disposition will be recognized by large and creditable exhibits from all citrus-growing regions.

There should be a better representation of northern California oranges than heretofore. It is true that it is late for the northern fruit, and unless some of it is guarded and preserved for the show, it will have passed from sight. December or January would serve better for a show of northern oranges than the spring, but no doubt good specimens can be secured with an effort in that direction. The Riverside people have done all they can to secure such a show. They have offered a special award for outside districts, and the Riverside Land Co. will pay the cost of carriage to Riverside. Now, let the growers who take pride in their fruit select and pack it well and ship it early, so that it may be put in place before the rush of the local exhibits occurs.

Remembering the cordial reception and delightful entertainment which we received at Riverside last year, the longing is strong to repeat the visit and look upon the progress which another year has recorded, but we shall forbear. We can, however, urge others to turn their faces southward and learn from personal observation the spendid fruit and enlightened and generous people which thrive on the southern soil.

Early Bearing Orange.—An instance of early bearing in a budded orange tree could have been seen last week at the store of Hixson, Justi & Co. on Washington St. A small tree in full fruit had been brought up from the orchard of J. M. Smith, located about two and one-half miles eastward from Orange toward the foothills, near the famous Lotspeich Bros.' orchard. The tree was 30 months old, from the bud, and had been set in the orchard but ten months. It held 29 perfectly matured oranges, large size, and beautifully clean—the tree and fruit being perfectly free from smut or scale. The little tree and its big fruit was greatly admired.

Fruit Inspection.—The Central Pacific R. R. Co. have posted circulars at their depots, in southern California, calling attention of the fruit growers to the quarantine laws, and asking all shippers of citrus and deciduous fruits, and trees, etc., to procure certificates of inspection before shipment, to prevent seizure of shipments at destination.

The Island of Ceylon is suffering greatly from the coffee blight. The crop is worth only £2,500,000, as against an estimated value of £6,000,000 last year.

THE STABLE.

Horse Breeding in California.—No. 4.

[Written for the PRESS by JOSEPH CABEN SIMPSON.]

Roadsters and Fast Trotters.

The next family of importance, in descent from Mambrino, is that which is termed Mambrino Chief. Mambrino Paymaster takes the place of Abdallah, in the relationship to Mambrino, and his dam was by imported Paymaster, thoroughbred. The second from Mambrino was the founder of the family Mambrino Chief, and his dam was a large bay mare of unknown breeding. Unlike Rysdyk's Hambletonian, who passed his entire life from a weanling until his death, in the possession of one man or, rather, Wm. T. Rysdyk and his estate, Mambrino Chief was kept until he was two years old in New York State, where he was bred, and from there went to Kentucky in 1854, where he died in 1862. He was a large horse and rather on the coarse order. While in New York State he did little to distinguish himself, but from the outset in Kentucky he was a successful progenitor of fast trotters, roadsters and carriage horses. In 1856 were foaled Ericsson, the first four-year-old to trot in 2:30¼, and Lady Thorne, who obtained a record of 2:18¼, in 1869. Woodford Mambrino (record 2:21½) was foaled in 1863. Mambrino Pilot (the sire of Hannis, 2:17¾) in 1859, and Mambrino Patchen, in 1862. Those horses were all large and, in fact, I never saw a son of Mambrino Chief which was not above the average size of those which are considered large enough for general purpose uses. Good as the Mambrino Chiefs have been in the first generation, their celebrity has been increased in the second and third, and very many of the noted trotters, and the dams and sires of noted trotters are of that blood. Thus, the dam of Almont was by Mambrino Chief, and so was the dam of Belmont, the sire of Nutwood and Wedgewood, with records of 2:18¾ and 2:19. The dams of Blackwood and Piedmont were also by Mambrino Chief, and illustrations of the value of the mares of the blood could be multiplied until nearly all of the female descendants would be embraced in the list. But it is also worthy of note that in a great majority of instances there was a foundation of thoroughbred blood, in whole or in part, to aid in the production of the desired animals. The influence of the coarse, big mare, the dam of Mambrino Chief, had to be overcome, and when the location of her son was changed to where there was plenty of right material, his individual and valuable characteristics were made available. Thus the dam of Lady Thorne was by Gano, a thoroughbred son of American Eclipse, and her grandam was by a son of the thoroughbred Sir William. A brother of Lady Thorne, Mambrino Patchen, has nine sons and daughters with records ranging from 2:23 to 2:30, which proves that speed was in the family, and not a chance inheritance of the greatest mare of her day. Bourbon Chief, the sire of Calmar, 2:22, was from a mare by Gray Eagle, and with four more crosses of the same kind of blood. Ashland Chief, the sire of Black Cloud, 2:21½, and Ashland Kate, 2:29¾, was from a mare by imported Yorkshire, and her dam was imported Florence, so that she was entirely of English blood. Bob Didlake, from a mare by Bertrand, grandam by Blackburn's Whip, got Dick Taylor, 2:24¼. Ashland was from Ubilla, by imported Margrave, and she belonged to quite a noted family of race-horses. The dam of Idol was by American Eclipse, and so was the dam of Alhambra, the latter being thoroughbred. The dam of Fisk's Mambrino Chief was by Birmingham, 2d dam by Bertrand, 3d dam by Sumpter, and 4th dam by imported Buzzard. This horse has trotted in 2:29½, and is the sire of Mambrino General, 2:25½, and of Woodchuck, 2:30. The dam of Woodford Mambrino was by the thoroughbred horse, Woodford, and he was the sire of the California stallion, Abbotsford, record 2:21½; of Convoy, 2:22½; Magenta, 2:24½; Mambrino Dudley, 2:22; and four others in the 2:30 list. The grandam of Mambrino Pilot was by Webster, thoroughbred son of Medoc, 3d dam by Blackburn's Whip, Mambrunello, the sire of Sadie Howe and Tom Britton, each with records of 2:26, was from a mare by Commodore, son of the thoroughbred Mambrino, and his second dam was by Grey Eagle, 3d dam, Lady Adams, by Whipster, and she was from the dam of Woodpecker, the sire of Grey Eagle. I will not underrate the intelligence of the readers of the PRESS by thinking it necessary to give further illustrations of the value of the blood of the thoroughbred to incorporate with that of Mambrino Chief in roadsters and fast trotters. Enough is offered to convince any person of fair mind and reasonable amount of intelligence; those who are too bigoted to give up erroneous opinions because they have been long entertained, or who are blind disciples of men who disparage the thoroughbred element for a purpose, I despair of moving from the ruts they are determined to follow. The illustrations have also answered the purpose of showing that this family deservedly stands high, and well worthy of being classed in the front rank, and the evidence could be multiplied until not a doubt would remain regarding the propriety of the California breeder using it. There are other reasons besides the fast-trotting action which will be given, though before touching on the size, form, etc., it may be as well to give an example of the mingling of the two families descending from Mambrino, and also the value of the reinforcement of "blood." In the list of the sons of Hambletonian in the last paper, only a few names were given, and among the many omitted was that of Edward Everett. It was not from a want of appreciation of his merit, as only one stands higher, and that one has had superior advantages. He was the sire of nine with records ranging from 2:18 to 2:27¼ and six of them better than 2:25. His pedigree, after the manner of the thoroughbred stud book will stand thus:

Edward Everett, formerly Major Winfield, b. h., foaled 1855, bred by Adam Silburn, Haverstraw, Orange Co., N. Y. By Rysdyk's Hambletonian.
1st dam, Fanny, by imported Margrave.
2d dam, by Trumpator.
3d dam, by Lindsey's Arabian.
4th dam, by Vampire.
5th dam, Kitty Fisher, by Cade.

His sons stand, Judge Fullerton, 2:18; Sheridan, 2:20¼; Mountain Boy, 2:20¾; Hambrino, 2:21¼; Tanner Boy, 2:22½; Major Lord, 2:23¾; Everett Ray, 2:25; Big Fellow, 2:26, and Clark S. 2:27¼. The only entire son is Hambrino, and I will give his pedigree in the same form:

Hambrino, b. h., foaled 1869, bred by L. Curtis, Brooklyn, N. Y. By Edward Everett.
1st dam, Mambrina, by Mambrino Chief.
2d dam, Susie, by imported Margrave.
3d dam, Barbara Allen, by Collier.
4th dam, Lady Jackson, by Sumpter.
5th dam, Nancy Taylor, by imported Spread Eagle.
6th dam, by McKinney's Roan.
7th dam, by Rainbow.

Thus, in the sire, there are five "crosses" of thoroughbred; in the son six, and with two near strains of Margrave, a winner of the English St. Leger, in 1832. It is not likely that any one who witnessed the great race at Doncaster nearly half a century ago, ever thought of his blood mingling with that of trotting horses which could accomplish a mile at almost a racing pace, and that the very fastest should descend in a direct maternal line from the winner of the first Derby would have been thought still more preposterous. Here it is, however, and the "potency" cannot be disputed. But to carry it further, and to prove that more of the Mambrino Chief and more of the thoroughbred did not work injury, the daughter of Hambrino, Hambrino Belle, will be an illustration. She is a br. m., foaled 1874; bred by T. J. Megibbero, Harrison county, Ky., and her dam was Sally Neale, by Mambrino Chief; her 2d dam was by Terror, a son of American Eclipse, and Lady Lightfoot by Sir Archy. 3d dam by Doublehead, a son of Turpin's Eclipse by Diomed, 4th dam by American Eclipse. When six years old, Hambrino Belle trotted at Cynthiana, Ky., in 2:25½. Had the inbreeding into Hambrino Chief been without the thoroughbred blood, in all probability there would have been comparative failure. There are two strains of Mambrino Chief in Santa Claus, not so near as those in Hambrino and daughter, and with a good deal of thoroughbred blood behind them.

The Mambrino Chiefs are large horses. The size of the founder was urged as an objection when he first went to Kentucky, and it took some time to overcome the prejudice on that score. But when his colts came on the track, and Ericsson, Kentucky Chief, Lady Thorne and others, showed that large size did not prevent them from trotting fast, and that they were likely to be fine "coachers," their claims were recognized. It is needless to repeat the arguments in favor of size, as it is doubtful if there is a single breeder in California who does not realize the value of it in the market. From an Eastern paper I cut the following description of three sons of one mare; two of them have the Mambrino Chief cross, the other two the Hambletonion:

Westwood, by Blackwood, record 2:31 at three years old; 1st dam, Favorite, record 2:34 at 5 years old, by Alexander's Abdallah. Second dam, Betty Peebles, by Wagner, the celebrated four-miler. Blackwood, by Alexander's Norman. First dam by Mambrino Chief; 2d dam, a mare from Ohio. Westwood is a dark mahogany bay, star and white hind ankles, full 16 hands high, rangy, stylish, heavy bone, square-built, and can show a 2:25 gait.

Great Western, by Mambrino Patchen, full brother to Lady Thorne. Great Western is a bright bay, 17 hands high; a substantial, finely-formed colt, bone and substance in proportion to his hight; splendid trotting action; can show better than a '40 gait, and is the finest coach and carriage horse in Kentucky.

Bourbon Wilkes, by George Wilkes. George Wilkes, record 2:22, by Rysdyk's Hambletonian. First dam, Dolly Spanker, by Henry Clay. Second dam, old Telegraph, by Baker's Highlander. Third dam, the Clark Phillip's mare. Bourbon Wilkes is a bay with white hind ankles; was foaled in 1875, and stands 16 hands high.

It will not require much astuteness to discover that this trio of half brothers have a value outside of trotting speed, and that either of them would be worth a good deal of money as "general-purpose" horses.

The direct blood of Mambrino Chief, that of sons or of daughters, has been scarcer in California than that of the other families of trotting distinction. In 1866 was advertised Marmion, to stand at Petaluma and Bloomfield, and his owner, Wm. Gouverneur Morris, thus describes him. Marmion is a beautiful dark chestnut, without white, 16 hands high, and weighs 1,200 lbs.; of symmetrical form, large bone, and of remarkable speed for an untrained horse, and can easily trot a mile within three minutes. Marmion was got by Mambrino Chief, of Kentucky, out of the thoroughbred mare Rosalind, by imported Leviathan. If he received any patronage there should be mares of his get well worth looking after. Kentucky Chief, thought to be fully as good as Ericsson, and of the same age, was imported to this State, but died soon after his arrival. There are several grandsons of Mambrino Chief, viz., Abbotsford and Inca, by Woodford Mambrino. Carr's Mambrino and two others of the get of Mambrino Patchen, and probably others of the family which I have not heard of.

THE FIELD.

Bluestoning Once More.

EDITORS PRESS:—My letter published in the RURAL PRESS of Sept. 24th, has brought forth quite a number of papers on bluestoning, and it has met, as I expected, a general opposition, although there appeared really no evidence against it.

How could it have been otherwise? The old has something sacred about itself which nobody can touch without being hurt, and it is good that it is so, because without this conservatism, which dwells in the human soul, we would have a continuance of revolutions, human society would be endangered, errors would culminate and progress be perhaps retarded. So the slow manner of progress may after all be the best, although our grandchildren will look with wonder at our tenacity.

All the discussion which has appeared since in the RURAL PRESS, interesting as it is, cannot strengthen my faith in bluestoning. Some of the letters seem even to prove the contrary of what the writer desired to show in this respect. I, for my part, must confess that it could not overthrow the conviction to which I have come, as I stated before in a purely theoretical way. I believe to have proven in my letter that there does not exist such a connection of cause and effect between the fungus at the seed grain and the smut at the ripening plant. How is it that nobody entered in the spirit of my paper and tried to prove that I am wrong, that there is an error in some of the links of my argument?

Let us now

Examine the Evidence,

As brought forth by the discussion, a little closer. In the RURAL PRESS, which so liberally opens its columns to all, we find in the number of the 26th of November, a letter from Mr. G. Brook, of Stanislaus county, in which he states that a good many of his neighbors gave up bluestoning as useless, having had more or less smut every year, nowithstanding its use. He states further, that last year his bluestoning failed, but that he attributes it to some irregularity in the application, and that he is not willing to concede that there is no virtue in it. This personal opinion we respect; but what kind of evidence gives it in favor of bluestoning? The fact is, that his bluestoning failed, and that the experience of many of his neighbors induced them to give up bluestoning entirely.

J. C. B. tells us in RURAL of the 17th of December, that he knew a good farmer who never had any smut, and never bluestoned. He had employed common salt and lime (chloride of sodium and protoxide of calcium) in solution.

The reaction liberates chlorine, which, for its powerful attraction of hydrogen, is a powerful disinfectant and bleacher, and certainly may destroy the fungus at the seed as well as the bluestone. This has so far a bearing on our question as it is another material destroying the fungus of the seed, but it does not imply that it will prevent smut. J. C. B. further states that he knows a man who had about 15 acres of summer-fallowed land, the seed of which was all out of the same granary; the bluestoning and all other work was done by the same man in the same manner, and one-half of the grain was half smut while the other half had not a grain of it. He wishes a scientific man to tell why this was so. Nobody, I think, would be able to answer this question without knowing all the particulars of soil and all the other influences which were active at that very spot; but common sense may so far take the place of science as to disclose to us that bluestone is not a reliable preventive against smut, and it teaches us indirectly that the cause of smut is not to be looked for in the fungus of the seed, but at the external circumstances of soil and atmosphere—a suggestion which I made in my letter of the 24th of September.

In RURAL PRESS of the 7th of January, J. B. B., of Stanislaus county, tells us, that on a 23-acre field, well bluestoned, sown and plowed in good weather, there was no smut, while in a small corner of the same field, which was sown during rain, there was fullly two-thirds smut. This passage again proves nothing in favor of bluestoning, but it is a further confirmation of the truth of my assertion. This case shows conclusively, that it is an error to consider the fungus of the seed as the cause of smut, and that the destroying of the same by bluestone is no preventive against it. J. B. B. continues in his letter, that a neighbor of his did not want to buy bluestone, as being too expensive, and that the result was nine-tenths smut. Whether in this instance exists a connection of cause and effect, is unknown. It proves not anything, pro or contra. Nobody will doubt that a field which has not been bluestoned may have smut, but it might just as well have had smut if bluestoned, as we have seen through the letter of J. C. B., which I have quoted. J. B. B. says, that since that time (1857), he had never seen smutty wheat if the seed had been properly bluestoned, and the ground was dry when sown; but that he always had smut if the grain was sown too wet.

"J. T." pronounces the same opinion in the RURAL of the 21st Jan. This again seems to show that bluestone is not a real preventive of smut, and that the latter originates independently of the fungus at the seed. I cannot see why bluestone should prevent smut if the seed were sown in dry weather, and that it should do no good if sown during rain. All that can be claimed for it is that it destroys the fungus of the seed. Here the bluestone was applied, the fungus destroyed, and yet there is smut. Does this not clearly show that the smut has not been propagated from the seed fungus? And if this is so, for what reason do we bluestone?

Finally, we have a letter of Mr. A. J. Scoggins, of Tulare county. It gives us no experience strictly concerning bluestoning, but he enumerates four causes of smut—broken wheat, bugs, hot, sultry sun, and working land too wet. Of these causes, he considers the broken wheat the main one. Although I have respect for anybody's research after truth, and particularly for Mr. Scoggins' endeavors to solve our problem, and fully agree with him what concerns the two last causes, as being probable; I disagree with him in the first two ones. I cannot conceive how partly divided or cracked wheat can be the cause of a particular disease—of the smut fungus. If the germ of the seed had been perfectly destroyed, their can be no smut; the seed will perish, and that is all. On the other hand, if the germ remained intact and only a part of the seed adhered to it, it will germinate, but may lack sufficient nutriment, and may eventually be more easily affected by any influence. The plant may have less vitality, but it takes some other specific cause to create the fungus. The theory that bugs are the cause of smut seems not sufficiently supported by facts, and the few observations which this gentleman has made, may be a deception after all, or a coincidence. His observations are in so far right. That there is a bug which takes its nourishment out of the grain and destroys it, wholly or partly. In such a state the grain may be particularly susceptible to be affected by any cause, but it takes also, in this case, some other agent to produce the vegetable parasite. One thing though may be possible, that the bug be the carrier of the germs out of which the parasite develops, in the same manner as the fly contributes to promote the contagion of scarlatina and small-pox for instance, and brings to man the malignant pustule, as the result of infection from animals dying of murrain. Besides, if a field was, for instance, almost totally destroyed by smut, what a vast number of these bugs would be required to achieve it! It seems impossible that they should have escaped observation in such instances till at present.

There appeared yet another letter treating of bluestoning wheat in the RURAL PRESS of the 15th of October. I am sorry not to have it at hand.

Conclusions.

If we now look coolly over the experience which the discussion has brought forth so far, we are obliged to admit that it gives not only not the slightest evidence in favor of bluestoning, but that it may easily be construed in favor of the other side. Personal observations, single or few in number, can at best prove only very little in this matter, and less so if the same are communicated without all the concomitants which govern each case. Real experiments are wanted, or a great number of such observations, to have a more reliable basis from which to draw out conclusions.

I venture to suggest, therefore, that blanks be sent from some headquarters to a good number of farmers, with the request to return the same filled out. The expense of bluestoning and labor involved may be worth such a proceeding. The questions to be answered might be similar to the following:

Number of acres sown.
Bluestoned or not.
Was there smut, and how much?
What kind of wheat had been sown.
How many years in continuance had the same kind of crop been raised on the same field.
Character of soil, whether well drained or not; amount of rain, whether rapid successions of north wind and hot sunshine after rain has been noticed.
Other meteorological observations and general remarks.

In this manner, we would not only get a large number of observations with bluestone, out of which a pretty safe resume could be drawn, but we might also come nearer to the real cause of smut, of which we know less than nothing.

This letter has become longer than I intended it. May it be permitted to add though, that I, as far as my experience goes, participate in the opinion of the neighbors of M. G. Brook, who believe, as this gentleman told us, that bluestone is useless to prevent smut. Verily, there are indications that the empire of King Bluestone commences to shake in its foundations, and that it will vanish by-and-by like all the glory of this world. R. SCHULZ, M. D.

Pinckney, Shasta County.

[We should be glad to have all our grain-growing readers send information on the points

mentioned by our correspondent, or to take part in the discussion, as their experience and observation warrants.—EDS. PRESS.]

Smut and Bluestone.

EDITORS PRESS:—Mr. J. B. B. wishes some scientific man to answer J. C. B. on smut. I will give my opinion, as I don't understand the cause of smut any better than any man who has been farming for any length of time. I have been farming for 30 years. I have had the drawbacks of smut, chinch bugs, grasshoppers, dry weather and wet weather. I farmed east of the Rocky mountains in three different States, and since 1875 in California. I have raised wheat on a small scale, and thrashed with cattle treading on it till it was thoroughly thrashed, then cleaning it with the wind, sowed it, and raised a good crop of smut, too. That was before there was a thrashing machine in the State. I have sown wheat that was about one-tenth smut, and raised as fine wheat as I ever saw—not a kernel of smut in it. I have my second sack of wheat to bluestone. I never raise any more smut than my neighbors.

If any of the PRESS readers want to know the benefit of bluestoning, let them soak one sack of wheat in clear water, one in lime water, one in bluestone, all the same length of time; sow all the same day, in the same kind of land. That may save them a few dollars each year.

I consider bluestone rank poison to land and grain, and no protection against smut whatever. If they will use lime to soak their wheat in, they will do well, as lime is a nutriment to both land and grain.

The idea of putting something on seed buried in the ground to protect a plant when it is from two to four feet in the air! The time that wheat smuts is when it is between water and milk. Proof of this is that the kernel is larger then than any other time, and no man ever saw smut shrunken.

To protect wheat from smut, protect it at the time above stated from the blasts and winds, and you will never have any smut. They have a wheat east of the Rocky mountains which has never smutted, and the reason is, it has a very heavy chaff that protects it; but it is not a good kind for California. It is too red in color.

I will give another little experiment on smut in 1880. I am living in an irrigating district where we flood the land from ½ to 24 inches. In 1880 I flooded twice. The first time I failed to get between one-fourth and one-half of an acre wet. The second time I wet it the grain was about four inches high, while all around it was 20 or 24 inches. At harvest it looked fine, and not a kernel of good wheat to be found in it, and not a kernel of smut in the balance of the field. F. A. B.

Central Point, Merced Co.

A Treatment for Smut.

EDITORS PRESS:—"Is there not some remedy for smut in wheat cheaper than bluestone?" was asked in the PRESS not long since. Soak your wheat for 12 or more hours, drain off the water, and then dry the wheat by mixing it thoroughly with dry-slaked lime. I have seen this method practiced for many years in the great wheat regions of western New York, and I think, too, always with success. Besides, lime is a very fine fertilizer for wheat.—S. T. WELLS, Saticoy, Cal.

THE PUBLIC LANDS.

Brush-Fence Land Titles.

EDITORS PRESS:—From the PRESS of the 3d inst., I learn that a California association to encourage immigration has been incorporated, its purpose being "to obtain and disseminate such information as can be obtained from reliable sources, in reference to land which may be purchased, and any and all practical information which may be beneficial to immigrants seeking homes here."

A resident in this rural district of the State soon makes acquaintance with a a class of California land tenures, of sufficient importance to immigrants and residents desirous of making homes on the public lands, to call for a ventilation which has never been given by the press of the State, nor by any publications coming under my observation, designed to influence permanent settlement of the State. Half a truth is as bad, often worse than a lie, when the truth untold is barbed with disaster to those who act upon that part of the truth which is revealed.

Two opposite assertions are often heard from California residents. One is, that all the available or desirable Government land is already "taken up;" the other, that there is still room for thousands of homes under the U. S. homestead and pre-emption provisions. Both of these statements are, to a certain extent, and in a specified sense, true. *How* they are so, let me explain. As my sole object is to prevent loss and disappointment to worthy seekers of homes and to reach the intelligent thought of classes devoted to the best interests of the State, social and financial, I may reasonably be held guiltless of any covert design, or willingness even, to step on tender toes.

First in order is the fact that there are tracts—amounting in the aggregate to a large proportion—of Government land withdrawn practically, under California law, from the reach of persons seeking to pre-empt or homestead under U. S. laws. The immigrant or resident eligible to pre-empt or homestead 160 acres of U. S. land finds plenty of unentered land, perhaps, for his purpose, but already occupied or encroached upon by squatters or stockmen. And if he attempts to enter such land by complying with the United States land laws, he is ousted by the California Courts under a State law that taxes the squatter and protects him in possession. The squatter has only to enclose Government land and pay the State tax and he is practically lord of the soil—transferring his brush fence title ("possessory right," in California legal phrase) after a shorter or longer occupancy, and often for a valuable consideration, to move on for another swoop of the public domain under the flexible State law, or possibly under the United States law, his homestead and pre-emption rights being unaffected by his brush fence "possessory rights."

The State offers this advantage over the United States land provisions—it sets no stakes. The brush fence holding may comprise one or several, a larger or smaller detached inclosure; or adjoining a 160-acre homestead, and many times its value—it may be found advertised with it for sale, as a distinct but veritable possession of the advertiser. Eight hundred to twelve hundred-acre inclosures are common in the foothills. Here is one advertised in Humboldt county:

> Sheep range for sale, comprising 8,000 acres; titled land, 2,480 acres; price from $4 to $6 per acre, etc.

Five thousand five hundred and twenty acres of this sheep range, is this "possessory rights" or untitled brush fence land. A second and no small advantage of this State possessory right is, that with only a nominal annual tax, the profits from flocks and herds is secured with no outlay of capital (which may not be at the command of the squatter) for ownership of the land; and third, not having trenched upon his homestead and pre-emption rights, he is "footloose" to secure a permanence to suit him better inside United States land provisions, or to invest his net gains from the free hill lands in town or other business locations. The disadvantage to the State of this land arrangement cannot be doubted in the present. In the early day, when the agriculture of the State was a doubtful experiment, it undoubtedly aided settlement. But the impression at the present day—at home and abroad—that available public lands are, with here and there an exception, taken up by actual settlers, proves its impolicy, shows that the thrifty homes of small farmers, so essential to the social and financial prosperity of the State, are being sacrificed to a nomadic occupancy at variance with the social fixtures of cultured peoples. The value of the tax returns of this class to the State Treasury is trifling compared with the wealth of permanent improvements. A more serious outcome of this illegal (as regards the national Government) State policy is the ill-will and often murderous conflicts between neighbors, who otherwise would be helpful friends and peaceable citizens. I have seen within the year newspaper reports of decisions in two cases in the State courts, giving the squatter (unentered) claim precedence of right versus the claimant under national land provisions—the latter being prevented from entering and improving public land held in use under the California law. To claim that the State law is limited to protection of squatter improvements is nonsense in face of decisions that estop entries of the land under U. S. laws. And unless the U. S. law declaring the public lands not taxable by the States in which they are located can be construed into a simple exemption of the National Government against State taxation, the taxing of these squatters on the public domain is unlawful; and it is understood to be so by the tax-payers themselves, who, to secure the protection it guarantees, pay the tax. Feeling assured that a general understanding of the facts stated will aid a rational effort for the increase of happy homes among us, I submit the above statement.

Since writing the above, the Ukiah *Press* reports the decision of Judge McGarvey, of the Superior Court, in the case of Standley vs. Stevens, in which the plaintiff sued to recover possession of 160 acres, included in a tract of several hundred acres that had been inclosed and in his possession for many years. Standley had leased the holding, and while so leased, the defendant had entered the 160 acres under the homestead law. The court decided the case on the question of inclosure—holding that a barrier sufficient to turn stock of all kinds assures the possessory right of the squatter against settlement under U. S. laws. I quote the language of the Judge: "It is claimed by plaintiff that the river forms his eastern boundary. At the time defendant entered, the river was bank full of water, and was a sufficient barrier to prevent stock of any kind from passing and repassing; and if the river had remained so, I should not hesitate about ordering judgment for the plaintiff. But the evidence shows that during the summer and fall months there is little water in the river and no obstruction whatever to stock of all kinds passing at pleasure. I am of the opinion that *when the possession depends upon an enclosure,* and a natural barrier is relied upon, that such barrier must be of a permanent and lasting nature, and that the river was not such an obstruction as the law contemplated. *Judgment ordered for the defendant.*" C. I. H. NICHOLS.

Pomo P. O., Mendocino Co.

POULTRY YARD.

Poultry Notes.

We take the following practical paragraphs from Wm. Niles' "Pacific Coast Poultry Book," a valuable publication, as we have remarked before:

Egg-Shell Food.

The supply of ground bone, oyster shells or something of the sort, is a necessity which has become too well known to need comment, but the *judicious* feeding of these things has not been treated as of much importance. The fact that broken bone of the first quality can be bought for four cents a pound, has caused its careless handling. What costs little is seldom highly valued, and many a man, when he throws down a handful of bone does not pause to think that he is, not only wasting—which is a small matter in itself—but is not giving this "shell food" in the best manner. Do you say "what shall we do then?" Make a box covered at top and bottom, and having sides of lath, about 2½ inches apart and you have a convenient receptacle for your bones, lime, old mortar or shells. The material in the box will be always at hand, fresh and uncontaminated by droppings, which as the box is covered, can never reach its contents, and you will not only secure economy in feeding, but almost absolute certainty in the production of properly shelled eggs. A slide may be placed in the top of the box for convenience in filling, or a small trough fitted between the bars, into which the bag can be emptied and the food will run to the center of the box and spread to the edges so as to be easily accessible from the sides.

Water for Fowls.

It is very necessary that fowls should have a good supply of pure, fresh water each day, and it should be put in the shade, so that the direct rays of the sun will not make it hot and impure before the fresh is supplied. One of the best things, and probably one of the simplest, is to keep a handful of old rusty nails—the more rust on them the better—in each dish from which the fowls drink. This will go far toward keeping them in good health, making them strong and vigorous and less liable to disease. Fowls seem to require, especially in this climate, something that will act as a bracing tonic, thus toning up the system, so that they will be in a better condition to throw off disease. Their increased vigor can readily be detected by their vivacity and the rich color of the comb, which is a sure indication of health. The comb of a diseased fowl always loses color in proportion as the disease approaches its worst stages, and in some instances turning black. We would advise those who suspect disease amongst their fowls to give this subject thoughtful consideration and study, remembering that prevention is always better than cure.

Dust Bath.

By instinct all birds are taught the need of a dust or water-bath for their well being. They choose a sheltered and sunny spot of fine dry soil in which they open their feathers and fill them with dust, which applied often enough, and in sufficient quantities, is death to all parasites which infest the plumage or skin.

As the domestic fowl is not a native of a cold climate, it becomes necessary for us to supply the deficiency which exists during our winter season. This is readily accomplished by the dust-box, which everyone who has fowls should provide. Fine road dust, coal ashes, sand, pulverized loam, or clay, even, are all very good, and with a sprinkling of flour of sulphur, or a small quantity of diluted carbolic acid sprinkled over the dust, constitute as good a bath as can be desired. This should be placed in a sunny exposure of the room, and kept dry and clean, so that the fowls may enjoy its benefits when they choose.

Dust Box.

Take any ordinary soap box or make a box any desired size from 8 to 12 inches high, tack four strips, one on each corner, have them extend above the box about three inches, and around these strips or posts, run a piece of wire near the top. The fowls will jump into the box whenever they want to take a dust bath, and when through dusting themselves will jump out again, without stopping to perch on the sides of the box, and as a result the sand is kept free from droppings and remains clean.

Making Hens Lay.

The production of eggs is one of the most profitable branches of the poultry business. Properly managed, hens pay from 100% to 300% profit as layers. To get the best results, too many should not be kept together. Of large breeds, 20 to 30 hens are sufficient. Of smaller breeds, not more than 30 to 50. They lay as well without a cock, and their eggs keep longer. Plenty of room should be given. Their droppings should be cleaned up at least three times a week. A box of dry dirt and ashes is essential for dusting in. Provide suitable nests and nest-eggs. Give plenty of clean, pure water; keep quarters clean, well ventilated, dry and comfortable. If hens have free range, they obtain from animal or insect and vegetable life most of the materials which compose the substance of an egg. If we imitate natural conditions as nearly as possible, our hens will lay in any season of the year. We must supply artificially the want which nature supplies. A hen is a machine for converting a compound of raw material into one of the most nutritious and highly organized substances—the egg; but the *machine* will not work unless it is in *perfect* order. Before laying, the hen must be in good health, condition and feather, and must be kept so; for laying is a severe and exhaustive strain upon the system. For getting and keeping in good condition for producing eggs, long study and experiment resulted in the production of the "Imperial egg food," which thorough test will prove unequaled as an egg stimulator. The feed for laying fowls should consist of grain in variety, wheat and buckwheat being best, and not over one-half corn in winter and one-fourth in summer, cooked feed daily served in various ways, also milk, fresh meat and scraps, raw and cooked, chopped fine, with broken fresh, raw bones, or ground bone, three times a week at least, with plenty of gravel and broken oyster or other shells constantly accessible.

Cooked vegetables are necessary, but when confined, raw onions, turnips, apples and cabbage should be given three or four times a week, in good supply. The first feed each day should be mash, and the last grain; excepting to Asiatics, give *all* they will eat, but *no more.* Watch, study and supply their tastes, wants and comforts. Care well for and feed your hens properly, they will not disappoint you, unless it be in "*shelling out*" large returns and making a handsome "balance sheet" on the profit side.

Cooked Feed.

We think fowls cost less, and return more, if fed warm, cooked food once a day, early in the morning. A mixture of corn, oats and bran, and middlings, ground fine is good, or the corn may be boiled unground. It is well to add a portion of boiled potatoes, apples or turnips, and vary the mixture occasionally, for a change. The feed should be well cooked, and not made thin. In breeding season, fine bran and barley, with vegetables, make a food sufficiently rich for Asiatics, which are disposed to get so fat as to prevent laying, increase broodiness, and render eggs infertile. In fact, they should be fed very sparingly, and kept "hungry and lively."

I prefer whole grain in variety for evening feeding. In cooking daily, there is quite a saving, as much stuff and scraps can be converted into food that would go to waste. There is hardly anything but what fowls will eat if properly prepared.

Change the Diet.

Poultry like a change of diet almost, if not quite, as well as man, and they will thrive much better if particular attention be paid to the fowls in this respect. In winter this is not so important, but in summer it is very desirable to change the food repeatedly, so they will not tire alike of food and laying. Corn is a most excellent food in its way, and there is no grain which is more valuable for fattening any kind of stock, but for any other purposes it is not so good, though it comes in very nicely, as an occasional food, to relieve the monotony of other food. The best summer feed for fowls and well-grown chicks is wheat and wheat screenings, followed by oats, buckwheat, rye, rice, etc., while for very young chicks cheese (made by the draining the whey from sour, thick milk), with occasional feeds of cracked wheat and corn meal mush are just the things to feed young and tender birds. Green food comes in for a share in the routine, and should be fed regularly and liberally to birds in confinement. Those which have their liberty can get what they wish of grass and alfalfa. An occasional mess of scalded corn meal, in which there is a generous sprinkling of Cayenne pepper, is alike good for fowls and maturing chicks, for the pepper seems to keep them healthy all over, and strong and vigorous to an eminent degree. We would not advise it being fed to very young chicks, unless in a very small quantity, for it is too severe for their tender systems.

The Pest of the Poultry Raiser.

The pest of the poultry raiser in California is the lice or mites that infest the fowl kingdom. In our State there are four different varieties of the louse inflicting our fowls, and they are the most prolific causes of disease. In fact, there would be but little difficulty in raising chicks during our dry season if they were kept free from lice. Hence it will be seen that it is of great importance to poultry raisers that their young fowls should be kept free from lice, and therefore too much care cannot be taken to free the mother from these pests before the brood is hatched; otherwise they will be communicated to the young. We find in the *Scientific American* the following, which we give for the benefit of our readers:

"Put a tablespoonful of sulphur in the nest as soon as the hens or turkeys are set. The heat of the fowls causes the fumes of the sulphur to penetrate every part of their bodies; every louse is killed, and as all nits are hatched within ten days, when the mother leaves the nest with her brood she is perfectly free from nits or lice."

In some sections and upon certain soils in California, there is a mite or louse that appears to enjoy a sulphur bath. Where they are present, carbolic powder will put an end to their existence. When lice are very bad, it is best, before setting a hen, to see that the box to be used has been thoroughly washed inside with kerosene oil. We use the crude article, which can be procured in Los Angeles for 15 cents a gallon. Then place in the material to be used for a nest, after which sprinkle the hen and nest thoroughly with carbolic powder, and by changing once or twice the straw used for the nest you will have but little trouble with lice while the hen is sitting.

PATRONS OF HUSBANDRY.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

Grain Warehouses.

EDITORS PRESS:—How largely does science and art owe their advancement to the experiences and discoveries of the past and present! The thoughtful feel this and further acknowledge daily to themselves the aid they receive from the advice based on the every-day researches of their fellow men. Life is short; our vocations necessarily, therefore, keep us within limits, and we cannot expect individual experience to be untrammeled, but find it rather to be bounded altogether by the surroundings of our calling in life. We are thus placed by nature ever dependent on one another.

For these reasons, I consider the correspondence columns of the RURAL the most valuable part of that valuable periodical, and looking to the healthy tone in which discussions are carried on in it, I now open a subject on which is solicited the experience and advice of our warehouse men. Next in importance to the culture and production of a crop is the care and advantageous disposal of it. We have found a farmer's warehouse, such as ours, to have met this need.

In the first place, I will explain our position, and then suggest where advice and information will be thankfully received. I am glad to say that in Kingsburg there still exists the enterprising spirit which animated a few to prove to the many that the waters of King's river could be diverted from the natural channel and utilized to redeem a barren soil. And what places the identification of the same spirit beyond a doubt, is the fact that the President of the Kingsburg Warehouse Co. was and is one of our most zealous pioneer "ditchmen." The company now introduced to you as the offspring of Granger enterprise, is a corporation formed for the care and disposal of at present the most valuable product of our acres. In this way, also, diverting the legitimate earnings of a warehouse back into the pockets of the farmers. Inexperienced to some extent, in the furtherance of these commendable objects, the management has at no time been too proud to ask and profit by advice.

Your readers will please bear with me for a slight divergence. I do not, however, think it quite out of place to acknowledge in this connection, the hearty aid the Kingsburg Warehouse Co. has always received from the Grangers' Bank of California and the Grangers' Business Association. The advices of the latter in regard to the prices of grain and the sales of wheat effected through their agency, have, during last summer, placed many farmers beyond the reach of the unscrupulous local wheat buyer, and within the reach of realizing the full market value of his produce.

In returning to the subject of this letter, I would ask some of your readers to inform us what has been the cost, under experienced management, of receiving and piling sacked grain in warehouses; also, what has been paid for removing the sacks from the pile and loading on cars. A brief statement of expenditure and income, such as we sometimes see in the RURAL, showing the cost of management, etc., would be valued. This is at present sufficient to suggest any other points of interest, all of which will be beneficial not only to Kingsburg, but to all similarly, or about to be similarly situated in the "warehouse business."

A fine rain last night. Farmers are generally more hopeful of a favorable spring. E. K.

Kingsburg, Fresno County.

[We should like to have a full discussion of the practical operations of grain warehousing in the interior. The last two or three years of experience must have taught our farmer warehouse men many valuable lessons, and given them much insight into the economies of grain handling. Let them give a little time now to the discussion of the points asked for by our Kingsburg correspondent, and suggest other matters which it will be well to discuss. In this way all can perhaps begin more intelligently another season's work.—EDS. PRESS.]

Grange Elections.

HEALDSBURG GRANGE, Sonoma County.—Wm. F. Allen, M.; R. E. Lewis, O.; C. A. Morrill, L.; A. J. Bouton, S.; Chas. Alexander, A. S.; T. Barnes, T.; C. P. Moore, Sec'y; A. L. Warner, C.; Jas. McClish, G. K.; Sister Price, Ceres; Sister Allen, Pomona; Sister Moore, Flora; Sister Alexander, L. A. S.; Trustee, Bro. J. G. Heald; P. M. Wm. N. Gladden, Organist.

GRASS VALLEY GRANGE, Nevada County.—J. W. De Golia, M.; H. G. Leeman, O.; John Stuart, L.; Charles Mill, S.; A. G. Peterson, A. S.; Mrs. E. L. Lewis, C.; Albert Matteson, T.; Alexander Henderson, Sec'y; Robert Berryman, G. K.; Mrs. G. Rowe, Ceres; Mrs. L. Matteson, Pomona; Mrs. Perkins, Flora; Miss Mary Totten, L. A. S.

Uncle Sam's Seeds.

Through the kindness of Congressman Gen. W. S. Rosecrans and Hon. Geo. B. Loring, U. S. Commissioner of Agriculture, we have received for free distribution a quantity of the following named seeds:

No. 1. Montgomery Corn.
No. 2. Queen of the Prairie Corn.
No. 3. Silver Hull Buckwheat.
No. 4. Zelner's Cotton.
No. 5. Webb's Champion Prolific Cotton.
No. 6. Woodfin's Imperial Herling Cotton.
No. 7. Jones' Imperial Cotton

So long as the lot will hold out we will mail free sample packages of the above to any reader who will send us sufficient postage stamps to prepay the postage. Each package contains one quart of seed. For each package of corn and buckwheat send 26 cents in stamps, and for each package of cotton send 15 cents.

In ordinary use simply the No. according to the above list rather than the name. State the amount you would like to receive of each. (Do not say "send me a lot," or "such as you think I would like," etc.) We will then send whatever there may be on hand, or as near as practicable the amount and kinds asked for.

The Government expects in return for these seeds, careful cultivation and an intelligent report of the success met with in their cultivation in different soils and localities. All we ask is to be credited for trying to do the best we can as circulating mediums, and no fault found for anything in connection with the affair for which we may not be to blame.

Temescal Grange.

Saturday evening, Feb. 4th, it was voted that regular meetings shall be held hereafter at one o'clock P. M., on the third Saturday, and at half past seven in the evening on the first Saturday of each month—the first afternoon meeting under this new arrangement occurring (today) Feb. 18th. O. C. Logan, a resident of Fruitvale, received the third and fourth degree at the last meeting. Bro. J. V. Webster introduced important resolutions concerning the qualifications of candidates for railroad commissioners and other State offices, which were referred to a committee consisting of himself, E. Wolleb and Sister N. G. Babcock. The citizens' committee of Oakland for the encouragement of home manufactures having by vote requested the City Council to exclude all domestic produce when offered for sale in Oakland by producers in Alameda county from license tax, A. T. Dewey was appointed to report resolutions at a subsequent meeting supporting the action of the citizens' committee. Edward Wolleb was requested to prepare and read an original essay at the next meeting.

AGRICULTURAL NOTES.

CALIFORNIA.

COLUSA.

GOPHERS.—*Sun*, Feb. 11: All over the valley, and even over in the foothills, the gophers are at work more than ever before known. Why is it? Have we had an immigration, or are they at work because of some climatic conditions? Does it presage wet or dry weather? We believe that climatic conditions often control the instincts of animals. The earth thrown out is generally wet. From what depth does it come? While on the gopher question, we would like to ask if any one knows what a gopher does with the earth when he makes an excavation? We have often seen a burrow from which at least a cubic foot of earth had been removed, and no visible sign on the top of the ground, or at most, only a few handfuls. What becomes of it?

HOW THE DUCKS WORK.—There is a large field of grain near the town of Williams which is kept fed off completely to the ground by ducks, and no one ever saw a duck upon it. They come of dark nights. Great numbers of them come about 11 o'clock and go way about 4 o'clock in the morning, feeding some four or five hours. They can be heard all over the field, but they seem to have guards out, as no one can get close to them. There are other fields in the county served in the same way. They have particular spots to go, and will skip over green and luxuriant fields to go to the same comparatively barren one. Then, no man knoweth where they go in the day time. We should think they might be trapped.

CONTRA COSTA.

OUR DRY SEASON.—Martinez *Gazette*, Feb. 11: So far, we have had an unusually light rainfall up to this period of the winter, but it has been sufficient in this section for all plowing and seeding purposes; and it has been seldom that any previous season has shown so large an area of well-seeded ground as we now have in, at an equally early date, or with a fair measure of after rains, promising a better crop yield. It has to be confessed, however, that a good deal of apprehension is felt lest the after rains, in sufficient quantity, may fail us. But these apprehensions do not seem to be justified by past experience of the February, March and April rain measures of bygone seasons, the average of which, added to that which we have already had, would be amply sufficient for us this year. Aside from the confidence which the general average for the late winter and spring term of the seasons warrant, we may find encouragement now in the fact that, up to Feb. 12, 1879, our measure of rainfall was but 5.14, as against 5.79 for the present season; while, after Feb. 11th, we had 10.43 that season, and a good crop yield. We accordingly have a precedent in quite late experience to encourage our hopes for the good harvest this year, in the central and western portion of the county, at least, and timely rains will revive hopes for the eastern section.

FRESNO.

WINERY.—*Expositor*, Feb. 8: Our townsman, Otto Froelich, recognizing the growing importance of Fresno county's grape interests, has concluded to start a winery and distillery in town, and in connection with it, as soon as the fruit prospect will justify, a cannery. Thus will the grape growers of this section be provided with a central cash market for their surplus fruit.

LAKE.

OUTLOOK.—Middletown Cor. *Bee-Democrat:* The clerk of the weather decided to supply us with another shower of glorious rain, which came last night, making a total of 2.86 inches for January against 17.85 for the year previous, or a total to date for the season of 13.81 inches against 39.79 inches for last season. Our farmers in this vicinity are very nearly all done with their plowing, the season so far being one of the most favorable. With our accustomed spring showers we are sure of a good crop. It is more than our southern sister counties can say.

LOS ANGELES

ALFALFA.—Los Angeles *Mirror*, Feb. 11: The party of gentlemen from Ventura county, noticed by the *Mirror* as having come down in search of pasture, returned to the city Tuesday from a tour of the southern and eastern portion of the county. They report the farmers in every section which they visited as bestirring themselves to utilize all the water at their command and opening every channel which will afford an extra supply. While they found numerous patches of alfalfa and numerous places where there might have been extensive fields of this valuable food plant, the fact is, they found no tract of more than 10 acres in extent, which was not at all adequate to their requirements. The fact is revealed that too little attention has been paid to alfalfa raising. It is one of the best of forage plants known to the country, and is the mainstay in all cases of drouth. With a good patch of alfalfa a farmer is entirely independent of rain, and were he to go into it more extensively there is nothing that would pay him better, and in a year such as the present promises to be, it is better than the average gold mine.

THE RAIN.—*Commercial:* The glorious rain of an inch and a quarter yesterday morning has given new life and hope and enterprise to the people. The grain growers are filled with faith in a good crop, and the stock raisers feel happy that the fields will be filled with rich grass. All the people of southern California rejoice and will make to-day a sort of thanksgiving. The rains have been delayed, not suspended, and all the people rejoice. The fields will soon be emerald and the happy live stock will rejoice and be fat. All branches of business feel the life which the great rain produces.

TAKE CARE OF THE FLOCKS.—The recent severe and unexpected weather, that wrought so much destruction in many localities in the flocks of sheep that were exposed to the fury of a snow-storm, should admonish our wool growers to be always prepared for emergencies. It may be that another snow-storm may not fall in a century, but cold rains are always injurious, and flocks in the lambing season should be well protected by sheds, or groves of trees. Stacks of straw or hay should always be laid away to be used in time of emergency. When rains are delayed, and feed is distant and scarce, many sheep are unable to range far enough to get a sufficient supply of food. The prudent stock-raiser at such a time will have a barrack of hay for the feeble of the flock, and a shelter from the inclement storms. On the Warner rancho, where Gov. Downey keeps his fine flocks of sheep, the snow storm of Jan. 12th left snow more than a foot in depth, and without care, the destruction of sheep would have been immense. But the Governor, with prudent forethought, many months ago, placed at different points places of shelter for his animals, and generous stacks of hay. As a consequence, when the storm came on, his sheep were placed in comfortable quarters, and all were saved; while those that were left exposed on other ranches perished from hunger and exposure, and the loss was heavy and severe, all of which could have been avoided by the same care which the Governor exercised.

NAPA.

GRAPE CUTTINGS.—St. Helena *Star:* There were shipped from St. Helena in January 1,264 packages of grape cuttings, weighing 36,885 lbs. There is no uniform number to a bundle, but the average weight is about 60 lbs. to the 1,000, so that this amount represents something over 600,000 cuttings.

SANTA CLARA.

HORTICULTURAL SOCIETY MEETING.—*Mercury*, Feb. 9: A meeting of the Horticultural Society was held Saturday afternoon, President Settle in the chair. The following report of the Treasurer, W. E. Ward, was submitted and placed on file. Receipts for the year, $30; expenditures, $9.85; balance on hand, $20.15. On motion the society proceeded to the election of officers for the ensuing year. The following were elected: President, Dr. Chapin; Vice-President, Mr. John Britton; Secretary, Mr. F. A. Taylor; Treasurer, Mr. W. E. Ward. Mr. Haines stated that a large number of trees were being shipped into this State from the East. They were probably infected with curculio, and the State Commissioner should be notified of it. It is fatal to plums and peaches. Dr. Chapin stated that Mr. Cooke had considered the subject, but he decidedly approved the suggestion made by Mr. Haines. After considerable discussion, the following resolution was adopted:

WHEREAS, fruit trees are received in this State in large quantities from the Eastern States, and as such trees are apt to be infected with curculio and other insects not yet found upon this coast; therefore, be it

Resolved, That we urgently request the Chief Executive Horticultural Officer to use his most vigorous efforts in preventing any trees or their attendant packages affected with noxious insects from being used in this State.

The question of lye being introduced, Mr. Settle stated that there were three brands in the market; namely, the American, Keystone and caustic soda. The Keystone lye stood at 13½°, and the other 15° above water. The caustic soda is the cheapest, but can only be obtained in large quantities.

SANTA CRUZ.

FOWL FINANCES.—Santa Cruz *Courier*, Feb. 9: Fabulous stories about the money in hens are regularly reproduced in all the agricultural and general newspapers, but rarely are the statistics such as commend themselves under careful scrutiny as a basis for future calculation We present below the balance sheet of Mr. Otis A. Longley, on fowls for 1881, and every person in the vicinage will vouch for the reliability of Mr. Longley's record. The figures are not fancy, but prove that there is a snug sum of pin money in a few fowls properly cared for:

DR.

To 61 fowls on hand Jan 1st, at 50 cents	$30.50
To 43 chickens on hand Jan 1st, 25 cents	10.75
To cost of feed for year	47.60
Total	$88.85

CR.

By value of eggs laid, at market prices	$93.00
By amount received for chickens sold	87.60
By 60 fowls on hand Dec. 31st	30.60
By 46 chickens on hand Dec. 31st	11.50
Total	$222.10
Balance net profit	$133.25

The hens were mostly half-breed Plymouth Rocks, and Mr. Longley sold a large portion of the eggs at 50 cents per dozen for setting, but they are computed in the above statement at the current market rate.

SAN DIEGO.

NOTES.—*Union*, Feb. 7: Hamilton & Co. have on hand a fine lot of almonds grown by Major L. H. Utt at Agua Tibia, near Pala, in this county. The orchard is one of the largest and most thrifty in Southern California. All the favorite varieties of almonds can be found in this orchard, which mature to perfection. Mr. H. M. Higgins brought in 35 boxes of lemons yesterday to be shipped to San Francisco. He has already forwarded 80 boxes, and will, perhaps, have some 200 boxes more to ship. These lemons are of a very choice, seedless variety, which Mr. Higgins has named the "Bonnie Brae." We have frequently contended that San Diego is one of the best adapted counties in the State for the growth of deciduous fruits. But it seems that its productive range is even greater than we have claimed. In conversation yesterday with Mr. O. S. Chapin, of Poway, who is well acquainted with this county, and thoroughly posted in tree culture, he informed us that cherry trees will grow thriftily, and the fruit ripen to perfection, anywhere in this county above the elevation of 1,000 ft. It has generally been contended that the cherry will not do well in any locality in southern California. As there is a very large area in San Diego county above this elevation, we shall expect, in time, to see this favorite fruit produced quite extensively.

SHASTA.

ANDERSON ITEMS.—EDITORS PRESS: Yesterday, Feb. 12th, it began to snow about daylight, melting as it fell at first, but soon began to lay white on the ground. All day it fell steadily, in large feathery flakes. This morning there is no dividing line on the mountains, but all the valley lies in the sunbeams white as Mt. Shasta. Snow on the hills is not so rare, but down by the river it is certainly a new experience. Last night was one of the coldest of the season. Mercury stood at 22° above zero after sunrise, and snow still lay on the ground about three inches thick this morning. Now, at 4 P. M., the poetry and beauty are all gone, and the snow itself fast disappearing in a slush of mud. Truly, I find I must send items more frequently if I would keep up with the growth of our town. Messrs. Beecher & Champlain are erecting a building for the purpose of tinshop, etc., and we even hear a printing office talked of soon.—MRS. J. M. K., Feb. 13th.

SONOMA.

THE OUTLOOK.—Santa Rosa *Republican*, Feb. 9: Farm work, for the season, is unusually forward, as the ground has been in good condition for plowing and seeding all the fall and winter months. Husbandry, according to our observations after traveling extensively over the country, never was in a more prosperous condition. This includes the valleys of Russian river, Santa Rosa, Sonoma and the dairy region about Two Rock, Bloomfield and Bodega. Remunerative prices for products and favorable weather for seeding have stimulated industry.

We also note extensive preparations on all sides for planting more orchards and vineyards, but not to the enormous extent of 10,000 acres, as some sanguine people have reported.

SONOMA.

A WOOL-CLEANING PROCESS.—Santa Rosa *Democrat*, Feb. 11: We have been shown at the Santa Rosa Woolen Mills, an apparatus for removing (or "killing") the bur and other vegetable and foreign matter in wool. The apparatus is the result of experiments and long study on the part of Mr. Karl Hofman, foreman of the dyeing department of the above-named mills, and has fully come up to the expectations of the inventor, or discoverer, rather, as the process is not entirely new, having been a secret among the profession a long time, but the apparatus for securing the result aimed at is the invention of Mr. H. The process is very simple, and consists of two large tanks, above which, and at the top of each, is placed a double pump, operated by steam. In one of these tanks is placed the wool desired to be cleaned, in a solution of acid. After soaking for the desired length of time, the acid is pumped off into tank No. 2, which has also been filled with burry wool, the wool in the first tank is removed to the dryers and the tank refilled, after which it is again filled with the acid from tank No. 2, the contents of which is also removed to the dryers, and so on. The wool after undergoing this process is found to be as free from cockle bur, bur clover, wild oat, etc., as the cleanest picked wool, while the wool itself remains uninjured and is perfectly free from grease. Iron pumps would be useless for the purpose, as the acids used would cut the iron and render them useless in a very short space of time. To obviate this, lead has been used entirely in the construction of the pumps, which metal is not in the least affected by the acids. Only a ½ inch pipe furnishes steam enough for the purpose of working the pumps, and is sufficient to pump 2,040 gallons an hour. The acid is not weakened materially by use, and can be made available for cleaning purposes for a long time. This ingenious device can be used for other purposes besides the one it was invented for, namely, in tanneries, hat factories, etc. Superintendent Farmer informs us that Mr. H. has filed a caveat for the invention, which we hope may prove a bonanza to the clever inventor. Mr. F. also showed us a fine article of heavy red flannel made of burry wool that had undergone this process of cleaning, which was as smooth and clean as any manufactured from the best grade of clear wool. We were also informed by the superintendent that improvements to the extent of $1,000 have been added since Jan. 1st to these mills, and that they have on hand and ready to ship over $15,000 worth of goods which are all sold. The prospect is truly encouraging.

TEHAMA.

BRINGING IN SHEEP.—Napa *Reporter*, Feb. 10: John Finnell, of Napa valley, has recently effected a purchase of 15,000 head of sheep in the neighborhood of Los Angeles at one dollar per head. They will be sent forward by rail to Tehama county, where they will be pastured on lands of his before being slaughtered. One hundred and fifty cars will be required to transport the sheep to their new location, and the freight charges are 75 cents per head.

TULARE.

COUNTY NOTES.—Visalia *Delta*, Feb. 10: Hunter farmers are very much encouraged since the rain of last Tuesday, and people on the plains who had quit work on account of the drouth have again started their plows and seed-sowers. A wet season is anticipated by some in the swamp. It has rained about two inches. Grain that, to all appearances, was dead before the late rains now looks green and is making rapid growth. What rain has already fallen will be of great benefit to stockmen, as a few spring showers will make feed good in the foothills. Potato planting will soon commence in swamps, and a large crop will be planted. The old crop is about all exhausted, and every day men can be seen hunting for potatoes.

VENTURA.

EDITORS PRESS:—No rain of any account as yet. Sunshine reigns supreme. Even we of the Ojai are beginning to feel the effect of the continued dry weather. A marked melancholy pervades the air, which makes one feel guilty if he cracks a joke or is in any way facetious. The stock men are in a much worse predicament than the farmers. Already they have met with some losses, and if the rain holds off much longer they will lose the greater part of their stock. No rain! No rain! is echoed from one end of the county to the other, and every one looks blue and downhearted. When next I write I hope it will be in a livelier mood, but from present indications I fear 'twill be otherwise.—R. W. C., Nordhoff, Cal.

NATIVE PLANTS—SPECIMENS.—We have received from Parish Bros., of San Bernardino, a copy of their list of specimens of plants of Southern California, collected in the counties of San Bernardino, San Diego and Los Angeles. The specimens will be found of good quality, for Parish Bros. are competent botanists as well as diligent collectors.

BRIGGS WAGONS.—The house of R. F. Briggs & Co., 220 and 222 Mission St., have just received and are now unloading two car-loads of buggies, rockaways, express and farm-wagons, being the advance shipment of eight car-loads on the road, aggregating 250 vehicles.

Southern California Citrus Exhibition.

The fourth annual exhibition of citrus and semi-tropical fruits grown in California, will be held at Riverside, San Bernardino county, on Wednesday, Thursday and Friday, the 22d, 23d and 24th of March, under the auspices of the Riverside Citrus Fair Association.

The following programme has been adopted:

Premium List.

CLASS 1.

Best display of citrus fruits grown by one exhibitor in the counties of San Diego, Los Angeles, Ventura and Santa Barbara	$15.00
Second best	10.00

CLASS 2.

Best display of citrus fruits grown by one exhibitor in the counties north of Los Angeles and Santa Barbara	$15.00
Second best	10.00

CLASS 3.

Best display of citrus fruits grown by one exhibitor in the county of San Bernardino	$10.00
Second best	5.00

CLASS 4.

Best display of one variety of budded fruit, not less than 30 specimens; size and general appearance to decide	$ 5.00
Second best	3.00

CLASS 5.

Best display of one variety of seedling fruit, not less than 30 specimens; size and general appearance to decide	$ 5.00
Second best	3.00

CLASS 6.

Best pyramid of oranges in variety, not less than 50 specimens; general appearance to decide	$ 5.00
Second best	3.00

CLASS 7.

Best budded orange	$ 5.00
Second best budded orange	3.00

CLASS 8.

Best seedling orange	$ 5.00
Second best seedling orange	3.00

CLASS 9.

Best orange on exhibiton	$ 5.00

CLASS 10.

Largest orange on exhibition	$ 5.00
Second largest orange on exhibition	3.00
Largest and finest cluster of oranges	5.00
Second do " " "	3.00

CLASS 11.

Best plate of Riverside or Washington Navel oranges	$ 3.00
Second do	2.00
Best plate of Australian Navel Oranges	3.00
Second do	2.00
Best plate of Malta Blood oranges	3.00
Second do	2.00
Best plate of Paper Rind St. Michael oranges	3.00
Second do	2.00
Best plate of Mediterranean Sweet oranges	3.00
Second do	2.00

CLASS 12.

Best display of lemons	$5.00
Second do	3.00

CLASS 13.

Best lemon	$ 5.00

CLASS 14.

Best display of Limes	$ 3.00
Second best display of Limes	2.00

CLASS 15.

Best box Muscat Raisins	$ 5.00
Second do	3.00
Third do	2.00
Best box Sultana Raisins	3.00
Second do	2.00
Best box of Zante Currants	3.00
Second do	2.00
Best box of Figs	3.00
Second do	2.00
Best specimen of Preserved Citron	3.00
Second do	2.00
Best specimen of Preserved Lemon	2.00

CLASS 16.

Best specimen of Olive Oil	$ 5.00
" " " Pickled Olives	5.00
" " " " Limes	2.00

CLASS 17.

Best specimen of Fresh Grapes	$ 3.00
Second do	2.00
Best specimen of Almonds	2.00
Second do	1.00
Best specimen English Walnuts	2.00
Second do	1.00

CLASS 18.

Best display of Winter Apples	$ 3.00
Second do	2.00
Best display of Winter Pears	3.00
Second do	2.00

CLASS 19.

Best display of Fruit in Glass	$ 3.00
Second do	2.00
Best display of Preserved Fruit in Glass	3.00
Second do	2.00
Best displays of Jellies in Glass	3.00
Second do	2.00
Best specimen of Orange Jelly	2.00
Best specimen of Orange Marmalades	2.00

CLASS 20.

Best exhibit of Dried Apricots	$ 2.00
Best exhibit of Dried Peaches	2.00
Best exhibit of Dried Apples	2.00
Best exhibit of Dried Pears	2.00
Best exhibit of Dried Prunes	2.00

CLASS 21.

Best display of Flowers	$ 5.00
Second do	3.00

RULES ADOPTED FOR THE GOVERNMENT OF THE EXHIBITION.

1.—All fruits entered for premium must be grown by the exhibitor.

2.—Each exhibit of Citrus Fruits must consist of at least six specimens.

3.—All entries from Riverside must be in by Tuesday afternoon, the 21st, and from all other parts of the State by noon on Wednesday, the 22d.

4.—All exhibits must remain until the close of the Exhibition, at which time premiums will be paid.

5.—Parties residing in districts affected with red scale are requested to be very careful in selecting specimens to be furnished for exhibition, as no fruit affected with that insect will be exhibited.

6.—For the purpose of determining the best orange, the prize varieties as determined by the Committees in Class 7 and 8 will be selected for comparison.

7.—Exhibitors from abroad are requested to send four extra specimens for the use of the Awarding Committee.

8.—The Awarding Committee will be announced on the morning of the second day.

9.—The Committee would suggest that all oranges intended for competition for quality, should be picked at least ten days, and the lemon one month before the date of exhibition.

ADMISSION FEES.

Season ticket, not transferable, admitting one person to the hall during the Exhibition	$1.00
Season ticket for children under 12 years	50
Single entry, adult person	25
Children under 12 years	15

The exhibition will open at 1 P. M. Wednesday, March 22d, and the evenings will be devoted to the discussion of topics connected with citrus culture.

The committees of awards will meet in the hall at 9 A. M. Friday, March 24th, to award the premiums, and the reports of awards will be made in the evening of that day.

Fruit growers will please notice that the territory of California in which citrus and semi-tropical fruits are grown has been divided into three districts, and the premium list so arranged as to enable the growers of citrus fruits in these districts to compete with each other in the matter of display, while competition is open to all for other premiums. Also, that the Riverside Land and Irrigating Co. has very generously offered to pay all freight and express charges of fruit sent to the exhibition.

The success which has attended our experiments of the past three years in bringing together the citrus fruits of southern California cannot be over estimated. It has stimulated the production of the very best varieties, aided us in perfecting our method of cultivation, and drawn the attention of those interested in fruit growing to this coast.

Riverside citrus exhibitions are now one of the permanent institutions of California, and are visited by persons from all parts of the country. So numerous have been the exhibits and so great the attendance, that it has made it necessary to provide more commodious quarters. An association of citizens of Riverside, with their accustomed liberality and enterprise, have built a large and handsome pavilion 135x56 ft., in which future citrus exhibitions will be held. This pavilion will be ready for use on the date fixed for the exhibition. May we not expect that all persons interested in the culture of citrus fruits will attend and contribute by their presence and products to the interest and success of that occasion. H. J. RUDISILL, Manager.

Albert S. White, James Bettner, B. D. Burt, Executive Committee.

News in Brief.

JOSEPH DE CAISNE, the distinguished botanist, is dead.

THE dory *Bath City*, on her cruise around the world, has arrived at Nice.

A GOLDEN eagle was killed on the Reavis ranch, near Chico, lately, while trying to carry off a dog. It measured seven ft. from tip to tip of the wings.

THE Yuma *Free Press* states that the steamer *Mohave*, on her last trip up the Colorado river, took 44,000 lbs. of grain and merchandise, and 10,000 lbs. of machinery.

CHAS. W. STEVENS died Monday in New York. He built the first locomotive run in California, and superintended the building of the first railroad in Oregon.

THERE are several prisoners in the County Jail, says the Gold Hill *News*, who are imprisoned for trifling offenses, committed in order to procure free board and lodging.

NOTHING more will be heard about admitting M. D. Ball as delegate from Alaska till the Committee on Territories report on whether or not Alaska will be organized as a Territory.

THE San Jose *Headlight* states that in the middle of the Pajaro river a subterranean spring has appeared, discharging water, quicksand and mud, which is forced to a distance of several ft. above the river's surface.

THE House Commerce Committee have reported favorably Berry's bill to erect a lighthouse and fog signal at Point St. George, Cal. It is to be located northwest of Seal Rock. Fifty thousand dollars is the amount appropriated.

LEADING members of the House Banking Committee say that after consideration of the subject they are confident that the House will pass the bill making the trade dollar a legal tender, and that the interests which opposed it before will now allow it to pass.

LARGE tule fires were raging in several of the Sacramento river islands last week. West's island was almost entirely denuded of vegetation. The air was filled with flying cinders and smoke. Some of the fires are reported to be the work of careless hunters.

ALLISON, Chairman of the Senate Committee on Appropriations, has a letter from the President of the Pennsylvania Railroad Co., in which he says: "Our company had at no time, nor have they now, any intention to make any claim for compensation for the courtesies extended to the late President and his family or to the officers of the Government."

THE following circular has been issued by the Treasury Department: On the exportation of flour wholly manufactured from imported wheat the drawback will be allowed at the rate of 89 cents per barrel, less the legal retention of 10%. Collectors will see that proper arrangements are adopted by mills within their districts, where flour may be prepared for exportation with the benefit of the drawback to imported wheat at any stage of the process of its conversion into flour.

Volunteer Testimonials of Those Who Have Used Booth's Exterminator.

EMMET, CAL., Nov. 23, 1880.

A. R. BOOTH:—I gave your Squirrel Poison a fair trial, and gave some to my neighbors. We find it as good as recommended, and are satisfied it is the best we have ever used. There will be no trouble in selling it in this county.

HUGH MATTHEWS.

GUADALUPE, CAL., Feb. 2, 1881.

A. R. BOOTH:—What I have disposed of your poison has given perfect satisfaction. I enclose check for amount of bill. JOHN DUNBAR.

BURBANK'S NURSERY.—An advertisement of Luther Burbank's nursery at Santa Rosa may be found in this issue. Mr. Burbank is a skillful propagator and has many valuable things.

POULTRY CIRCULAR.—L. C. Ryce, of Petaluma, sends us his circular of Plymouth Rocks and brown Leghorns. It is an interesting sheet.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

A TURNED LEAF will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

BOOKSELLERS, STATIONERS, ETC.—Messrs. Payot, Upham & Co., No. 204 Sansome Street, are one of the oldest most enterprising and reliable firms in the book and stationery trade in San Francisco. Scientific, industrial and foreign publications are a specialty with them. They are also noted for their first quality of blank book and fine stationery line of goods.

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Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired), be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

A New Invention in Plows.

EDITORS PRESS:—Since I have been a subscriber to the RURAL PRESS I have received many valuable ideas and suggestions from my brother farmers. I shall be glad to reciprocate when possible. It has long been known by intelligent farmers that the gang plows in general use are with exception of most favored conditions, veritable mule-killers, and no doubt many have been anxiously waiting for some radical improvement in the plow line Anxious to find something of this kind that promised success, I heard of a late importation, and resolved to order one and try it with the understanding that if not satisfactory it could be returned. I received it, and an odd-looking thing it is. Two 13-inch plows of the Oliver Co. make, without landsides, set on iron beams attached by a coil spring to a sulky frame. The furrow wheel is set on a movable jointed axle, and when in operation inclines at an angle of about 30 degrees, running in the angle or corner of the furrow to counteract the push on the mold-board. These are the chief distinguishing points of the plow. I have run it five days, and it does work well, being a light draft for six medium size mules while cutting in heavy clay soil a furrow eight inches in depth and doing a clean, even job upon uneven land. This I consider a great success, and if others wish to try this Casady plow they can get them from Holman, Stanton & Co., Sacramento, importers. I write this wholly in the interest of farmers. J. A. TOWLE.

Willows, Cal.

Our Agents.

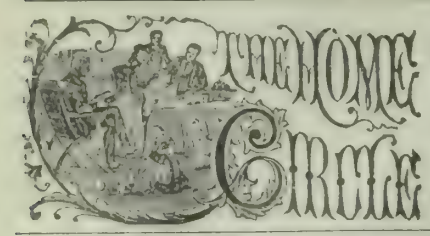
OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

G. W. MCGREW—Santa Clara county.
M. P. OWEN—Santa Cruz county.
J. W. A. WRIGHT—Merced, Tulare and Kern counties.
JARED C. HOAG—California.
B. W. CROWELL—Humboldt and Trinity counties.
D. W. KELLEHER—Merced, Stanislaus and Tulare counties.
A. C. KNOX—Nevada and Placer counties.
E. A. WEED—California.

San Leandro Plow Company.

EDITORS PRESS:—Will you kindly permit me to say in the columns of the RURAL that the works of the San Leandro Plow Company at this place are in active and constant operation, and are not shut down as has been so industriously stated by somebody in remote interior towns. We are fully prepared to fill all orders for farming implements or anything in our line with promptness, as usual. JACOB PRICE, Superintendent.

San Leandro, Cal., Feb. 13, 1882.



Old Farmer John.

[Written for the RURAL PRESS by ADA E. TAYLOR.]

"Now, don't you think," said farmer John,
To his little wife, one day,
"That we could manage to get along
If we hadn't that girl to pay!
She is very good, I doubt it not,
To help you wash and sweep,
But then you see the harvest men
Have got to be paid next week.

"There is not enough of work for two,
I've noticed oft before;
And I declare 't would help a bit
To save just that much more.
I do not mean," said thoughtful John,
"To make you work too hard;
For don't you see, I could help around
And sometimes weed the yard?

"And another thing, my little wife,
That I forgot to say;
I think I'll have to hire some one
To clear the brush away.
I should like to see that very spot
All overgrown with wheat;
The work is too hard for me to do,
As I *cannot stand the heat*."

His little wife, on hearing this,
Confronted farmer John—
"If you would have less men to pay
I think we could get along."
Her voice was quivering with the tears
That filled her eyes of gray,
To think she had worked so many years
And yet so much to pay.

She thought of how her own two hands
Had done the work alone,
While John had hired so many men
To work around his home.
Then she had asked quite timidly,
If she might have some one
To help a bit, as she was tired,
Till harvest time was done.

In trooped the boys and girls from school,
With wants that were not few;
And still old farmer John had thought
There wasn't much to do.
When he had talked of hiring more,
And send her help away—
She then and there made up her mind
That the hired girl should stay.

"Now John," she said, not quite as meek
As she had spoken before,
"If you want to save and help a bit
Just stop a-hiring more.
'Tis like a man to want it all,
And let his wife have none;
But in the future remember this—
I will not work alone."

"You see the children are such a care,
Although they make home bright;
So farmer John make up your mind
To a wife's undoubted right.
I think that you can clear the brush,
And help to plant the wheat;
But I will keep my hired help,
As I cannot stand the heat."

Tuolumne Co., Cal.

From Santa Cruz to Stockton.

[Written for the RURAL PRESS by LAURA J. DAKIN.]

So many people make this trip by cars, that perhaps they would like to hear about my boat ride. I came to San Francisco by the steamer *Senator*, the largest one that runs up and down the coast. She stops at Santa Cruz, Monterey, San Simeon, Cayucas, Gaviota, San Buenaventura and Santa Barbara. She can accommodate 150 or 200 passengers, and for short excursions in summer time often carries from 300 to 500. She had on board cattle and sheep from the lower counties; also large quantities of corn and grain from Ventura. As we neared the city all the rugs, carpets, curtains and cushions were removed from the cabin, as the grain has to be hoisted up through it, and should a sack drop, as is often the case, the contents would fly all over the floor and soon ruin the carpets if they were not removed.

In '51 and '52, the *Senator* ran from San Francisco up to Sacramento, charging $50 for each passenger, though they were often so crowded there was only standing room.

"Good heavens, madam!" said the steward, "but you may believe this boat has made money—more than she would dare carry now in good gold pieces."

She came around Cape Horn, and is about 45 years old; was completely renovated in '75, and seems to be kept as neat as a parlor. Men went about cleaning the wood-work, though it appeared to be quite free from dust when they began; and when the order was given to "sweep the decks," it seemed to be "spick, span clean" already. The two young fellows coming along with their brooms to obey the order were evidently of that opinion also; they stood a few minutes peering about and laughing at the idea of sweeping nothing; finally one of them espied a small chip, which he began to sweep along with mock solemnity, and at last, picking it up with exaggerated carefulness, hoisted it overboard.

My trip had been hurriedly planned, and as we neared the wharf I thought with some dismay, that I had forgotten to write for my friends to meet me. However, I thought I was equal to carrying my bag to the street-cars. For what have female pedestrians come into favor? Or why are ladies praised for making the tour of Europe, carrying their baggage in shawl-straps, if I could not be strong minded enough to tote my baggage though the streets of San Francisco?

The boat touched the wharf and runners began to go to and fro seeking whom they might devour.

"Have a carriage, madam?"

"Have a coach?"

"No, sir."

"Carry you anywhere—cheap!"

"No, sir."

Bless them! they were quite mild toward me, if I was backwoodsy. Perhaps it was because they caught sight of an old rancher and thought him more lawful prey. They circled about him and coached and carriaged him to their hearts' content.

"Don't want no kerridge," said he.

"Where you going?"

"Up on Van Ness Avenue."

"Ever been there?"

"Yes."

"How long ago?"

"Wal, about five year, I reckon."

At this all the runners lifted their eyebrows up into their hats and seemed to try to make their noses follow them, while the gentle pity of their expressive smiles reminded me of the kindly countenances of sharks around a man overboard. Then they began with renewed vigor.

"Why, man, you couldn't possibly find your way there now; the city has changed—"

"City has—lose your way—changed—take you cheap—lose your—coach—cheap—way—lose your—dollar and a half—city—"

I did not stop to see whether they succeeded in convincing the old man what was for his best interest or not, but I can well imagine their supreme disgust if he had "backbone" enough to escape them.

I asked the steward the direction to Market street; he told me, and kindly sent a waiter to carry my bag out through the crowd for me. When I reached the old familiar street I saw a car coming, which read "Market" on its side, hastily raised my hand and the next minute was climbing in, trying, as I did so, to handle my big bag as though it were a mere bagatelle, and my bundle as though it were nothing at all.

I settled down for a good long ride, up to Ninth street, feeling quite safe and satisfied. I even threw a thought of commiseration toward the countryman that I had left surrounded by such glib tongues. Very soon, however, the car made a sudden, sharp turn to the left, which rather shook my confidence in the situation, and I began to peer out anxiously for some familiar landmarks. As I hesitated I was painfully aware that the car still trundled on, right for itself, but, perhaps, wrong for me. So I enquired of my fellow-passengers as to my whereabouts, telling also where I wished to go.

"Oh, then you are altogether out of your way," they said. "This is a Market and Fifth street car; you'll have to go back and take another."

I caught up my bag with an assumption of careless ease, and made my exit with all the grace of a nervous little Miss Podsnap. I went back, and turning the first corner, found myself on Mission street, having gone farther in the wrong direction than I thought; so I gave up Ninth street. I had friends nearer than that; I would go to them instead of trying another car. I determined, however, to say nothing of my meanderings. But, oh, the curiosity of man! My host began to question, till somehow I found I had told my story and—how they did laugh!

"Well, well! if you'd only staid on that car, it would have taken you right down to the depot, and you would have been all ready to start for home by railroad. That would have been getting around lively," said one.

"Why didn't you take the Lone Mountain car?" said another. "That is nearer the wharf, and would have taken you right close by here."

"I didn't know about the Lone Mountain car. I only knew—"

"Market street cars! ha ha ha! I should think you did. And you carried your own bag all that way, and from Mission street up here. My goodness, if a *Chronicle* reporter could get an inkling of your adventures he'd write you up with all sorts of embellishments.

"If that's the case," said I, "I had best write them myself, without the embellishments, for who is going to mind a little backwoods woman in busy San Francisco, if she does carry a bag and pop out of the wrong car like a 'jack in the box.'"

The next evening I took the boat *City of Stockton*, for the trip up the river. This is also a good boat but not as pleasant as the *Senator*, the decks are so narrow and the cabin not quite so well lighted, but that makes not so much difference at this time of the year, as the trips are made for the most part in the night time, when the cabin is well lighted by hanging lamps. A fine organ stands ready for any player who dares wake the echoes.

As I sat talking with the ladies I became much interested in the life of one of them, for it reminded me of the humorous "Rudder Grange" sketches published in Scribner's Magazine a few years ago.

"I stop at Jersey Landing," said she, "but our scow is three miles beyond there, so I don't suppose I shall get home to-night. I reckon you'll think it queer, but I have a bit of a house built right on the scow and there I live more than half the year."

"Well, that is a strange sort of home. Do you like it?"

"Indeed I do; I have it fixed up mighty comfortable, and can cook, wash and iron there as well as I could on land."

"But what are your reasons for living in that way; is it your health? if you don't mind my asking."

"O dear, no! We're hunters; that is, my husband and three boys are, and I go along to keep house. We live on the scow so that we can move from place to place along the river where game is most plenty. We supply a great deal of the game in the San Francisco market."

"What kind of game do you get?"

"Well, we have geese, snipe, doves, sand-hill crane,——"

"Why, I did not know sand-hill crane was good to eat!"

"Oh, yes indeed! they're just as good and delicate a bird as you'll find. Then there is a variety of ducks—there's honkers, teal, sprig, widgeon, mallard, red-head, canvas-back, butter-ball, saw-bill, white geese and brant."

"How many can they shoot in a day?"

"They have shot 200, and often bag somewheres near that; then again a deal less."

"They must find it profitable."

"They do that. Why, a few years ago when game was high, even my youngest boy used to earn $10 or $12 per day. They take their guns and are off before light in the morning; at night they come home, have their supper, and dress and hang up all their game ready to send off, before they go to bed."

"Don't you get lonely?"

"Bless you, no; it just suits me. I do up my work and then maybe make a little patch-work for quilts or do the mending for my menfolks. Once in awhile I shoot a little myself—oh, yes, I'm a pretty good shot and often get ducks or mud-hens for our dinner."

"What, do you cook mud-hens, too?"

"Of course; they make just a splendid soup—cook 'em till the meat drops off the bones. I wouldn't ask for a better meal than that."

"Do you ever fish?"

"Yes, and I can row a boat right well, for I am stronger than you think."

"I should like to visit your strange home."

"I'd like to have you sure. We sometimes have hunters come up from San Francisco for a few days' shooting; they go out with the men and board and lodge on the scow."

"Do you stay through the summer months?"

"O dear, no, I couldn't stand the musquitoes that come to hunt us then, they're too many for me. We come up a few days before the game law is out so as to be all ready to begin on the 15th of September; and we stay till March."

"Do you ever take your scow down along the sea coast?"

"No, but we sometimes go up the Sacramento river, though not often, and I've never been as far up as the capital."

After this her talk drifted away to reminiscences of her Virginia home, but they were all interesting and I was sorry to part company with her

We reached Stockton as the morning broke, and lo! rain descended upon the earth.

Soquel, Cal.

"Clear Grit."

You are fortunate if you possess this quality, and still more fortunate if you are compelled to use it. Great success is not possible without great effort. If you meet with no trials, no resistance in your course, if you float lazily down the stream of time, all things seeming to join in aiding you on the way, and in warding you from every blow, you will live and die without an achievement worth recording. What you need is opposition, and pluck to overcome it. You are a stranger in a strange place, you must make acquaintances and friends, and by deserving keep them. If you are without money, you must rely upon your own honest efforts to procure it. If you are destitute of patronage in your calling, you must have the pluck to work and wait until you secure it by proving yourself worthy of it. Are you tempted to forsake the path of strict integrity and rectitude? You must stand firm. Does the task before you seem difficult, do you think it possible? Nerve yourself for the conflict and resolve that you will succeed; human energy and perseverance will enable you to do so.

Like unto pluck, if not in fact a part of it, is self-reliance—a prominent characteristic of all really successful men. This quality you should cultivate. Learn to depend upon your own exertions and you will develop a reserve power that will serve you in every emergency. If you cling to another whom you think stronger and wiser than yourself—you will always be a vine—never an oak. Like the oak, you will gain strength by breasting the storm, and of your own might resisting it. You are not, however, to scorn or reject the advice and assistance of those older and more experienced than yourself. On the contrary, you should accept them gladly and appropriate them, making them a part of your own strength. Thus used, wisdom received by receipt from others, will increase rather than diminish your self-reliance. To the end that you may have self-reliance, you must have self-respect. Think well of yourself, do not depreciate your own powers. Remember that what man has done man can do. Remember, too, that we all began life on a perfect equality, and that there is no royal road to success.—*George W. McCrary.*

Worn.

[Written for the RURAL PRESS by HOPE HAYWOOD.]

Over on the other side—
Unto the bourne so far away—
With eyes of longing look we now,
We left life's stronghold at midday.

We left the battle to the strong,
Amid crushed flowers at their feet;
They know not yet the way so long,
Their own dear thought they hope to greet.

Renounce your wills—your hurtling strength;
So shall ye see the Shepherd's paths;
So shall ye hear soft rustling wings—
And find the blessed aftermaths.

Adown the hill—down the slope—
Across the river to the plain;
There dwell in rest—no more in hope—
The millions of the worn and slain.

Do Our Women Dress Warm Enough?

[Written for the RURAL PRESS by JEWELL.]

In a late article on fashion, etc., in a popular journal, the writer touched upon dress reform encouragingly, a most important one to the women of to-day. I felt that by no class of women more than by farmers' wives and daughters are such good words needed. Their lives on a farm keep them so much alone, while their duties indoors or out are of such a nature as to make the old, superficial, fashionable dressing a nuisance and an injury. What can be more uncomfortable to a busy woman, with churning, washing or baking to do, than to be braced up with a row of steel or whale-bones, so that to stoop to the stove oven is a torture, and bending over a wash-tub most tiresome. Then the long skirts to be lifted up and down the steps—wiping up every drop of spilt water and then trailing in the earth, if she steps outside—make clean skirts, stockings, and shoes, even, an impossibility. To be sure there is no one to see her wet draggled skirts but herself and family, perhaps; but taking the discomfort, extra expense and work, to buy, make and keep clean such clothes, into account, would it not pay to dress for the work we have to do? But by far the worst feature of bad dressing is the *insufficient underclothing* of women and girls. No wonder we find the mothers and daughters of to-day delicate, if not actual invalids. A thin covering of cotton cloth, leaving the arms and neck bare, usually constitutes the entire underwear of our women! A few, more delicate, wear knit, "half-wool vests," they are called, and though an improvement and better than nothing of the kind, are not warm enough nor of the proper shape for health and comfort.

A continuous garment covering body and limbs is greatly superior, and the heaviest flannel is none too warm for any woman, no matter what her occupation may be. Why ladies should object to dressing warm and healthfully is beyond comprehension; that they do not is obvious to all. Why they will insist upon distorting their fair proportions with steel-clad garments, looking as if run in a mold, is another remarkable conundrum, unanswerable of course. Just imagine the statue of the Greek Slave in stays and trail, paddings and shirrings! Quite as out of place is the rosy, busy farmer's wife or daughter in the same costume, or the tripping shop girl. Even the city lady of family, whose duties take her amid busy throngs in the streets, looks sadly uncomfortable if obliged to lift and carry heavy and trailing skirts. Let the infants wear the long, swadling clothes, or those women only who have nothing else to do or think of but their garments.

In like manner all corsets, and steel and bone ligaturing, belongs of right to the *deformed*, who need bracing and lacing into proper proportions.

In a conversation last summer with a rosy young daughter of a farmer upon the needless use of corsets, and their injury to growing girls, etc., she exclaimed warmly after admitting the soundness of my arguments, "I'd rather die than give up stays!" I sighed as I thought of her weak and congested lungs, and half-clothed limbs and feet. A few years, maybe, would change her opinion. What poor material such a girl must be made of! Give up her life rather than give up lacing! Ah, my dear girl, many a grave is filled by such as you, and more little graves are filled by just such mothers as you make!

What we want is to educate our girls to an independence in, and a knowledge of the importance of the subject of dress. And I have long thought that only in one way can this be done, and that is through making it popular by *fashion*. So the article I spoke of gave me hope that such a day was dawning, when we women would be free to wear a sensible, comfortable and healthful dress. In the city or in the woods, at the wash-tub, or out shopping there is need of an appropriate fashion, sensible and artistic, so that we can be clad comfortably and for the work to be done; warmly, as health demands, and artistically, as in the Grecian times when drapery was made a study, and the clothing of women a divine art.

Deer Ridge Farm.

FRIEND of the family to the boy twins: "I'm afraid you little fellows don't always agree. You fight each other sometimes, don't you?" Twins: "Yeth, thir, thumtimth." F. of the F.: "Ah, I thought so. Well, who whips?" Twins: "Mamma whips!"

Chaff.

PRIDES itself upon its rank—the onion.

AN honest man is the noblest pursuit of wonan.

A LITTLE land is not enough to build a house n, because a man wants a lot.

WHAT fruit reminds you of a saddle horse? The canter lope of the desert.

A BUNGHOLE is a very necessary thing in a barel, but, after all, it is nothing.

ADAM established the "pioneer press" when e first hugged Eve in the garden.

WHAT is that which no man wishes to have nd no man wishes to lose? A bald head.

WOMEN are not cruel by nature. We never eard of one thoughtless enough to step on a nouse.

FOREIGN perfumery was first imported into his country in 1700; that is, in the old Cologne-al days.

IT is expected that the fancy for old gold will oon create a favorable sentiment toward the 'yaller dog."

MAIDEN lady's quotation, slightly altered from n old aphorism—"When singleness is bliss 'tis olly to be wives."

IT is said that sharks will not bite a swimmer who keeps his legs in motion. If you can keep icking longer than a shark can keep waiting, ou are all right.

Beauty in Our Homes.

No American can travel through the French arishes in Canada, says an American journal, vithout being struck by the contrast between he picturesque cottages of the French *habitants* hat are frequently seen and the houses occuied by the same class of persons in the United tates.

All are alike built of wood, all are alike heap; but the Canadian house, with its variety f steep roofs and gothic windows, its fine colring, its quaint shaded garden, is a delight and surprise to the eye of the artist, while we all now how plain and unattractive is the orinary farmhouse in America.

Many a well-to-do farmer owns a rich farm, o the culture of which he gives unremitting abor and large sums of money. But the house e lives in gives no evidence of the care or hought that he expends on his farm. It is a quare dwelling set down in a bare space and urrounded by a staring rampart of chicken oops, barns, corn cribs and pig sties.

The whole place is orderly and clean, but one the less is it unattractive and unhomelike. Thrift and plenty and cleanliness are seen verywhere. These are good and necessary hings in their way, but they are not all the ood or the necessity of life. The coarsest boy r man has within him a sense of beauty, a ove of harmony in nature. This may be awakned to elevate and refine his whole nature, or t may be allowed by neglect to die out, while e degenerates into a coarse, money-making lodder.

Every farmer's wife or daughter has it in her ower, if not to make the house itself picturesque, to surround it with beauty that costs othing. Let there be roses in the garden, ines clambering over the roof, a few copies of ood pictures on the walls, and the gentle vords and loving looks everywhere which rown the whole.

The men and boys, going in and out to their lowing or work in the barns, may never seem o notice these efforts, or even know themselves hat they notice them. But when they go out nto the world or grow old, these are the things hey will remember as "home," and which will e a dear and tender memory to them forever; ot the pigeons, or crops, or the amount of noney earned which seem so important to them ow.

There is no more energetic, intelligent or hrifty class than that of the American farmer. But he is apt to forget that "man does not live y bread alone," and to slight in his daily surroundings the beauty and refinement which is ecessary food for his better self.

God makes the crops grow, and fills the hills with useful coal and iron; but it is not without meaning that He covers them over with the glory of forest, wild vine, and blushing flower. He has surely "made everything beautiful in ts time" for a real purpose, which we should nterpret in our own lives and for our own improvement.

QUIET GIRLS.—The quiet girl is generally worth studying, and will frequently astonish those who pretend to understand her by rising to hights, when she is summoned thither, which are unapproachable to her complacent and courted critics. Yet it may happen that quiet girls of the best type may lack the wit, the adaptability to that with which they have no sympathy, the glibness, and that unlimited faith in themselves which must be possessed by those who desire to attract the notice of the more shallow portion of society, who believe in noisy girls. All quiet girls are not endowed with genius and the virtues, for some are simply fools that would be noisy enough if they could find anything to say. But we protest against the habit which prevails of slighting quiet girls and speaking ill of them before they have been fairly tried, and of paying sickening homage to the conceited chatterboxes of little moral sense and principle. While noisy damsels will often turn out to be gaudy impostors, many quiet ones will amply repay the time, trouble or love which any one may bestow upon them.

Young Folks' Column.

Science Club.—No. 3.

[All communications for this department should be addressed "RURAL PRESS Science Club," Berkeley, Cal.]

In Collecting Shells,

But few implements are required. There is no instrument like the dredge in point of general utility. It is much used for fishing oysters, and acts upon the bottom of the sea almost like a rake. A common rake, with close-set teeth, may be used to great advantage where the current is strong. A spoon of tin or iron perforated with small holes, with a rim about an inch in hight, is very useful in fishing for small river shells or for sifting fine sand on the seashore. A drag-net, with the mouth held open by a strong circle of wire and a stick the diameter of the aperture is useful in deep or muddy streams. One or two strong knives will be necessary for separating limpets, etc., from the rocks; a hammer and chisel for procuring such as perforate, and small tin boxes, and bags for containing the specimens.

We will forward upon application descriptions of dredges, dredging bags, rakes, anodonta nets, etc., to those who wish to enter the subject more deeply.

Wherever the rocks, mud or sand are pierced with round holes, the collector may be tolerably sure of finding bivalves, which may be procured by breaking the rock or digging deep into the sand. Sea-weed is frequently covered by minute shells; it should be carefully examined or placed in a vessel of fresh water, when they will fall to the bottom. Many of the smaller and microscopic shells are found at high water mark among the fine dross and drifted fragments of shells.

We have found water snails attached to dead leaves floating in Alameda and other creeks of California, and several species in the tules of the Sacramento and San Joaquin rivers. When the tules are burned, millions are exposed to view. We would advise our young readers to gather a quantity of them when these mollusks are alive, and clean them. There is considerable demand for them in Eastern exchanges.

Never save a dead shell that has been exposed to the friction of the waves and heat of the sun, with the apex and edges more or less broken, unless it is a rare one; and be careful to select such as have a brown epidermis upon the outside. Place the shells in warm water for a couple of hours; then the attachments of the animal will be loosened and they can be easily removed by means of a wire bent in the form of a hook.

Miss Annie Wilkinson, Howland Flat, Sierra county, has sent us a collection of many varieties of quartz. We have answered by letter. The easiest way to mark specimens is to write the number on the little piece of paper in which you wrap the specimen. Bits of paper will often fall off when you stick them on with gum-arabic.

J. A. Mendez, Pilot Hill, sends us for exchange a large box of chalcopyrite, rock with tourmaline crystals, iron ore, etc., and one exceptionally handsome specimen of amethystine quartz. We took them over to the State Mineralogist for determination. We would like to obtain in exchange, also, some roscoelite from El Dorado county.

Mrs. Leppettit has placed in our hands for examination some very fine crystals from Dutch Flat. All specimens of value we will return. Only a very small piece is necessary for identification, and we generally use the State Museums when searching for duplicates.

G. W. Michaels, Jr., Moro Bay, San Luis Obispo county, writes: "I am much pleased with the little book on shells, and find all the species we have at this point of the coast." We would like to see Prof. Keep's "Common Sea Shells of California" used in every school on the Pacific coast. It can be ordered from Bancroft's for 75 cents. Mr. Michaels is one of the best collectors on the coast. We are much delighted with the box he sent.

Philip S. Carlton, 19 Brush St., Oakland, offers coleoptera for those from other localities. Coast beetles particularly requested.

CHILDREN'S GAMES.—Now that our long winter evenings are here, with their bright fires, close drawn curtains, and freedom from farm work, our boys and girls will naturally need something to amuse and entertain them. Here is a game called "Cities" that will assist one in the study of geography: Let all be seated in a half-circle. The one at the head starts the name of a city beginning with A, as Atlanta, Augusta, etc., the next person calls another beginning with the same letter, and so on around the circle for three times. The head begins again with B, and so on until each latter of the alphabet is taken. One of the party should have a watch, and keep time, as only two seconds are allowed each one to think of a name. If any one repeats a city that has been named, he or she must pay a forfeit; also, if they take longer than the time agreed upon before naming a city. We imagine we can see the knitting of brows, and searching of pockets for forfeits when the letters Q and X are reached, as there are few cities beginning with those letters. If there is a large party each letter need go round but twice, but it should be decided before you begin.

Good Health.

DR. ALCOTT ON FRUIT AS FOOD.—The purest food is fruit, next the cereals, then the vegetables, which are properly the food of animals. If it is necessary that animal food should be eaten, or because you cannot leave off that diet at once, then take it in its milder form—in the egg or oyster. The change which would be wrought by such a regimen would be slow, as nature's changes are, but the results are not the less certain. Beautiful diet, beautiful form. All pure poets have abstained almost entirely from animal food. Especially does a minister take less meat when he has to write a sermon. The less meat the better sermon. Every animal feeder is sometimes a tyrant. If one would abate that fate, he must omit it entirely, but by a gradual process. Compare a table of the present day with that spread by the hands of Eve, in Paradise, to feed her ethereal guests. Then was gathered together a feast of the purest—a banquet of right. Scholars, if they would get their lessons, can do so in a great deal shorter time and know more by adopting a pure diet. The cause of ill-temper and want of harmony in women, and peevishness of infants, and difficulties in family and other relations might be easily intimated. We are composed of atoms, and every atom must be musical and tremulous with harmony to give the body that harmony that is musical. The consent of our atoms, the absolute consent of every atom to every other atom—that is harmony. Every passion leaves its impress, we know not how long. Every atom sympathizes with every other atom.—*From one of Bronson Alcott's Conversations.*

DIET FOR NIGHT WORKERS.—For night workers the best dietic plan includes a hearty breakfast when they rise, which is generally from 12 to 3 o'clock; some out-door exercise and relaxation should precede a good dinner, partaken between 6 and 9 o'clock at night, before beginning work. If the work is to continue until 4 or 5 o'clock in the morning, a light but nutritious repast should be eaten shortly after midnight, in order to fortify the system for labor during the hours immediately following, when the vital powers are most enfeebled. When the work is done, and before retiring, a very simple lunch should be taken in the form of good hot broth or beef tea, or a glass of light wine and a couple of crackers. This will generally insure sleep by withdrawing the blood from the brain, where it has been concentrated by mental effort. In ordinary cases of sleeplessness, not confirmed by long-continued habit, a light meal of this kind will generally prove a remedy. The substitution of phosphatic or so-called brain and nerve foods for a well-chosen regular diet is much to be reprobated; however excellent these preparations may be as adjuncts, a man might as well expect to work indefinitely upon the stimulation of alcohol as to live upon them without the necessary supplement of ordinary nutritious diet. By attention to these details, and by securing sufficient sleep, night workers can preserve their health under ordinary circumstances.—*Juliet Corson, in New York Times.*

FLESH WORMS ON THE FACE.—The black points, flesh worms, technically termed comedones, which are found in the face, and especially near the nostrils, are not at all produced by the accumulation of the particles of dirt or dust, as has generally been believed, but by pigmentary matter which is soluble in acid. It is known, in fact, that black comedones which accompany and often appear not only on persons exposed to dust, or rather careless of their person, but also on chlorotic young girls who live in good circumstances. Besides, observation shows that the discoloration not only exists on the surface of old comedones, but descends always to the lower parts. Accepting this fact, Unna has used successfully acids in the treatment of comedones. He generally prescribes: Kaolin, 4 parts; glycerine, 3 parts; acetic acid, 2 parts, with or without the addition of a small quantity of some ethereal oil. With this pomade he covers the parts affected in the evening, and if need be during the day. After several days all the comedones can be easily expressed, most of them even come out by washing the parts with pumicestone soap. The same results can be obtained by bandaging the parts affected for a long time with vinegar, lemon juice, or diluted hodrochloric acid. The author concludes by saying that the acids act like cosmetics, as they transform the black color into a brown and yellow shade and destroy it gradually altogether; they produce a quicker desquamation of the horny bed which interrupts the exit of the comedones and brings to the surface the glandular openings.—*Archives de Virchow.*

A HORSE WITH THE SMALL-POX.—A horse in St. Louis is recovering from small-pox. The horse was taken sick a month ago, and in a short time large boils made their appearance all over his body, and the hair fell out, until the animal looked as bare of hirsute adornment as Barnum's famous hairless horse. The formation of the sores and their development were identical with the development of small-pox cases. The animal suffered a great deal, and is now only convalescent, the postules passing out of the flesh and the hair beginning to sprout.

Domestic Economy.

Our Eating.

EDITORS PRESS:—Fearing that some people whose names I will not mention, have flattered themselves that Aunt Jerusha has been effectually silenced, I hereby proceed to disabuse them of the belief by clearing my conscience of another domestic evil; and that is, "Our Eating."

It is a monstrous subject, one which controls most of the physical weal or woe of every human being, and until parents fully grasp and comprehend the importance of the subject, and submit to being governed by their intelligence instead of their appetites, the woe will greatly predominate.

The subject is not new. It has been scientifically, and therefore, to the masses, feebly set forth since Adam and Eve made apple-sauce in the first garden; but until some mighty power invades the sanctity of every kitchen with warning words of fire, the evil will go on. How often Miss Smith and I have talked it all over, but she says that until men's appetites change no reform can be effected.

Talk about woman's rights, dress reforms, temperance, meetin' revivals, and all the other good things, why, they are all necessary to the well-being of mankind. But who shall say that the necessity of all these does not originate in a foul stomach?

Mothers, do you realize that you are destroying your children, both body and soul, by stuffing them three times a day with pies, cakes and sweetmeats? See that trembling hand and nervous condition of your little one; that's tea or coffee! See the pimples on the face; that's grease or acid! Note the shrunken body and emaciated limbs; that's starvation, or hot bread and condiments! Hear the moans and mark the restlessness in sleep; that's stuffing with trash which stimulates the appetite to excessive indulgence and does not nourish!

Do you know that you have been deliberately destroying your dear ones for ages, just because your own tastes have become perverted to the worst form of dissipation? And why? Simply because it's the fashion!

Housekeepers are ashamed to be caught eating a plain meal, and will invariably apologize for a "picked up" dinner. Better apologize for the injury you do your family.

Men grumble at house-cleaning because there is no time to prepare the usual variety of body-destroying trash. Children early learn to cry for pie and cake when they should eat meat, bread and milk.

I really believe that such dissipation results in more evil than "hard drinking," because it is more universal. I know of many men who will not sit down to dinner unless there is pie or cake, or both, upon the table. What slaves it makes of the women! forever baking, brewing, cooking, stewing. One poor, feeble, over-worked woman said to me: "I am obliged to bake every day. My husband and the boys must have something nice to eat." And to look at them one would suppose mouthfuls of decayed teeth another necessity!

It is expensive as well as sinfully injurious. Thousands of Americans deprive themselves of every mental advantage, are without homes, forever moving here and there because the rents cannot be paid, until some unusually good dinner carries them to a cheap burial, just because their daily earnings find insecure investments in the contents of the market basket.

Women of California, let's get up a revival! A revival which shall shake the very foundations of our homes, and do our own preaching as well as practicing; let's make no more pies; let's burn up our rich cake recipes and give fruit—our abundant luscious fruit—instead. Let's eat something which will nourish these tired and growing bodies; let's no longer manipulate (that's a pretty big word, but some of you will know by experience what it means) our vegetables, so that the little ones will not know what they are eating; but let's give our households plenty of good, plain, wholesome food, carefully prepared; cooked "to a turn," served neatly, not too near together, and we shall soon see an improvement in the health and, therefore, in spirits, in household management, in business, and in all social and domestic relations; remembering we are responsible to God for the talents he has entrusted to our keeping and use, and that surely He will call for a day of reckoning. AUNT JERUSHA.

Idlewild, Santa Cruz Co.

CRYSTAL CAKE.—Cream two small cups of sugar with one of butter and two well-beaten eggs; then add two cups of flour and one-half cup of corn starch, two teaspoonfuls of cream-tartar and one of soda; flavor with lemon; make a nice dough with what milk is required; break off in balls about the size of a small egg; dip them in a beaten egg and turn them over in granulated sugar. Place on buttered pans, giving plenty of room, and bake to a nice brown.—A. E. T.

LIGHTING FIRES.—To avoid the disagreeable smoke and gas when a fire is lighted on a damp day, light a handful of paper or dry shavings on top of the coal before the fire is kindled. This produces a rapid draught, carrying off everything offensive.

PACIFIC RURAL PRESS

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TABLE OF CONTENTS.

GENERAL EDITORIALS.—Agricultural Banks; A Fine Horse Breeding Establishment; Southern California Citrus Fairs, 113. The Week. The Apricot Elsewhere, 120. Centrifugal Cream Separation; Ensilage, 121.
ILLUSTRATIONS.—A View of Oaklawn Farm, 113; Sectional View of Danish Centrifugal Cream Separator, 121.
THE STABLE.—Horse Breeding in California, 114.
THE FIELD.—Bluestoning Once More, 114-115. Smut and Bluestone, 115
THE PUBLIC LANDS.—Brush-Fence Land Titles, 115.
POULTRY YARD.—Poultry Notes, 115.
PATRONS OF HUSBANDRY.—Grain Warehouses; Grange Elections; Grange Notes, 116.
AGRICULTURAL NOTES, from the various Counties of California, 116.
HOME CIRCLE.—Old Farmer John (poetry); From Santa Cruz to Stockton; "Clear Grit;" Worn (poetry); Do Our Women Dress Warm Enough? 118. Chaff; Beauty in Our Homes; Quiet Girls, 119.
YOUNG FOLKS' COLUMN.—Science Club; Children's Games, 119.
GOOD HEALTH.—Dr. Alcott on Fruit as Food; Diet for Night Workers; Flesh Worms on the Face; A Horse with the Small-Pox, 119.
DOMESTIC ECONOMY.—Our Eating; Crystal Cake, 119.
QUERIES AND REPLIES.—Running Lines for Irrigation Ditches; Cultivation of Walnut Orchards, 120.
ENTOMOLOGICAL.—Disinfecting Fruit; Tobacco Tea for Insects. Home-made Lye for Insects, 120.
NEWS IN BRIEF on page 117 and other pages.

Business Announcements.

The Victor Mower, Judson Horse-Nail Co., S. F.
Santa Rosa Nursery, Luther Burbank, Prop'r.
Sheep Ranch For Sale, R. Stickney, Little River, Cal.
Beet Seed, Prof. W. C. Damon, Napa, Cal.
Special Stockholders' Meeting, Grangers' Business Ass'n.
Jacks For Sale, A. M. & E. W. Crow, Crow's Landing, Cal.
San Jose Property For Sale or Exchange.
The Sugar Handbook, Blymyer Man'fg Co., Cincinnati, O.
Fruit and Ornamental Trees, Ellwanger & Barry.
Pomona Nursery, Wm. Parry, Parry P. O., N. J.
Chromo Cards, Caxton Printing Co., Northford, Ct.
Chromo Cards, Wise & Co., Clintonville, Ct.

The Week.

There has been a general rain, and all parts of the State have enjoyed it in varying degrees. In some districts it has removed all doubts, and has been sufficient to carry along the growth until the spring rains, even if no more should come sooner. There is now a prospect of a speedy renewal of the storms; and though the year may make the yield light in some parts, there is every prospect of a high aggregate in produce of all kinds.

Before another RURAL is prepared, Washington's birthday will have come and gone. There is now abundant time to prepare and profit by the holiday. The observance of the day is a tribute to that which is high and noble in human life and aspirations as embodied in the character of Washington. In these days of selfish ambition and insatiate greed it is well for the people to turn to the contemplation of the pure patriotism and lofty disinterestedness of Washington. Let these be the themes for thought and conversation in casual meetings and in formal celebrations. Wherever practicable in city and country, there should be assemblages of people at convenient places, at which the lessons of the life of Washington should be emphasized. The people cannot afford to lose sight of his nobility, his truth, his virtue, his love of country and of the rights of mankind. Next Wednesday, Feb. 22d, will be the anniversary of his birth. Let the day be celebrated!

The Apricot Elsewhere.

Those who are profiting by the popularity of California apricots as sent abroad by our canners, will be interested in all testimony that the demand is likely to prove enduring, not only because of the excellent quality of the fruit grown here, but because California enjoys such exceptional adaptations to the growth of the fruit. It is probably true, that nowhere else in the world, so far as yet tried, has the apricot found so congenial a home as in California. Even in the favored districts of southern Europe, the fruit is inferior and the trees less thrifty; and in regions where the fruit is grown by the shelter of walls, there can be nothing like competition with our splendid standard trees, as beautiful, vigorous specimens of fruit-tree growth as one ever saw in orchards. The apricot in California has evidently a great and prosperous future.

But it is chiefly of the apricot elsewhere that we intended to write and to give our readers an idea of the hardship under which the tree labors in some other climes. In the north of England and in many parts of Scotland during the last seven years, canker or decay has killed, or partly killed, a great number of apricot trees. All gardeners know by experience the indications that tell too plainly that their trees are doomed to die piecemeal. During a visit which I (says a special correspondent of the London *Garden*) made last autumn to Cleveland, in Yorkshire, nothing surprised me so much as the unhealthy state of the apricot trees. Thirty years ago in that district canker or decay in the apricot was rarely seen. On the walls of farm houses and cottages apricot trees had grown for 50 years and rarely missed a crop. So abundant was the crop that many cottagers paid their rent from the yearly produce of one tree. In 1851 I planted one apricot tree on the front wall of five cottages belonging to my employers. The cottages were all in a row, and it was a matter of emulation amongst their tenants to see whose tree would first cover the wall. One succeeded long before the others, through giving continuous supplies of horse manure, gathered in lanes. In passing these cottages a few years ago, I was astonished to see that none of the trees were alive; on inquiry I was told that the tree just alluded to was the first to die, bit by bit. Up to within a few years, the trees were healthy and bore fine crops, but now both old and young trees are dead. In no part of England or Scotland does the apricot thrive better than in Cleveland, a circumstance doubtless attributable to the soil and subsoil of the district, helped by a climate modified by south winds from the sea, and yet in this favored district the trees seemed doomed to destruction.

It is evident that one must attribute the death and decay so prevalent among apricot trees in the north of England to climatal causes. Few trees were really killed by the severe frost of the last three winters. There is no doubt that altogether we must trace the decay in the apricot trees to the cycle of unprecedented years through which England is passing. Were it only the severity of winter frosts with which they had to contend, they have means available for protecting trees from their effects; but it is into springs, summers and autumns combined to which the effects described must be traced. Take the last autumn, for instance; since the beginning of August they have hardly had really one dry day, and the sun has seldom made its appearance. The consequence is that the fine crops of apricots that used to adorn the walls of many gardens have not been seen for several years back.

This failure of the apricot in a country where it is so well known and highly esteemed will open the way for much of our canned apricots. The conditions described above as fatal to trees in England, are just the reverse of those which prevail in this State. Here the unbroken sunshine, the warm, dry air, and other natural conditions give the tree great vigor and productiveness. And there is evidence that the tree will be long-lived. If it could stand for 50 years the artificial treatment of wall training and heavy manuring, and bear such large crops of fruit, what may we count upon here in California, where the tree is untrammeled in its growth and surrounded by the kindest influences. Indeed, it does appear that the owner of a good apricot orchard is provided for for the term of his natural life, and his children well endowed.

A HOUSETOP ORCHARD.—We have land enough in California, so that we are not forced to have our orchards on housetops, but it is an interesting fact that M. Lecroy, who lives in the Rue Washington, Paris, has constructed on the top of his five-storied house a marvelous orchard, which is built up on a terrace. The different fruit trees which M. Lecroy is cultivating are planted in large boxes, containing the best soil. There are as many as 18 different varieties of pears, and 40 different samples of these varieties, some trained on espaliers, others in the form of shrubs. These trees bear abundant fruit every year, and the fruit is of a size and quality seldom seen in ordinary orchards. The proprietor owes his complete immunity from any pest, fungus or insect to the constant syringing with tobacco juice.

QUERIES AND REPLIES.

Running Lines for Irrigation Ditches.

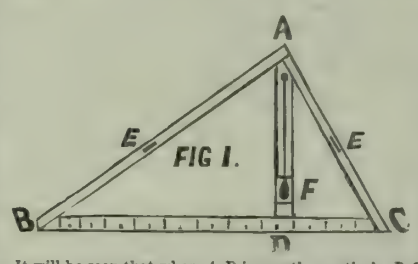
EDITORS PRESS:—How do we find out how far we have to go up a creek in order to bring water on a given piece of land? What kind of a level is used for that purpose, and how is it made? How much fall is it necessary for a ditch to have?—DR. RICHARD SCHULZ, Pinckney, Shasta county.

EDITORS PRESS:—The fall required by a ditch or canal depends upon the amount of water which it is desired that it should discharge, and upon the width and depth with which it is intended that the water should flow. It may also be dependent upon the character of the soil in which the ditch is to be constructed, and upon the peculiarities of the water itself. A strong current in soft soil may cause mischievous erosions. Water carrying much sediment must never be allowed to move sluggishly as clear water sometimes may. It is best to state the requirements to a competent engineer and act on his suggestion.

Having decided what fall to give the ditch, the nearest point at which water can be taken out of a creek to be brought to a certain piece of land is found by commencing with the point at which the water is to be delivered (generally the highest point of the land to be irrigated) and running a line up stream which has the inclination intended for the ditch.

To stake out this line when no special hindrances are in the way, use the leveling instrument described in the query column of the RURAL PRESS of Oct. 8, 1881, as follows:

With such lumber as may be at hand, a triangle is constructed as indicated in the sketch. The three pieces, *A B*, *B C*, and *C A*, are made fast to each other at *A*, *B* and *C*. The board, *A D*, is fastened to the triangle at right angles to *B C*. Near *A*, on the board, *A D*, a plumb-line is made fast. The plumb, like a mason's plumb, hangs in a hole at *F*, so that when *A D* is vertical, the string hangs very near the surface of the board, *A D*.



It will be seen that when *A D* is exactly vertical, *B C* is exactly horizontal, if the angles at *D* are true right angles. An ordinary carpenter's square used in the construction of the apparatus will insure sufficient accuracy in the position of *A D*.

In marking on the board, *A D*, however, the line in which the string of the plumb will hang when *B C* is exactly horizontal, more care is required. Two pegs are driven, as far apart as *B* and *C*, for these points to rest on. The highest one is driven into the ground until the plumb-line follows about the center line of the board, *A D*. Having marked this position of the plumb-line, the triangle is reversed so that the end, B, rests on the peg where before we had the end, *C*, and *vice versa*. Should the plumb-line be in a position at variance with the first one marked on the board, then the correct position, for the *B C* horizontal, will be exactly in the middle between the two found by the aid of the two pegs.

It will frequently be found convenient to have a scale of feet marked off on *B C*. The dimensions of the triangle may be about as follows: *B C*, 12 ft. long; *A D*, 5 or 6 ft.; and *C D*, 3 or 4 ft. Holes in the pieces *A B* and *C A* at *E*, *E*, or handles, will make the triangle convenient to carry. Only two men are necessary in using it.

To use this instrument for locating the line of the ditch, calculate the amount which your line should rise between each two pegs. Drive a peg at the starting point with its top say six inches from the general surface of the ground. Hold one end of the leveling apparatus above this peg by exactly that amount which the line rises per each instrument length (*B C*, in the October number referred to) and swing the other end around into the direction from which the ditch is to come until when level, it is just six inches above the ground. Drive a peg here, which will, like the first, be six inches high and proceed as before. Care should be taken to give the top of each peg exactly the correct elevation. The level must be horizontal when resting on any peg and raised exactly that amount which the line rises per level length, above the preceding peg. It will be found convenient to use a carefully prepared block to hold on the top of each stake at the rear end of the level instead of trusting to measurement each time.—C. E. GRUNSKY, Office State Engineer, Sacramento.

Cultivation of Walnut Orchards.

EDITORS PRESS:—I would like to inquire through the columns of the PACIFIC RURAL the opinion of Felix Gillet, and others, in regard to deep cultivation for walnut orchards, or, in other words, is it beneficial or otherwise to destroy the fiber roots near the surface.—F. H. BARNARD, Carpenteria, Cal.

EDITORS PRESS:—If your correspondent will bear in mind that the walnut is very little particular on the nature of the soil, as long as it is not too dry or too wet in the extreme, he will come to the conclusion that "deep cultivation," if not injurious to the tree, is not necessary at all. Ordinary cultivation, that is, stirring up of the surface and getting rid of the weeds, is all that ought to be required of a walnut orchard. Walnut roots run to a great distance from the tree and rather near the surface, and I do not see what would be gained by chopping off those roots and cultivating the ground deep. Does your correspondent expect that way to make his trees bear better? In that case, he would certainly be mistaken. Deep cultivation does not render a variety more prolific, but may help to obtain larger fruit, which will be obtained any how through ordinary tilling of the soil. On the other, hand if, in cultivating the ground, roots too near the surface are destroyed, no harm is done to the tree; the walnut having lots of lateral roots and from one to three tap roots besides. But by going systematically to work to destroy those surface roots, I cannot see what would be gained by it. So I am of the opinion that deep cultivation in a walnut orchard, as well as in a vineyard, would rather be injurious than beneficial.—FELIX GILLET, Nevada City.

The Growth of Ramie.

EDITORS PRESS:—The RURAL of Feb. 11th asks for information on ramie culture. Six years ago I had in my possession ramie bulbs sufficient to plant out 100 acres of land; had experimented sufficiently with the plant to offer to one C. C. Coleman (of San Francisco), who claimed to have perfected machinery to handle ramie, that I would guarantee to deliver to his machine at a given place in Neitos (of Los Angeles county), the crude ramie, he guaranteeing to handle the crop, as per his claim of the ability of said machinery. Voluminous correspondence is all that came of the matter. I turned my bulbs to a big pasture, as I did not wish to plant land to a crop that would cost so much to eradicate, on an uncertainty. Unless you have grubbed up an old ramie plant once, you don't know anything about grubbing. And after you have grubbed, the ramie will then take any crop, almost, you put the land to afterwards, that is, if you put the ramie in soil adapted to it—first-class alluvial soil. Just take your grub hoe and try your hand on a clump of old nettle; then multiply that by six, and you will have how ramie takes to the Neitos soil. Land that will grow a good nettle (a cousin to ramie), will grow ramie. The malva, too, is something of the nature of the ramie. Ramie don't stand heat and drouth—that is to give a heavy crop (and small growth is worthless.) Irrigation is necessary—particularly on account of gophers—as the root is edible. My little children used to dig after the roots to chew, just as we used to the slippery elm, when we were boys—long, long ago.—GEO. KAY MILLER, Neitos, Los Angeles Co.

Is it Dropsy?

EDITORS PRESS:—A. B. Dixon, of North Temescal, Alameda county, recently killed an apparently fat hen, expecting it to be a nice pot fowl. Upon dressing it was found to contain at least one quart of water, and to be a very poor chicken. Who can give light on the disease and its remedy?—D., Oakland.

ENTOMOLOGICAL.

Disinfecting Fruit.

EDITORS PRESS:—Noticing your comments on disinfection of fruits, in last week's issue of the RURAL PRESS, it is certainly desirable and necessary that an insecticide should be used to disinfect oranges and other fruits, which has not the offensive smell that the recommended whale-oil soap possesses. Did it not occur to you that the *Pyrethrum cinerariæsolium* would be just the thing. A decoction or tea, made with hot water and the unexpanded flowers of that plant has been tried and recommended by Prof. Hilgard, of the University, as desirable, as after its use there is neither smell or trace of the insecticide, nor insects, larvæ or pupæ, to be found on the fruit. Every fruit grower can grow the plants of this Pyrethrum on his own place, and gather a crop of flowers this season, as such plants which will bloom this coming season can be found at Trumbull's seed store, in this city, whose advertisement is in the columns of the PRESS. If any wish to raise plants from seed they will have to wait till next year, because the plants do not blossom the first year. —ED. WOLLEB, Fruit Vale.

Tobacco Tea for Insects.

EDITORS PRESS:—I have had a talk with an orchardist who was washing his trees with a decoction of tobacco. He claims that it will kill the scale bug and other insects more promptly and surely than either lye or coal oil, and will not hurt the trees, buds or leaves. He found the home-raised natural leaf better than plug or cured tobacco. I could get no definite idea of the degree of strength required, but we have bugs enough, so each man can experiment for himself. If tobacco will kill all small animal life and not damage vegetable life, it will surely be a valuable aid. Will some of your experimenting readers try planting tobacco seed or plants about the roots of trees, then put a band to catch codlin moths above the reach of the tobacco plants, and report its effect on the moth, scale bug and woolly aphis.—C. A. W., San Jose.

The effect of a tobacco decoction has been set forth fully in the RURAL, notably in the experience of Ellwood Cooper, in our journal last fall. The green tobacco plant, so far as we have observed, is not especially obnoxious to insects—the tobacco caterpillar is a healthy villain. The tobacco plant is a great consumer of fertility. We imagine its growth in the roots of a tree would rob the tree considerably.

Home-made Lye for Insects.

EDITORS PRESS:—Good strong lye leached from good wood ashes, with a little lime in the bottom of the leach, is better for killing moss and insects on trees than any potash or other alkali. Good home-made soft soap made from such lye is better for such purposes than whale-oil or any other kind of soap. I have used whale-oil soap that had been so adulterated it was of little use. Bones had been ground, dissolved and mixed with it.—S. T. WELLS, Saticoy, Cal.

A NEW iron steamship for the Pacific Coast Steamship Co. has been launched at Philadelphia. She will be the finest specimen of naval architecture on the coast.

Centrifugal Cream Separation.

Some months ago we gave an engraving and description of a machine invented in Europe by Laval, for separating the cream from the milk by centrifugal motion. There were a number of these machines brought into use in England and on the continent, and one was set up in Massachusetts. The objection to the machine was its limited capacity and the very high rate of speed at which it had to be run—something like 5,000 to 6,000 revolutions per minute. At the English Dairy Show last fall there was a Danish machine shown in connection with the Laval, and exhibited a marked superiority over it. In fact, it seemed to possess a working capacity and feasibility of operation which seem to indicate that centrifugal separation may indeed be available for all dairies of large size. We hear that the Danish machine has already been introduced into Chile, and one of our large dairy managers is now in correspondence with the English manufacturers with the view of bringing one of the new machines to California.

In the consideration of the centrifugal cream separation the advantages of the new over the old system come in question. Of course there will be a great saving in that there will be no setting of milk and no arrangements therefor. The milk, as soon as drawn from the cow, is put through the centrifugal, and an hour or so after milking the dairyman has his cream collected and a stock of sweet, fresh skim-milk for stock feeding or other uses. All spoiling of milk by standing in hot weather is avoided and the whole process of butter making is so shortened that before a following milking the product of a foregoing one is put into commercial form and may be on its way to the market. There are many advantages in such a system of working, which will occur to the minds of all dairymen.

More than this it has been shown by most searching experiments in Europe, that more cream is to be had from the milk than by any of the old methods of separation. In an address before the American Agricultural Association, two weeks ago, Prof. X. A. Willard reviewed the recent investigations of M. Fjord, of Copenhagen, Denmark. M. Fjord commenced a series of experiments for the purpose of determining the relative merits of three different methods in obtaining cream and butter from equal quantities of milk of the same quality taken from one common sample, and the Danish government with commendable liberality appropriated several thousand dollars to the object. These experiments were continued through the entire year, a number of trials being made each month. The methods employed were the German centrifuge of Lafelt and an improved Danish centrifuge on the one hand, and the common shallow pan system of setting milk on the other hand. The milk was taken from a dairy of 200 cows, and after being thoroughly mixed, 600 lbs. were weighed for each experiment. This quantity was divided into three parts of 200 lbs. each; one part being treated with the centrifuge, one part set on the Swartz plan in ice water, and the third part of 200 lbs. being set shallow in common flat pans. The milk which was set in ice water was placed in pails having a capacity of 50 lbs. each, the milk having an average depth of 16 inches, and it remained in ice water for the space of 34 hours before skimming. The regular skimming time for the shallow pans was fixed at 34 hours after the milk had been set, though this was regulated somewhat by the condition of the milk from the end of May to the middle of September, when the milk was allowed to stand only from 22 to 30 hours before skimming.

Without going into all the details of M. Fjord's experiments, showing the careful manner in which they were conducted, the following table, he said, would show the peculiar vagaries of the milk in the yielding of butter by the three systems:

	Pounds of Milk for 1 lb. of Butter.		
	Centrifuge.	Ice 34 Hours.	Shallow Pans.
1879.			
May	27.6	30.0	30.4
June	26.4	28.3	28.8
July	26.8	28.0	30.5
August	28.5	27.7	31.7
September	26.6	27.6	30.9
October	24.3	28.7	27.9
November	24.6	31.5	28.4
December	24.2	28.5	27.4
1880.			
January	25.8	27.8	28.0
February	26.4	27.4	27.8
March	27.8	28.8	29.5
April	28.3	29.4	30.1

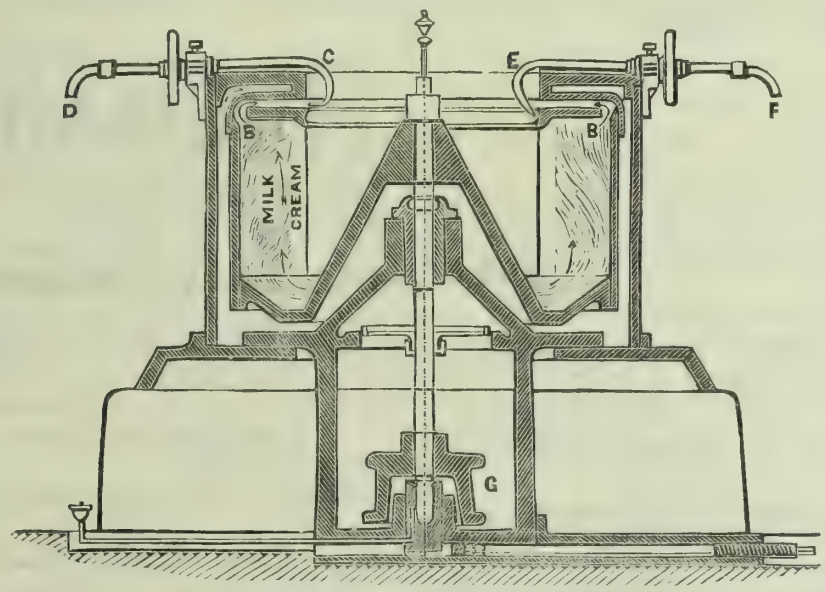
Referring to the figures in the preceding table it will be seen that the superiority of the centrifuge over both the ice and pan system, is especially noticeable during October, November and December, while during parts of July and August it falls below the ice method.

The ice method proves superior to the shallow pan during every month in the year, except in October, November, and part of December, its greatest superiority being in July and August. In October and November it falls below the pan system. The experiments were all checked by chemical analysis which exhibited a close argument with results obtained. The amount of fat left in 100 lbs. skimmed milk resulting from the centrifugal trials, was according to analysis, between 0.25-100 and 0.44-100 lbs. By the ice trials, the 100 lbs. skimmed milk yielded by analysis between 0.34-100 and 1.54-100 lbs., this last extreme being for November milk, when the smallest quantity of butter was obtained. By the shallow pan system the amount of fat in the skimmed milk ranged between 0.40-100 and 1.03-100 lbs.

The average for the year, or out of 12 simultaneous trials distributed over the whole year, was that the skimmed milk on an analysis yielded an amount of fat as follows: By centrifuge, 0.35-100 lbs.; ice method, 0.62-100 lbs.; and by shallow pans 0.68-100 lbs. The superiority of the ice over the pan system is not alone in yielding the greatest quantity of butter, but consists in its easier operation and more certain results in giving a first-class product.

Thus it appears that the shallow pan system which is so general in California is the least favorable to a large yield of butter of the three methods tested. And yet between shallow pans and setting in ice water, there is but Hobson's choice for California, for over the greater part of the State the ice method of milk setting is out of the question, unless artificial ice processes can be made much simpler and cheaper than at present. Possibly the centrifuge may come in to free us from the wasteful pan system and compensate us for the luxury (?) we lose in not having an ice crop to gather every winter. The drawback now is probably that centrifuges are expensive machines, which only rich dairymen with large herds can afford to use, but it is quite likely that a system which possesses such great advantages may be reduced to a cheaper basis so that a farm dairy may have its centrifugal as well as its churn.

In view of this device becoming useful here, we have reproduced a sectional engraving of the Danish machine from one of our English exchanges which will give our readers an idea of its manner of operation. The percentage of cream to be removed can be regulated with the greatest exactness, and this separator runs at only 2,000 revolutions per minute. The whole milk is run into the separator from a tank or



SECTIONAL VIEW OF DANISH CENTRIFUGAL CREAM SEPARATOR.

container. The skimmed milk escapes at B, and is drawn off by the beak and tube, C and D. The cream, when gathered in sufficient thickness, is drawn off by the beak, E, and tube, F. If thin cream be required, the cream is drawn off continuously, but if thick cream is required, the beak, E, is put into work when desired; that is to say, when the wall of cream is seen to be of sufficient thickness. In this power over the quality of the cream consists one of the most valuable points in this machine. The working of the machine is admirable. Looking into the top of the whirling cylinder, the milk and cream are seen standing up in two distinct white walls around the vessel, and a couple of brass tubes dipping in run off the two products as they collect inside.

County Horticultural Officers.—There are now 20 counties with horticultural boards, organized under the recent laws, to prevent the spread of noxious insects, and two more counties are now on the point of organization. The work is proceeding better than the most sanguine hoped, and most energetic work in tree washing is now being prosecuted in the infested districts. The result will be an increased supply of clean fruit next summer. The latest counties reporting are as follows, with the commissioners named: Kern county, I. B. Rumford, Oscar Zschokke, Dr. D. G. McLean; San Benito county, D. A. Dryden, John A. McCrosky and Wm. Buck; Marin county has selected F. DeLong and C. Stearns. Another member will be agreed upon hereafter.

Distributing Whitefish.—E. R. Woodbury, superintendent of the fish hatchery at San Leandro, forwarded 100,000 whitefish to Clear lake, on Thursday last. This is the second shipment of 100,000 whitefish to that place this season. A shipment of 100,000 was made about two weeks ago to Downer lake and Lake Tahoe, and about the same time, 100,000 were sent to Monterey, to be placed in the creeks and waters of that county.

Ensilage.

The course of this method of fodder preservation has not run smoothly in California, as the pioneer experiment at Hollister came to a somewhat unsatisfactory termination last fall, although the experience of 1880 was quite satisfactory. We are not possessed of definite information of the results of 1881 and the cause thereof, but we infer from such fragmentary information as has come to us that there must have been some defect in the manner or materials as the effect of feeding was rather disastrous. We wish some of our Hollister readers would give us the facts of the case.

A large dairyman in Sonoma county informed us the other day, that he proposed to experiment this summer with ensilaging some of the splendid growth of native clover. There are several species of annual clovers which grow luxuriantly there, one with a large, white blossom, reaching a hight of two to three ft., and producing an immense weight of feed per acre. He proposes to test ensilaging without the construction of a permanent silo at first, using a pit in a dry location where a shed has been built which will protect the pit from the heat of the summer sun. We shall be interested to learn the results of the experiment, and now as the matter is under consideration and others may like to experiment, we propose to collate some information with regard to successful experience elsewhere in the use of trenches or pits, which can be easily excavated.

There was an "ensilage congress" held in New York city two weeks ago, at which California was represented in the person of A. Mailliard, of Marin county, as we learn from reports in our Eastern exchanges. There were prolonged discussions of various matters pertaining to ensilage, and among other practices the use of simple trenches or pits was made prominent. This was nothing new, for the use of simple excavations in the earth was among the earliest things advocated. In the Rural of March 16, 1878, we gave engravings and an essay by Mr. Felix Gillett, describing the simple trench system as having long prevailed in France.

Of late, however, there has been a tendency toward expensive structures of stone, or brick, or cement, and many have been restrained from experimenting because of the expense of such constructions. It will be of use to many to remember that an ensilage experiment can really be tried very cheaply. At the Ensilage Congress to which we have alluded, Chairman Morris said that ensilage was in fact a very simple thing, but farmers seemed to think there was something mysterious about it because the words ensilage and silos were new to them. It was in fact a very simple thing. He made his silos by digging trenches 11 ft. deep, seven ft. wide at the bottom, and eight ft. wide at the top. He did not line them at all. The water did not come in. When he had the pit filled with a crop he put a covering of felt on it and covered it with dirt as a weight. He used salt at first to put on the crop as it went into the pit, but he found that was unnecessary. The soil was marly clay. He did not think there was any necessity for building a wall of stone and cementing the pits, as some did. He found his trenches to answer all purposes and should build more in that way. As for brick walls, he said everybody knew they could not be made either air-tight or water-tight. He did not find that the rain penetrated his covering of earth and felt. He found no difficulty in moving his cutter from one silo to another. The average shrinkage was one-third the bulk.

The delegates discussed the various methods of pressing down the crop after the pit was filled. Some used boards, covered with stones. Some used cloth, covered with earth. One man used barrels of vinegar. Another used screws but could not get his men to keep them tight, the crop packed so rapidly.

Mr. C. W. Mills, of Pompton, N. J., gave a long statement, and submitted to a protracted cross-questioning on the subject of an independent discovery which he claims to have made in 1879, which makes the process of ensilage cheaper than before. He abolishes altogether the expensive pits built of stone or brick and lined with cement, the cost of which has frightened many farmers. He claims that all that is necessary is that there shall be a slight wooden frame, not necessarily air-tight, to prevent the spread of the ensilage crop when the weight is placed on top. He has built silos and used them, but says he will never build another, because they are unnecessary. He estimates that he puts on about 300 lbs. pressure to the square ft. This is applied on the top of blocks of wood about four ft. square. When he wants to take out his crop he takes off one block and cuts out that much in a solid chunk. He says the pressure is sufficient to keep the air out of the sides of the crop, and that the product is kept even better than in the silos, where it is too often bruised and battered until the succulent juices depart and are replaced by useless and harmful bubbles of air. His theory is that of uniform and continuous pressure. He said he could sustain 80 milking animals six weeks on the product of five acres. His plan was to get it into the silos quickly and cover it immediately.

Farmers should understand that it is not necessarily an expensive process. While a masonry cement-lined cellar is the most permanent and cheapest in the long run, it is better to make earthen pits in the soil than to wait longer for money or time to build more expensively. For earthen pits, the only requirement is dryness, by thorough drainage, to be at least 11 ft. wide at surface and half the width at bottom. With oxen, plow and scraper, such a trench can be made in a few hours. Stand rye and straw about the sides, and pack the cut fodder closely into it by rolling with field roller or trampling with cattle upon the boards and earth covered over it. In those places where the nature of the soil is not adapted to dry pits, wooden bins can be used. Sufficient strength to bear the pressure is the most important thing. It is not necessary to be perfectly air-tight. The packed ensilage excludes the air from the sides as well as from the top, and only the small surface actually exposed at any crack or knot-hole will be molded. The descending weighted cover bearing upon a perpendicular mass is the essence of this discovery, and, with the exclusion of water, is all that is absolutely required to preserve fodder, since the prevention of air and water from penetrating beyond the surface is thus effected. Corn stalks must be the cheapest to raise of any kind of green food. The stalks must be cut. This is an expense that cannot be avoided. Unless they are packed close, as they only can be by cutting fine, they cannot be taken from the silo as wanted without a larger part of them being spoiled while being used. Different lengths have been used here—$\frac{3}{8}$ to $1\frac{1}{8}$ inch. The heavier the stalk the finer it should be cut; $\frac{3}{8}$ inch will do for any crop. Those who have ensilaged clover last year without cutting found it better than hay, but not so good as fine cut

The foregoing is an abstract of the leading points in favor of a simple ensilage system as brought out by Eastern experience last season. It may point the way to some more California experimenting.

The "Rural Press" in Missouri.

Editors Press:—In again renewing my subscription it affords me pleasure to congratulate not only the editors on the excellence of the Rural Press in comparing favorably with the other good journals I take, in the value of the articles it contains and the good judgment displayed in excluding from its columns the discussion of subjects of doubtful propriety and the exclusion of articles foreign to its aims and which tend to wound the feelings of any of its many readers, but I desire also to express to the publishers my satisfaction with its beautiful typographical appearance. It always enhances the pleasure a person experiences in reading an interesting article to have it in good ink, from clean, clear type, on good white paper.—Jos. S. McAleer, St. Joseph, Mo.

Horticultural Society Meeting.—The State Horticultural Society has a diversified and attractive programme for its next meeting, which will be held at the Academy of Sciences, corner of California and Dupont Sts., on Friday afternoon, Feb. 24th. The subject of mulberry growing will be discussed, and the ladies of the California Silk Culture Association have been invited to attend and take part in the discussion. Another subject will be the "growth of hardy shrubs." The matter of holding a horticultural fair in connection with the fair of the Mechanics' Institute will also be discussed.

The "Call" in Grain.—The Call Committee of the Produce Exchange organized on Friday of last week, electing H. A. Mayhew Chairman and W. H. Walker Secretary. The rules and regulations have been adopted substantially as submitted in the report recently made to the Exchange. On Saturday, A. H. Lissak was chosen Caller of the Board, and A. J. Gove Inspector. It is understood that the call will be inaugurated about the 1st of March.

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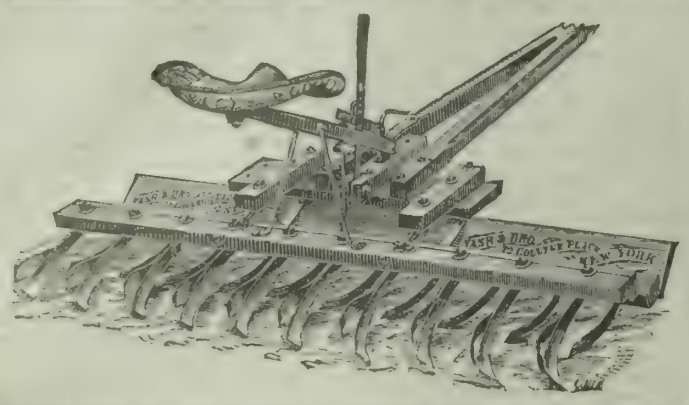

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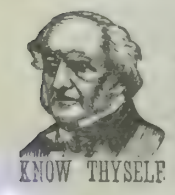

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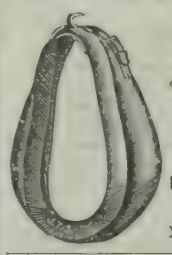

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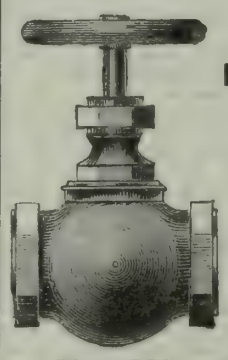

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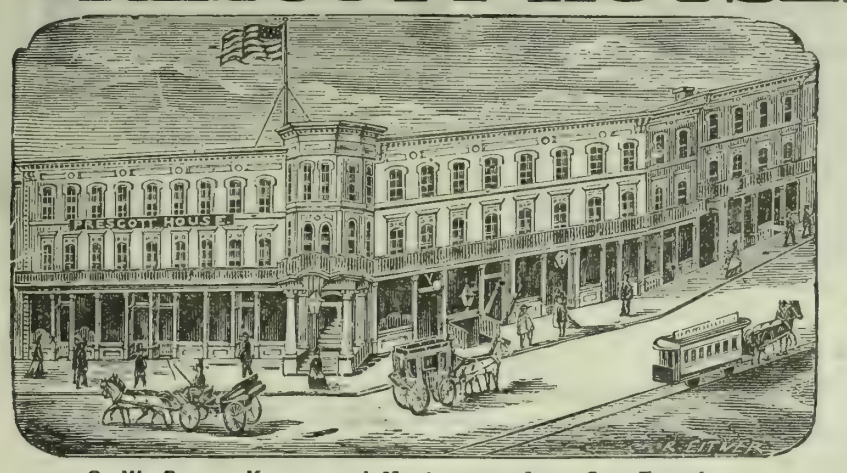

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The most complete, compact, durable and effective machine for pumping and other light work. No jerk or jar; runs easy and gives a continuous stream of water. Is light, portable, convenient to move or set in operation. Capacity, 2 000 gallons an hour, with one horse.

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Authorized Capital, - $1,000,000,

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All sizes of Pumping and Power Mills. Thousands in use. *All warranted.* Address for circulars and information

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The largest and deepest milking herd of Holsteins in the world. 225 head, pure bred, mostly imported, males and females of different ages.

A Large and elegant stud of imported Clydesdale Stallions and Mares of all ages.

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For carriages, pumps and whiffletrees and other couplings. No bolts, no rattling and no unhitching. State and County rights for sale. Address HUNTER & FRANCIS, Merced, Cal.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Feb. 15, 1882.

There has been little but talk this week, transactions have been few and prices for many articles quite unsatisfactory. Wheat has fallen off about 7c per ctl, but no one sells at the figure now offered. The latest from abroad is the following:

LIVERPOOL, Feb. 14.—Wheat: California spot lots are dull, at 10s 4d@10s 9d. Cargo lots are depressed; the rates are 46s 6d for just shipped, 49s for nearly due and 49s 6d for off coast.

The Foreign Review.

LONDON, Feb. 13 —The Mark Lane *Express* in its review of the British grain trade for the past week, says: Spring sowings are progressing favorably. Growing crops continue satisfactory and in a position that is promising. The trade is restricted; all except the wheat samples are cheaper. There was an active inquiry for seed, but the consumptive demand was slow and the foreign markets were remarkably quiet throughout the week and the demand very small. The spot supply is ample. A concession of 6d and 1s on Friday was insufficient to induce buyers of Pacific Coast. Fourteen cargoes have arrived, of which four were sold floating in bulk. The trade is dull and the rates generally lower. Maize is everywhere weak, and the demand nominal. Barley, unchanged, with slack demand; Oats, unchanged, for old, but for common the rates are cheaper. The sales of English Wheat during the week amounted to 45,152 quarters, at 46s 5d per quarter, against 36,090 quarters, at 42s 3d per quarter, for the corresponding week last year.

Freights and Charters.

Tonnage in port seeking Wheat charters is steadily increasing, and as shippers are not doing much, tonnage holders are making concessions to effect charters. Another important factor in the weakness of ships is the continued depression in the foreign markets. Engagements for the week, both spot and prior to arrival, are ten vessels, of a register of 14,191, or an export capacity of 21,286 short tons, or 425,720 ctls. The chartered Wheat fleet in port has now a register of 48,327, or a carrying capacity of 72,490 short tons, or 1,449,800 ctls, against 54,258 tons at the same time last year. The disengaged tonnage in port has now a register of 61,346, or a carrying capacity of 92,019 short tons, or 1,840,380 ctls, against 6,457 tons at the same time last year.

Eastern Wool Markets.

BOSTON, Feb. 11.—The Wool market is more active, and sales this week aggregate 3,300,000 lbs. of all kinds. The principal transaction was a lot of 700,000 lbs. of New Montevideo, at 36@38c. The quality of the Wool was excellent. Ohio and Pennsylvania fleeces have been selling at 43@44, X and XX choice selections at higher prices; Michigan X fleeces at 42@42½, medium and No. 1 Michigan and Ohio at 45@47. In Combing and Delaine selections there has been considerable doing at very full prices, ranging from 47@50, fine Delaine and No. 1 Combing, largely 48@50. Coarse and unwashed Combing is neglected. Medium washed fleeces have been more inquired for, and there have been sales to some extent at 28@33½, choice selections higher. California Wool has been in better demand, and good choice Spring has been sold to some extent at 30@38, choice Fall, 25@28; defective Fall, 16@17. In pulled Wool sales have been large at full prices. Choice supers are scarce. Foreign carpet Wools are more inquired for, but principal business in foreign Wools was the large sales of Montevideo.

BARLEY—Barley is quiet, but prices are considerably better than last week. Choice Coast Feed has sold at $1.85 and Bright Brewing, at $1.95 ℔ ctl.

BEANS—Bayo Red and Pink Beans have sold up to $3.50; Small White and Pea Beans are still at $5 ℔ ctl.

CORN—Corn is nominal; White at $2.25 and Yellow at $2 ℔ ctl.

DAIRY PRODUCE—Butter is still up, choice fancy selling as high as 32½c. Cheese is unchanged.

EGGS—Eggs are cheapening rapidly, and to-day are at 23@26c.

FEED—Corn Meal is $2 higher per ton. Hay and other feeds are unchanged.

FRESH MEAT—There is no change except a shade off in live Hogs.

FRUIT—Apples are very high, choice Newtown Pippins going at $2.50 per box. Limes are scarce and the price will be high until arrivals from Mexico. Oranges and Lemons are selling fairly at former rates.

HOPS—There is no change.

OATS—The market is quiet and a little weaker, owing to heavy receipts from Washington Territory. Sales of northern Oats run from $1 82½ to $1.92½; Surprise being quotable at $2 per ctl.

ONIONS—Onions are doing a little better, the best bringing 85c per ctl.

POTATOES—High rates continue, the best sorts bringing $2 per ctl.

POULTRY AND GAME—Turkeys are cheaper. Fowls are still high owing to Chinese New Year.

PROVISIONS—The trade is quiet and rates not materially changed.

VEGETABLES—There is no change.

WHEAT—The decline abroad practically closes up the trade here, and the quoted rate, $1.65, is nominal.

WOOL—There is nothing doing here.

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., February 15, 1882.

FRUIT MARKET.	
Apples, bx	1 00 @ 2 50
Bananas, bnch	2 50 @ 4 00
Cocoanuts, 100	6 00 @ 7 00
Cranberries, bbl	12 50 @14 00
Limes, Mex	17 00 @20 00
do, Cal, box	2 00 @10 00
Lemons, Cal, bx	1 50 @ 3 50
Sicily, box	6 50 @ 7 50
Australian	— — @— —
Oranges, Cal, bx	2 00 @ 3 50
do, Tahiti M	— — @ —
do, Mexican	15 00 @17 00
do, Loreto	— — @ — —
Pears, bx	— — @ - —
Pineapples, doz	7 00 @ 8 00
DRIED FRUIT.	
Apples, sliced, lb	— 6 @— 6½
do, evaporated	— 10 @— 11
do, quartered	— 5 @ — 5½
Apricots	— 15 @ - 17
Blackberries	— 14 @— 16
Citron	— 28 @— 30
Dates	— 9 @— 10
Figs, pressed	— 4 @— 6
do, loose	— 3½@— 5
Nectarines	— 14 @— 15
Peaches	— 11 @— 11½
do pared	— 14 @— 18
Pears, sliced	— 9 @— 9½
do whole	— 7 @— 8
Plums	— 5 @ - 6
Pitted	— 13 @— 14
Prunes	— 9 @— 12½
Raisins, Cal, bx	— — @ 2 50
do, Halves	— — @ 2 75
do, Quarters	— — @ 3 00
Eighths	— — @ 3 25
Zante Currants	— 8 @— 10
VEGETABLES.	
Artichokes, doz	— — @— 50
Asparagus, lb	— — @ 40
Beets, ctl	— — @ - 65
Cabbage, 100 lbs	— 75 @ 1 00
Carrots, sk	— 30 @— 60
Cauliflower, doz	— 85 @ 1 00
Garlic, lb	— 1½@— 2
Lettuce, doz	— 10 @— —
Mushrooms, lb	— — @— 15
Okra, lb	— 5 @— 8
Peas, green, lb	— 12½@— 15
Parsnips, lb	— — @— 1
Squash, Marrow fat, ton	10 00 @12 00
Tomatoes	— 7 @ - 10
Turnips, ctl	— — @— 75

Domestic Produce.

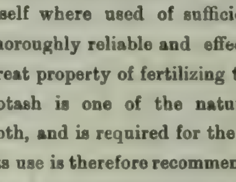
WHOLESALE.

WEDNESDAY M., February 15, 1882.

BEANS & PEAS.	
Bayo, ctl	— @3 50
Butter	4 00 @4 25
Castor	3 50 @4 00
Pea	4 85 @5 00
Red	— @3 50
Pink	— @3 50
Large White	3 00 @3 25
Small White	4 85 @5 00
Lima	5 50 @5 75
Field Peas, b'lk eye	1 50 @1 75
do, green	2 00 @2 25
BROOM CORN.	
Southern	3 @ 3½
Northern	4 @ 6
CHICCORY.	
California	4 @ 4½
German	6½@ 7
DAIRY PRODUCE, ETC.	
BUTTER.	
Cal. Fresh Roll, lb.	30 @ 31
do Fancy Brands	32 @ 32½
Pickle Roll	22½@ 27½
Firkin, new	22 @ 26
Eastern	18 @ 22½
New York	— @ —
CHEESE.	
Cheese, Cal., lb	17 @ 19
EGGS.	
Cal. Fresh, doz	23 @ 26
Ducks	— @ 25
Oregon	21 @ 22
Eastern, by expr'ss	— @ —
Pickled here	— @ —
Utah	— @ —
FEED.	
Bran, ton	— — @19 00
Corn Meal	42 00 @43 00
Hay	11 00 @17 00
Middlings	— — @28 00
Oil Cake Meal	— — @30 00
Straw, bale	— 62½@— 70
FLOUR.	
Extra, City Mills	5 25 @5 62½
do, Co'ntry Mills	4 75 @5 00
do, Oregon	4 75 @5 12½
do, Walla Walla	4 50 @5 00
Superfine	3 50 @4 25
FRESH MEAT.	
Beef, 1st qual'y, lb.	6½@ 8½
Second	5½@ 6½
Third	4 @ 4½
Mutton	4 @ 5
Spring Lamb	8 @ 10
Pork, undressed	5½@ 6½
Dressed	8½@ 9
Veal	7½@ 8
Milk Calves	7½@ 8
do, choice	— @ 10
GRAIN, ETC.	
Barley, feed, ctl	1 80 @1 85
do, Brewing	1 90 @1 95
Chevalier	1 77½@1 85
do, Coast	1 50 @1 60
Buckwheat	— @1 50
Corn, White	2 00 @2 25
Yellow	— @2 00
Small Round	— @2 00
Oats	1 75 @1 85
Milling	1 87½@2 00
Rye	2 25 @2 30
Wheat, No. 1	— @1 65
do, No. 2	1 60 @1 62½
do, No. 3	1 45 @1 50
Choice Milling	— @ —
HIDES.	
Hides, dry	— @ 18
Wet salted	9½@ 11
HONEY, ETC.	
Beeswax, lb	23 @ 25
Honey in comb	15 @ 20
Extracted, light	9 @ 10
do, dark	7½@ 9
HOPS.	
Oregon	20 @ 21
California, new	24 @ 26
Wash. Ter	23 @ 24
Old Hops	— @ —
NUTS—Jobbing.	
Walnuts, Cal	10 @ 11
do, Chile	7½@ 8
Almonds, hd shl lb	8 @ 10
Soft shell	14 @ 15
Brazil	10 @ 11
Pecans	13 @ 15
Peanuts	6 @ 6½
Filberts	14 @ 15
ONIONS.	
Red	— @ —
Silverskin	50 @ 85
Oregon	— @ —
POTATOES.	
Early Rose	1 75 @1 80
Petaluma, ctl	1 75 @2 00
Tomales	— @ —
Humboldt	1 90 @2 00
" Kidney	— @1 75
" Peachblow	1 90 @2 00
Jersey Blue	— @ —
Cuffey Cove	— @ —
River, red	1 50 @1 60
Chile	1 50 @1 55
do, Oregon	1 75 @1 80
Sweet	1 00 @1 25
POULTRY & GAME.	
Hens, doz	5 00 @ 7 00
Roosters	4 00 @ 8 00
Broilers	5 00 @ 6 50
Ducks, tame, doz	5 50 @ 7 00
Mallard	2 50 @ 3 00
Sprig	1 50 @ 1 75
Teal	75 @ 90
Widgeon	1 00 @1 12½
Geese, pair	1 50 @2 00
Wild Gray, doz	1 75 @2 00
White do	50 @1 00
Turkeys	12½@ 13
do, Dressed	12 @ 13
Turkey Feathers, tail and wing, lb.	10 @ 20
Snipe, Eng	1 50 @2 00
do, Common	50 @ 75
Quail, doz	75 @ 80
Rabbits	1 00 @1 25
Hare	1 50 @1 75
Venison	5 @ 7
PROVISIONS.	
Cal. Bacon, extra clear, lb	12½@ 13½
Medium	12 @ 13½
Light	13 @ 14
Lard	13 @ 16
Cal. Smoked Beef	11½@ 12½
Shoulders	9½@ 10½
Hams, Cal	12½@ 13½
do, Eastern	15½@ 16½
SEEDS.	
Alfalfa	12 @ 13
do Chile	— @ —
Canary	3½@ 4
Clover, Red	14 @ 15
White	45 @ 50
Cotton	— @ 20
Flaxseed	2½@ 3½
Hemp	— @ 5
Italian Rye Grass	25 @ —
Perennial	25 @ —
Millet, German	10 @ 12
do, Common	7 @ 10
Mustard, White	1½@ 2½
Brown	2½@ 3
Rape	2½@ 2½
Ky Blue Grass	20 @ 25
2d quality	16 @ 18
Sweet V Grass	— @ 75
Orchard	20 @ 25
Red Top	— @ 15
Hungarian	8 @ 10
Lawn	30 @ 40
Mesquit	10 @ 12
Timothy	9 @ 10
TALLOW.	
Crude, lb	6 @ 6½
Refined	9½@ 10
WOOL, ETC.	
FALL—1881.	
San Joaquin	9 @ 14
do, Lamb	13 @ 15
Southern Fall	9 @ 12
do lambs'	13 @ 14
Northern, free	16 @ 20
do, defective	14 @ 16
Mountain, free	16 @ 18
do, slightly seedy	13 @ 15
Humboldt & Mendocino	18 @ 21

ITALIAN SHEEP WASH.

EXTRACT OF TOBACCO.



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The Best Implement for Pulverizing, Harrowing, Cultivating; using steel curved teeth, and can be regulated to any depth.

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Buckwagons, Buggies and Light Business Wagons.

Weight carried to the extremities of the Axles. Long, soft, double sweep springs. No side sway or pitching motion. It is jointed, relieving all strain.

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TREES AND SEEDS TRUE TO NAME

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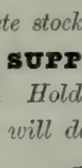

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CONCENTRATED LYE has proved itself where used of sufficient strength to be thoroughly reliable and effectual, and has the great property of fertilizing the tree and soil, as potash is one of the natural constituents of both, and is required for the health of the tree. Its use is therefore recommended. Sixty pounds of the Concentrated Lye of the American Lye Co. is equivalent to 100 pounds of commercial potash.—*Report to San Jose Horticultural Society, 1881.*

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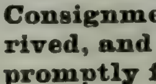

The Agents beg to notify the Wine Growers and Orchardists that the demand for this UNRIVALLED BRAND *has been so enormous as to temporarily deplete stock. We have, however,* LARGE SUPPLIES *en route, and now due. Hold your orders. No other Lyes will do the work as well.*

Later!

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1882.

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Connecting at Yokohama with Steamers of the Mitsu Bishi Co for Hiogo, Nagasaki and Shanghae. Excursion tickets to Yokohama and return at special rates.

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Round the World Trip, via New Zealand and Australia, $650.

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With House, Orchard, Barn,

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Grangers' Business Association,

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Five Directors of the above-named corporation, and stockholders thereof, representing more than one-tenth of the stock issued, having made a written request to the President to call a special meeting of the stockholders, therefore, pursuant to such request, notice is hereby given that a special meeting of the stockholders of the Grangers' Business Association of California will be held at the office of the Association, No. 38 California street, San Francisco, on Wednesday, the 15th day of March, 1882, at the hour of 1 o'clock P M, for the purpose of considering the question of making a sale of the property of the Association, and for the transaction of such other business as may come before the meeting.

DANIEL INMAN, President.

Attest: AMOS ADAMS, Secretary.

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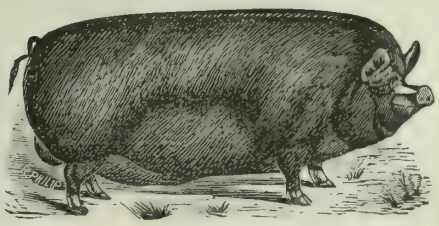

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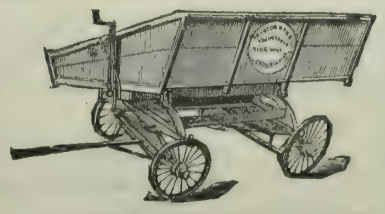

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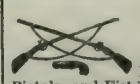

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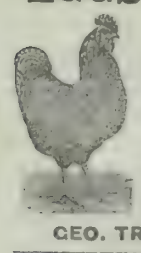

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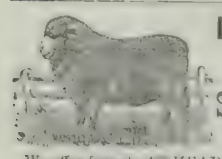

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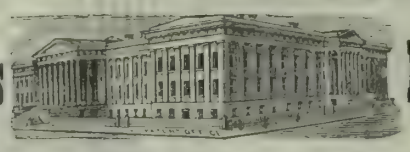
Scientific Press  Patent Agency.

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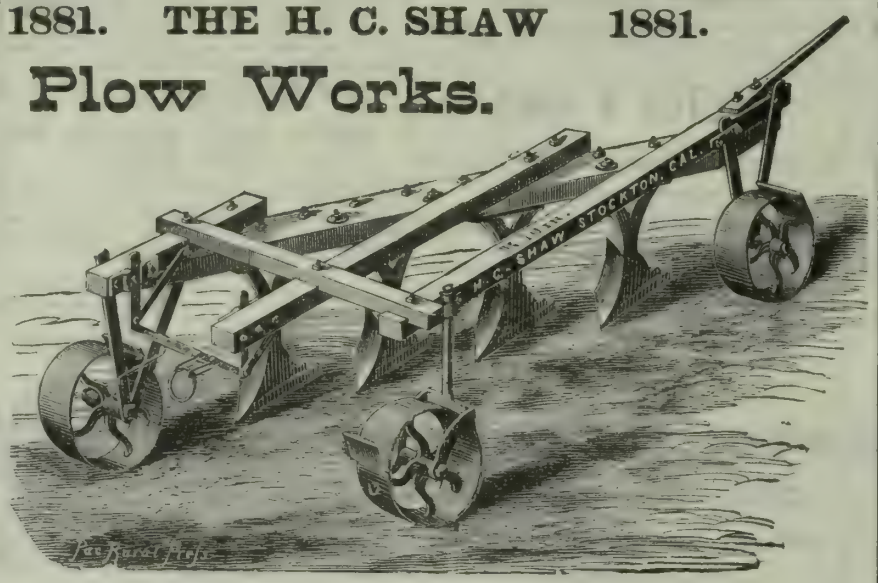

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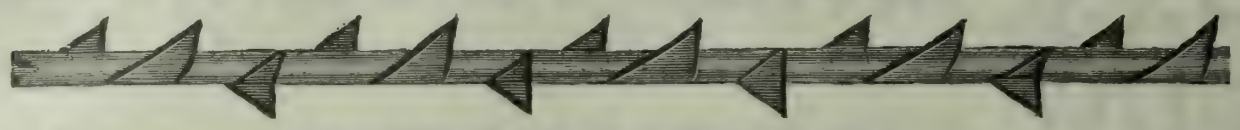

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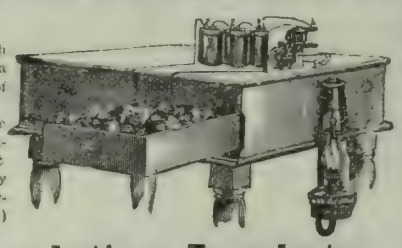

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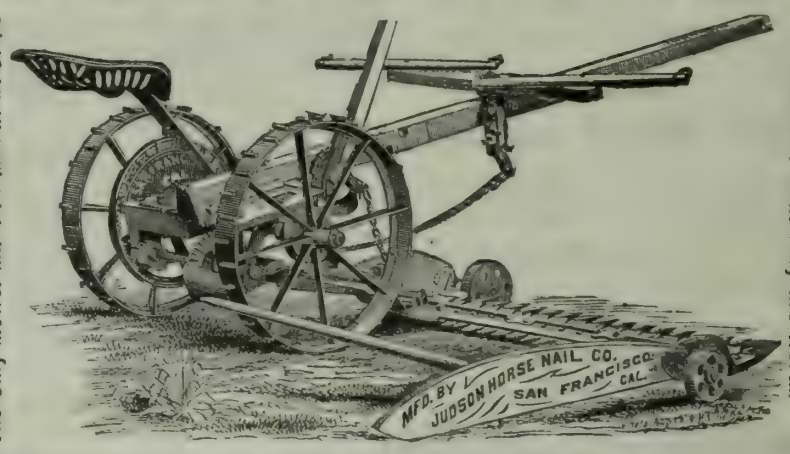

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PACIFIC RURAL PRESS

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Pests and Diseases of the Hop Plant.

EDITORS PRESS:—Can you recommend a treatise on hop growing which will give a review of insects and diseases affecting the plant, and remedies therefor?—JOHN MEWHINNY, Ukiah, Cal.

We know of no recent or comprehensive treatise on hop growing. There was a pamphlet printed in New York some years ago, giving a series of prize essays on hop culture, but they treated chiefly of planting, cultivation, curing, etc. The best we can do is to compile a sketch of the leading foes of the hop grower at the East and in England. Our correspondent, if we mistake not, has experience in hop growing in this State, and we need not attempt to tell him which of the evils noted have appeared in this State. On this branch of the subject we would like to hear from all California growers. Daniel Flint, of Sacramento, gave us last year an excellent review of the culture in California. Perhaps he will supplement that with an account of the evils he has observed. Other readers are invited to do the same.

We find in our editorial archives an essay on the enemies of the hop plant, which first appeared in the *American Cultivator*, and which will give us points for a review of the general subject. Wire worms are usually the first enemy which attacks the hop plant, and they are most liable to ravage young hop grounds. Removing the earth around the plant and picking them out, is an effectual method of exterminating these pests. A slice of potato or turnip placed by the side of the hill will act as a decoy. A weak solution of guano or sulphate of ammonia answers a good purpose. Lumps of rape cake, on which they will congregate and become glutted and perish, has also been tried with success. Fleas are troublesome enemies at the first appearance of the young shoots, checking the growth of the latter, and making them look scrubby and unhealthy, yet never destroying the crop.

The greatest enemy of the hop crop is the aphis, or long-winged or hop-fly, the origin or history of which remains an unsolved problem. At night a yard may be left free from insect pests, while the next morning 1 to 20 may appear on a small leaf, which, in the course of a week, will have increased to countless myriads. As soon as the aphides settle upon the hops they suck the under side of the leaves and deposit their young—the aphis louse—which latter have the faculty of propagation within a few hours of birth. The multiplication of the lice is so rapid that they quickly abstract the juices of the vine; the leaves, assuming a sickly brown hue, curl up, while the vine ceases to grow, falls from the pole, and the lice only perish from want of food. The lady birds and their progeny are the natural enemy of the aphis flies, and will consume them rapidly, and when the aphides are not too numerous will clear the yards.

These insects are remarkably susceptible to atmospheric changes, and on some sudden alteration of the weather they will perish by myriads in a single night. The first indication of a favorable change is the clustering of the lice to the extremities of the vine and branches, so that while the small leaves and heads of the vine are densely covered with lice at this clustering period, the lice seem to have ceased sucking the juices of the plant, and the large leaves at the bottom of the vine and of the branches next the stem become clean, and, with the vine, commence a new growth. After the certain and entire disappearance of this pest, the plants need a liberal manuring and the ground a thorough stirring to stimulate future growth.

Another blight is caused by the frog-fly, an insect similar to that observed in clover fields or upon potatoes, enveloped in a frothy substance called cuckoo-spittle. It is the grub of the insects which are seen hopping about the hop hills. The insects, which are very beautiful, are about a quarter of an inch long, striped with every variety of color, and are endowed with great muscular power, so that they can jump several feet like a grasshopper. They continue their depredations perennially on the same grounds, their attack increasing in severity each succeeding year, and there seems no remedy but to catch them. This pest seldom appears except in old plantations, and injures the plant by sucking out the juices, and also by puncturing the most succulent parts of the vine. They exhaust the plant by constant bleedings.

The mold is believed to be a disease rather than a blight, a vegetable fungus generated in wet seasons and damp locations. When it appears early, there is little hope of a crop worth picking. Careful cultivators claim that great attention should be paid to the frequent pulling off of the suckers, since they sprout through the hill in the summer months, and, being upon the ground, they invariably take the mold first; also, that if every spotted leaf were pulled off at once the progress of the disease might be arrested. This, of course, involves too much trouble to be practicable, except in small yards. Moldy hops are really valueless; it is useless to pick them, and they should be scrupulously rejected. The best preventive of mold is clean cultivation, combined with free circulation of air and light.

The fire blast occurs in dry seasons, and principally on poor, thin soils. First the leaves have dark blotches upon them; then they turn yellow and brown and fall off. Insufficiency of manuring, as well as cultivating the soil, are the predisposing causes of this trouble, and ammoniacal manuring is the best remedy. The red rust is often confounded with the fire blast, since they are only seen in dry seasons; but the former is produced by a small red mite, and large numbers of them collect on the side of a large leaf, where they spin a thin, fibrous web, finally turning brown and shriveling up the leaves, turning the hops red and injuring their quality.

The deadly effect of lime, when properly applied upon insects, however small, has been extensively proved. Fumigations with tobacco or sulphur, solution of whale-oil soap are efficacious. Syringing with diluted soft soap has saved many a blighted hop district in England. On the appearance of mold, the free use of sulphur is recommended by experienced cultivators, and the vapor of heated sulphur is usually tried on the red spider, while tobacco water is undoubtedly obnoxious to the aphides. From the number of noxious insects found in the bark, all poles should be carefully deprived of their bark. It would seem that the cultivation of hops was attended with more than its share of uncertainties. Generous manuring, thorough cultivation and persistent warfare on the enemies of the hop plant are the price of success in the older regions.

A NEW GENTIAN.—(Gentiana Microcalyx.)

THERE were shipped from Humboldt bay last year, 59,755 396 ft. of lumber, 38,905,750 shingles, 2,918,700 shakes, and 46,145 posts.

PRESIDENT ARTHUR has rented a cottage at Long Branch for the summer.

A New Gentian.

[Read at a recent meeting of the California Academy of Sciences, by J. G. LEMMON.]

Gentiana microcalyx, Lemmon (summit of the Chiricahua mountains, in southeastern Arizona, Sept. 30, 1881)—Comparing this plant with descriptions in Dr. Gray's late synopsis of the genus *Gentiana*, we find that it belongs in his first section, *Gentianella*, annuals having the corolla destitute of extended plaits, lobes or teeth at the sinuses; the anthers are versatile, and, at first, introrse, at length turning outward, with stigmas distinct. It falls into the second sub-section—flowers funnel-form, lobes entire, capsule sessile. Its characters are farther limited to this subdivision, with peduncles short, terminal or lateral; the stems distinctly wing-margined.

Farther than this, the plant remains undescribed. Its nearest allies have either crowns of setæ or hairs in the throat of the corolla, or their calyx-lobes are dissimilar or are conspicuously foliaceous or spathaceous; while in this gentian there are no setæ, and the calyx is regular and very small—suggesting the specific name given of *microcalyx*.

This species grows to a hight of from eight inches to two ft. The stems are quadrangular, wing-margined, branching from all the nodes in even ranks; glabrous throughout; the leaves from lanceolate to narrowly oblong, one to two inches long, the lowest shorter, all sessile and narrowed at base, three to five-nerved; calyx very small, five-cleft to the middle; the teeth lanceolate, half a line long; the tube 10-castate; flowers half an inch long, white, becoming greenish-yellow in drying; lobes four or five spreading, lanceolate, one-third to one-half the length of the tube, attenuate to a sobulate point; anthers large, black, exserted; filaments long, broad and flat; capsule sessile, bursting the withering corolla; seeds numerous, small, reticulated. A strikingly beautiful white gentian, that would be a valuable acquisition to our gardens and conservatories.

In the engraving the plant is shown, cut in two parts, for the convenience of the engraver; *a*, is the calyx opened out; *b*, the flower displayed, calyx in position, corolla opened revealing the ovary; *c*, is ovary enlarged, showing the two flat, strap shaped, stigmas; *d*, the ovary, natural size; *e*, is the stamen, with its double anther, enlarged.

HOG PASTURE.—In some parts of the State where alfalfa may not be a satisfactory plant, something else can be done for hog pasture. The *Live Stock Journal* says there is no question about green oats and peas being a most appropriate food for pigs, and that it comes at the very season when pasture is apt to be short. Corn being the almost universal fattening food for hogs in the West, after cold weather arrives, it is very important that the summer food of pigs should be more nitrogenous and better adapted to the development of muscle and bone than corn. The pea is very rich in muscle and bone-building elements, and oats are also superior to corn in this respect. The oats, also, assist in holding-up the pea vine, so as to prevent early lodging, and thus cause it to retain its succulence longer. The crop should be sown in the proportion of two bushels of peas and one of oats per acre, and well covered. The drill puts them in best. The united crop should produce from 40 to 60 bushels of grain to the acre. Now the grain is only part of the crop. The succulent pea vine is admirable food for pigs, and they should be turned in when the pea is just passing out of the milk; they will then devour the whole plant, and it contains as much nutriment as when fully ripe. The succulent stalk contains from 40% to 50% as much nutriment as the grain. A good crop ought to produce a growth in live weight of 500 to 700 lbs. of pork per acre.

ENLARGED ISSUE.—Next week we expect to issue a double sheet, full of interesting matter. Contributions pertaining to spring work and prospects, from all readers, will be welcome.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Fruit Culture in the Foothills.

EDITORS PRESS:—About one year ago, I wrote an article for your paper relative to fruit growing in this locality. Among other things, I stated that there was a belt of country along the western foothills of the Sierra Nevada mountains, at an altitude of from 600 to 1,100 ft. above the sea, that possessed more advantages for fruit culture than any country I had ever seen, and that in that belt, land along the line of the C. P. R. R., in Placer county, possessed peculiar advantages. I will now attempt to explain some of its advantages, and why they are so. I cannot explain exactly why this belt is freer from frost than many other localities, but it is a well-known fact to all close observers, that frost (as such), always strikes first and heaviest where the ground is lowest, soil dampest, and most humidity in the atmosphere. Where the ground is rolling, we often see vegetation along the ravines killed with frost, while on the hills and hillsides in close proximity, the frost has not affected anything. This, I fancy, is due to the lightness and rarity of the atmosphere, or to currents of air. The atmosphere in these foothills is quite light; the surface of the country naturally dry and covered with a heavy growth of small timber and underbrush, much of it evergreen, which no doubt absorbs a large amount of frost. Whatever the causes may be, it is a demonstrated fact that this belt of country is comparatively free from killing frosts; so much so, that I can show on my place here, orange, lemon and lime trees, of all sizes, from 6 inches to 10 ft. high, standing in the open ground unprotected, that have not been injured by frost; and I have never eaten as fine oranges grown anywhere in this State as we grow here. They are good size, very solid and very sweet, and are entirely free from that black fungus so common to some of the lower country oranges. Moreover, the orange scale bug does not thrive here. The climate in summer seems too dry and hot for it. I have set out trees from Los Angeles almost black with bugs, and before the first summer was over, they would be entirely free from them.

Peaches, plums, apricots, cherries and, in fact, all the stone fruits do exceedingly well here, much better than in the valleys; while apples, pears, etc., do fully as well as in the valley. Our fruit colors much higher and is of much finer flavor than in the valleys. This, I think, is due in part to the dry, hot climate and partly to the peculiarity of the soil, which is little else than decomposed granite, which possesses a large per cent. of potash and silica. This may account for its wood producing qualities, and explains the astonishing growth we get on our trees.

This soil also produces astonishing crops of berries, especially strawberries, raspberries and blackberries. It also seems to be peculiarly adapted to producing the grape and fig; both grow very luxuriantly, produce heavy crops of most excellent fruit, much sweeter and more solid than those grown in the valley. The olive also appears to do splendidly; the tree grows rapidly, is clean and entirely free from scale bug or black fungus, so common along the coast.

So much for our climate and soil, now as to water. The country is well watered with natural streams, as all hilly countries are, but we depend mainly on the old mining ditches (which bring water from high up in the mountains), for the water with which we irrigate. These hills are a complete network of these ditches. They are all kept in repair, and the owners sell the water for irrigating at from 10 cents to 25 cents per miners' inch for 24 hours. We usually irrigate about four months in the year. One inch of water will water thoroughly 8 acres of orchard or 5 to 6 acres of berries, if properly handled, and the cost of water to irrigate alfalfa is about $1 to each acre for each crop, but the first and often the second crop of alfalfa (each year) will mature without irrigation. One man can handle easily 6 to 8 inches of water. We do but very little cultivating here, generally substituting water for cultivation, though I think there is a growing tendency to water less and cultivate more.

As to our market facilities, they are equalled by but few localities in the State. We are on the main line of the C. P. R. R., and we are the nearest good fruit-growing district to that immense mineral country east of the mountains that most always gets fruit from this side. We can pick our berries, for instance, in the afternoon, put them into a freight car late the same evening, and land them in Reno (going nearly all the way through a cool climate in the night) in time for the next morning's market, while from Sacramento berries are usually picked many hours before being shipped, and then put into a hot express car and carried to Reno, per express, at three or four times the cost of shipping by freight from here, and then only arrive in Reno in time for the next morning's market. In short, berries from Sacramento to Reno must be shipped by express, while from here we can and do ship by freight, and lay our fruit down in that market in a much fresher condition, and at very much less freight than from Sacramento or any point in the valley. The same is true of all our fruits, especially all the more tender kinds. We also have as good a chance at the market of Sacramento and San Francisco as any other district of country a corresponding distance away.

As to cost of land, improvements, etc., allow me to answer these often-repeated inquiries through your columns. The price of raw land hereabouts is from $5 to $30 an acre, owing to proximity to water and railroad or shipping point. Land favorably located sells at about an average of $15 to $18—about three times what it was worth three years ago. The average cost of clearing ready for the plow is about $15 per acre, and say fencing and breaking $10 more. Some improved places can be bought, but very few, if any, with paying orchards on, as orchards usually pay so well that the owners do not wish to sell. ROBT. WILLIAMSON.

Penryn, Placer Co., Cal.

Lassen County Notes.

EDITORS PRESS:—It is a good while since there has been anything in the PRESS from this part of the State, so I thought I would write a few lines. We have had some very cold weather here this winter. The coldest night was the 7th of this month, thermometer was 1° above zero, but there are other portions of this valley, (Honey Lake valley) that are colder than along the lake, where I live. There have been 14 stormy days since New Year's, by my count, but the storms have all been light thus far this winter. There was about a week of mild weather about New Year's, and the farmers all plowed a little, but the balance of the time it has been frozen too hard. Honey Lake has been frozen over for a long time, and as fine skating as was ever seen in any country, but of late there has been snow on the ice, and that spoils all the fun in that line. At present it is pretty fair sleighing in the upper portion of the valley.

Grains of all kinds are rather dull sale here at present, but hope it will be in better demand soon. Potatoes are in good demand and the supply rather light. Farmers here predict a late spring, and, if we don't have a change soon it will make late seeding and, most likely, light crops. This has been an exceptionally good winter for feeding stock of all kinds. Cattle of all kinds sell readily at good prices.

I have been quite interested in those articles in the RURAL on bluestoning wheat. How strange there should be such a difference in the experience of different persons. Your last correspondent's, S. B. McCormick's, experience is the reverse of mine. He says the diff rence between barley smut and wheat smut is that in wheat the entire head is smut, while in barley the head is only partially destroyed. Now I have never in this valley seen a smutty head of barley that had a sound kernel, while in wheat from one or two good kernels to half the head will be good, while the rest will be smut. One of your correspondents says that volunteer is never smutty. Volunteer, with us here, is generally free from smut, but I have had it some seasons one-half to two-thirds smut. The smut theory is a good deal like the curl-leaf on the peach, it is pretty hard to come at satisfactorily; each one has a different theory.

I will now give the full report of our chickens for 1881. We had 3 dozen hens and 3 roosters; total number of eggs laid in 12 months, 3,906; sold 9½ doz. at 30 cents per doz.; 25 doz. at 35 cents per doz; 54½ doz. at 25 cents per doz.; 77 doz. at 20 cents per doz.; number dozens sold, 166; total amount, $40 62; 2½ doz. chickens sold, at $4 per doz., $10; the same at $4 50, $11.25; total amount for eggs and chickens sold, $61.87. You will see by this we do not get such big prices as one of your correspondents gave some time back in the RURAL. Our chickens have had no care, either. They get a little wheat screenings once a day, and scratch around the barn the rest of the time. They have plenty of good spring water. I have the same amount of fowls on hand as last year.

I should like to know if the Japan persimmon will stand the degree of cold that we have here. Our county was left out entirely from the horticultural report. We can raise apples and plums to perfection; peaches, apricots and pears fine, but danger of frost; blackberries fine; strawberries and grapes too sour.

G. R. WALES.

Janesville, Lassen Co., Cal.

WET AND DRY THUNDERSTORMS.—A correspondent of the London *Times*, writing from the Transvaal, South Africa, says: "Every afternoon tremendous storms of thunder and lightning burst upon us. These were of two kinds, the wet and the dry. The first is harmless, though noisy; the second exceedingly dangerous. During the dry thunderstorms, which were prevalent toward the end of October, the lightning seemed quite stupefying. It was unaccompanied by either wind or rain. The angry flashes were followed almost simultaneously by awful crashes of thunder, which seemed to shake the earth. One or two tents were struck, and the grass was set fire to in several places within sight of our camps, but no life was lost, only some arms damaged. The dry thunderstorms were soon followed by wet ones. The rain, mixed up with enormous hailstones, soused the thirsty earth, and every little crack on the veldt bore its burden of water to the Vaal, which rose and became impassable."

THE VINEYARD.

Grape Cuttings and Grafting.

EDITORS PRESS: The article "Propagation of Vines by Cuttings," in the RURAL PRESS, Feb. 11, 1882, set me to thinking, and I feel like writing something about it. The popular idea that the eye or bud of a grape vine is "susceptible of developing under ground into roots" does not agree with my observations. I have rooted grape vine cuttings of different lengths, from three feet long down to a single bud. I have propagated vines by laying down whole canes into the ground—a process, used to propagate these varieties of American grape vines which have a very hard wood and thin pith, such as the Norton's Virginia for instance, which variety does not root easily but under no circumstance have I discovered that a bud develops into roots. I observed that a gopher cut off a grapevine a little above the lowest bud. The cutting had been planted a few years before, and had made a good growth. Think of my surprise when the one bud left in dormant state for a few years, developed into wood growth and sent upward a vigorous shoot. It is my conviction that a bud of a grapevine when placed under ground will develop about as much into roots, as an ear of a horse will turn into a horsetail.

About grafting grapevines, let me say, success does not all depend on the proper operation of grafting, but in a great measure in the keeping of the wood from which the scions are made. The usual mode advised of keeping grafts of vines, as well as of fruit trees, "buried in sand in a cellar or similar place," will do very well in rigid climates, such as the Eastern States have, but it's utter folly here in California. I can assure you I have paid for this lesson. I keep all the wood intended for grafts in a cool, shady place, in the open air, by sticking each piece by itself (of the length of from one ft. to three ft.) from two to three inches in moist ground. When I graft a grapevine over one inch in diameter, I drive a small wedge made of redwood, about one inch long, down in the center of the stump, which will prevent the stump from squeezing the scions to death, which is one of the main causes why so many fail in grafting old vines.

Another point about which I wish to say a few words. I have observed that a grapevine cutting made early in the season, say early in December, will sooner leaf out in the spring than one cut late, say in February, from the mother vine, and, as a natural consequence, will sooner and surer start roots necessary for a thrifty vine.

And now, Mr. Editor, before I close, let me make a suggestion for the good of the RURAL, that every subscriber of the RURAL who has on file (preserved) your paper for 10 years, should be presented by the publishers with a file holder of their own invention. On the 8th day of March my eleventh year of subscription will run out. I have kept the RURAL filed for future reference for 11 years, and I find it valuable. WM. PFEFFER.

Saratoga, Cal., Feb. 17, 1882.

Propagation of Vines by Cutting.

The following is a continuation of the article published in the RURAL PRESS of Feb. 11th:

In connection with the foregoing, which is a transcript from French experience, we give the following paragraph by Mr. Wetmore, alluding to California practice: In methods of planting and propagating vines, success has attended many new efforts in this State. At Glen Ellen, in Sonoma county, single eyes have been propagated, producing fruit the second year. The advantage of deep plowing, subsoiling and planting cuttings with the spade instead of the dibble, dipping them first in a prepared compost, and packing fertilized or surface soil about them, has been well proved during this year. Many new tools for digging holes are being invented, some with positive merit. Better care is now taken of cuttings between the time they are made and the time planted. Stratifying or packing them with sand and mounding over with earth, is being practiced by some.

There is great difficulty experienced in propagating by cuttings the *Æstivalis*, and some other varities of American resistant stocks. Much loss will be saved by cutting the canes short—say to eight or ten inches long, and starting them in hot-beds, protected from frost before the time of planting in the field. Then, late in spring, plant in the field carefully, covering the top with light soil, to protect the developed shoots from late frosts and from drying while the young roots are taking firm hold upon the soil, which has first been suitably fertilized. Dipping the base of the cuttings as they are taken from the hot-bed in a rich wet compost, suitably prepared, before taking them to the field, and not removing them from it until at the point of planting, will also have much advantage. This can be done by carrying them to the field in tubs or buckets partially filled with the compost. I see no reason why the same may not be done with advantage when planting the more easily-rooting European varieties. A short cutting, so planted that the top is covered with light, fine earth, and that the base is not too deep, but within the influence of the warmth of the sun, will make a finer development than when long cuttings are put so deep that the roots at the base develop poorly, and the part projecting into the air is subjected to drouth and cold. Many plant their cuttings too deep, poor roots being the general result, and oftentimes failure, resulting from the unequal conflict between the bursting buds, which dry up in the air before the roots can nourish them. No precise rule, however, as to the depth of planting can be made, on account of the different characteristics of soils. Experience and the exercise of sound judgment only can determine what shall be the depth of planting. The long cutting, the base of which is bent horizantally in the bottom of a hole 12 to 14 inches deep, succeeds well in light, dry soils; but I have noticed failures in moist adobe and cold lands. Cuttings planted too deeply produce plants of slow fruitage.

SHEEP AND WOOL.

The Mohair Business.

EDITORS PRESS:—I see in the PRESS of last week a very scathing letter from a man who lives high up in the mountains with a little flock of goats which must be retrograding on his hands—if we take his report as a truth. To my personal knowledge most of the flocks in America have improved, both in their grade flocks and pure breeds, from year to year, and are able now to average goats equal to the best of the original imported goats. In my opinion no sane man has seemed to doubt the certainty of the Angora goat coming again to the front at a proper time. Sheep, horses and cattle, each in their turn come down in price according to circumstances, until they are not worth handling—only that we know they will again go up to a paying standard. The famous Merino sheep have been offered for 25 cents per head in some localities, six weeks since. That does not prove that sheep will never again pay. They have paid from the earliest history of man, and will as long as men and women wear clothes and eat mutton.

I spent last winter East with the manufacturers, and while they were not ready to take the mohair, they all agreed that silk was the only fiber known to man of more value and merit than mohair, and that the collapse in the use of it was only a matter of a short time. Now we see that we have two new factories—one for the low grade and one for the long staple—ready to buy all the fleece in America and pay the English market price for it. By the inclosed letter you will see that nearly all the fleece of this coast has just been sold for 40 cents per lb., without sorting. You will please publish the letter. Many of your readers do not have an opportunity of knowing the condition of the market. Our mountain friend is excusable for his *immense expose*, as he thought it, of the goat business. He seems to think he is called upon to set the world right on the goat business. But the day is near at hand when the Angora in America will fight his own battles. It is true the papers have published but little on this coast for three years past on the Angora, for the simple reason that the business was having a rest, and when I have nothing to say, I, for one, prefer to keep quiet. If our old friend had kept still one month longer, some neighbor would have brought him the good news that the goat business was again at the front, and it would have saved him this immense effort—to come forward as a prophet to save a swindled people. Those who shipped through Landrum & Rodgers last year will soon get their returns for their back shipments, as they have been sold, all but two or three bales, and we expect returns in about 30 days from date.

WM. M. LANDRUM.

Watsonville, Cal.

Letter from New York.

The following is the letter from Kitching Bros., of New York, to which our correspondent alludes above:

W. M. Landrum: Your letter of Jan. 4th duly received, and we are now able to report a little more encouragement for the mohair business, having sold all we had here of your stock except two or three bales of the poorest. We obtained 40 cents from a new buyer who is putting in machinery to use this stock very largely, but will work only the longest and best hair. The concern has plenty of money and it will be no small business with them. They are afraid, however, they may not get enough of the best hair here, and will have to go to England for it. We get nothing positive from Southmaid yet, and have no stock for him here. We have only four bales of mohair in our house now, besides the 18 bales Oregon hair, which is a good lot, and 10 bales Cape mohair, which is only a fair lot. We will dispose of the four bales as soon as possible and close all the old lots. We may have to take 30 or 35 cents for what remains. Only two of those bales are yours.—KITCHING BROS.

The following is a quotation from Kitching Bros.' *Monthly Wool Circular* for Feb. 1, 1882:

Mohair: This article has been in improved demand the past month at the lower range of value, 40 cents having been accepted for some important lots of the best quality. We believe that superior mohair will again be worth 50 to 60 cents, and as there is now a prospect of a regular demand, the growers should not abandon this industry, but seek to enlarge and improve their flocks. It will be only the best and superior hair that will bring encouraging prices. We also expect to find a large opening for the inferior clippings.—Quotations: Superior 45@55c; ordinary 30@40c; inferior 15@20c.

A SERIES of experiments are in progress at Portsmouth, England, in order to determine the dynamo-electric machine for the working of "search" lights on board of war vessels.

HORTICULTURE.

On Keeping Pears.

EDITORS PRESS:—Though an apple was successfully used in beguiling Eve, I think the tempter would have tried a pear had the improved varieties been growing in Eden. Speaking of this reminds me of a shelf of Easter Beurre pears that I saw the second week in February. Some were hard, a few were juicy and eatable, while quite a number were as soft and insipid as a city fop.

Had the serpent attempted to present one of these over-ripe pears to Eve, he would have found it about as slippery as a piece of toilet soap in a bath tub, and Eve would not have touched it unless her hunger was like unto that of a San Joaquin tramp. The fruit was not properly grown, and had been badly treated since it was picked.

Every pear on the shelf was as wrinkled as a venerable potato that has been 12 months out of the ground, looking in vain out of its little pink eyes for somebody to come and eat it. Quite a number were small, and would weigh only from four to six ounces each. I thought that the man who grew this fruit and the purchaser who shelved it, were to be pitied if they knew no better, and censured if they knowingly neglected and nearly ruined it.

The grower should have thinned out the fruit and allowed the tree to furnish plenty of sugar-producing sap to the pears that were left. When they were purchased, instead of being shelved where the air circulated, they should have been packed in a tight box or barrel and put in a cool place. Had this been done, these pears could have been kept six or eight weeks longer, and when they were taken into a warm room and ripened, they would have been plump, juicy, buttery and melting. While the Easter is not ranked as the best pear, its good qualities entitle it to the best treatment. An apple can stand abuse, but a pear suffers when neglected.

The skin of an apple is usually oily, hard and as impenetrable to air as the heart of a miser is to the prayers of the needy, while the skin of the pear is open, and as susceptible as the heart of a graduate of Vassar.

The oily skinned apple endures exposure and maintains a smooth, ruddy cheek and sound heart in spite of wind, rain and rough weather. It comes up fresh and crisp from the dinner pail of the hungry school boy, and is one of the centers of attraction in thrifty homes whenever neighbors meet about the fireside. The apple does so well without extra care, that people are inclined to neglect the pear, also. But the pear, which may be called the sister of the apple, is generally too delicate for the neglect and rough usage bestowed upon its sturdy brother. The best varieties generously respond with their rich aroma and precious juices when wisely and kindly treated. When properly grown and protected, and finally ripened in genial warmth, this sensitive sister of the fruit family is inexpressibly delicious.

KATE DASHWOOD.

Thermal Belt.

"The Prœparturiens Walnut"—Dwarf or Standard?

EDITORS PRESS:—In your issue of the 11th inst., you published an article over the signature of Felix Gillet, on the Prœparturiens walnut. Mr. Gillet states that the Santa Clara nurseryman "is certainly mistaken about the *Prœpurturiens* being a *dwarf species*," and that it will not do for "a reliable nurseryman to make such mistakes, for in so doing he *may be* deceiving his customers in particular and the public in general."

We do not set ourselves "up" as a high standard of authority, but we are unwilling to acknowledge that the description given of the *Prœparturiens walnut* in our catalogue is *wrong in any respect*, especially when this description is sustained by those who are regarded by intelligent horticulturists as the highest authority on fruit matters. Had Mr. Gillet consulted "Downing's Fruits and Fruit Trees of America," before writing the article referred to, he certainly would have become possessed of more knowledge of his subject; and it is quite doubtful if his good sense would have led him to make the *mistakes*—not to say blunders—that he has. Refer, if you please, for the benefit of your many readers, that they at least may not be *mistaken* in this matter, to *Downing*, Vol. 2, page 573, and under the head of "European Walnut" you will read:

"Dwarf prolific; early-bearing; fertile; precocious. This is a dwarf-growing and very early-bearing variety, very desirable for small fruit gardens, as it may, in our Northern States, be easily protected in winter. The trees commence bearing when not more than three ft. high, and, like the common walnut, it reproduces itself always from seed."

Again, if you please, refer to "The Fruit Manual," by Robt. Hogg, London, 1866; see page 413, and read under the head of "Walnuts," as follows:

"Dwarf Prolific: (Early-bearing; fertile; Prœparturiens; precocious). This is a dwarf-growing, early-bearing variety which I have seen produce fruit when not more than two and a half to three ft. high; and a tree in my possession not more than six ft. high, bears abundant crops of good-sized and well-flavored fruit.

Mr. Hogg *had some experience* in fruits and fruit growing, he being Pomological Director of the "Royal Horticultural Society's Garden," in London, where an extensive variety of fruits are cultivated; and it is hardly probable that his descriptions are *mistakes*.

Still farther reference may be had to the catalogues of Ellwanger & Barry, of Rochester, N. Y., whose reliability is not often questioned. They say: "Walnut—English Dwarf Prolific (Prœparturiens): A dwarf variety that bears when quite small." W. B. West, of Stockton, who is also considered *good* authority, calls it "Walnut Dwarf Prolific."

It is really needless to add anything in the way of comment to the authorities above mentioned. They are noted for their familiarity with their subjects and the correctness of their descriptions. The walnut Prœparturiens is precocious, sure enough, but it has evidently needed a "barren hill" in California—a country wonderfully adapted to development—and the fostering care of a Mr. Gillet to develop our precocious, lovely little dwarf into a magnificent standard. This wonderful development of this particular tree on that "barren hill" would incline one to suspect that Mr. Gillet has not now, or ever had the *Prœparturiens walnut*, but has been whiling away his time on a walnut of another name. If this be true, and considering the authorities quoted, who would doubt it, who will enumerate the many *mistakes* made by Mr. Gillet these many years.

The Santa Clara nurseryman freely confesses that he never saw a *Prpœarturiens walnut* of such gigantic size, in full fruit, as his *lone tree* on "barren hill;" but about 18 years ago, while in the employ of the late James Lick, at his residence, known as Lick's Mill, he saw trees in bearing which had been purchased from Wm. Prince, of Flushing, Long Island, as long ago as 1858. They, in their growth, took more of the habit of our California "buckeye." These trees were subsequently destroyed by flood. Will not Mr. Gillet furnish some notes as to the habit of the Prœparturiens walnut, grown by others? His own trees must have "taken a departure." It would be valuable information to know whether others had done the same.

JOHN ROCK.

San Jose, Feb. 20, 1882.

THE FIELD.

Fallowing and Fertilizing.

EDITORS PRESS:—On the subject of summer-fallowing land, Mr. J. B. Lawes, the well-known agricultural experimenter, writes to the Mark Lane *Express*, January 2, 1882, as follows:

The beneficial effect of a fallow is due to the destruction of weeds, and the formation of nitric acid from insoluble compounds of nitrogen contained in the soil. During winter a considerable amount of this nitric acid is washed out of the soil.

At Rothamsted we have an experimental plot, which has been under alternate wheat and fallow for 26 years. The yield this year was about 13 bushels per acre; which is almost identical with the produce of the land which has grown wheat for 39 consecutive seasons, without any application of manure. The analyses of the soil of this alternate fallow and wheat land which have recently been made show a most serious decline in its fertility, and fully explain why the crop has fallen from between 30 and 40 bushels per acre to its present low yield.

I am quite ready to admit that a crop grown after a two years' fallow would be larger, but this is perfectly consistent with the fact that the stock of fertility in the soil would have diminished. The object I had in view was not, however, to prove whether a fallow was or was not an exhausting process, but to urge the importance of spending less money upon tillage operations, and more upon manure when arable soil was laid down to permanent pasture.

We submit the above extract for the perusal of those wheat growers who are laboring under the impression that they can maintain the fertility of their land by alternate years of fallowing and cropping—a system which has become pretty general in some parts of this State.

It will be seen that the land so treated for 26 years only yielded about the same quantity of wheat as that which has grown wheat for 39 consecutive seasons without any application of manure.

Mr. Lawes urges the importance of spending less money upon tillage operations and more upon manure when arable soil is to be laid down to permanent pasture. This is also a subject that will have to be considered with us as the country becomes more thickly populated and divided into small farms, for I think it will be generally admitted that more or less live stock, sheep or cattle, must be kept on small farms in order to work them profitably. But we would not have it supposed that the consumption of the coarser products of the farm only, such as hay, straw, roots, etc., by live stock, will keep up the fertility of the land without the additional use of richer foods, as all kinds of grain, linseed cake, bran, etc. By a liberal and judicious use being made of these in feeding, more stock can be kept and a larger quantity of rich manure made. Manure made from highly fed animals is vastly superior to that from moderately kept ones. Full grown fattening animals make the best manure, because having less use for the bone-making material contained in the food consumed than growing animals or milch cows, they leave a manure richer in phosphates than the latter class of animals. However, it is on milch cows and growing stock that the small farmer will principally depend for his profits, and in order to make the cows give a full flow of milk at the time of year when there is no green grass he will be, in part, dependent on some purchased food in addition to that grown on the farm, and he will find it to his interest to consider what kind of purchased food gives the best return, both in food and manurial value.

Of all the purchasable cattle foods in this State linseed cake and wheat bran are undoubtedly the best, being rich in the most essential elements for making a good pasture, as well as good cattle, viz., nitrogen, potash and phosphate of lime, the manurial value of which, under judicious management in feeding cattle and using the manure from the same, may be considered worth half their present market price, *i. e.*, we can use them us food for stock the manure from which, applied to the land will be worth about half the cost of the food consumed. Now, the question is, can we, by purchasing such concentrated food for our cattle, produce manure to keep up the fertility of the soil as cheaply as it can be done by applying purchased artificial manure directly to the land?

Locality, soil and climate will, to a certain extent, suggest to each one the best method of management. Those that are convenient to a market for all kinds of farm produce will generally find it more profitable to keep and purchase food for a larger proportion of live stock on their farms than those farther away from market; in other words, to make their farms more productive.

That poor, worn-out pastures can be renovated by keeping well-fed cattle upon them in this climate, so that they will produce a luxuriant growth of the best of the native grasses, I can testify by my own experience in the matter, and that such land, when plowed after being so renovated, will produce at least double what it would have done in its former impoverished state.

The following table is taken from *Bell's Weekly Messenger*, and shows the compensation allowed to tenants on a large estate in England for purchased manures and cattle food. It may induce some of your readers who have not heretofore thought the matter worthy of consideration, to ask what such things are likely to be worth on farms of mixed husbandry in this country:

Improvements for which Compensation Will be Paid.	Length of Time They last.	Compensation.
Bone manure on pastures (pure, undissolved).....	10 years.	Entire amount, less one-tenth for each year expired since manuring.
Boning mowing land (not less than 8 cwt. per acre).....	3 years.	Whole amount, less one-third for each year expired since manuring.
Boning arable land..	2 crops.	Whole amount, less one-half for each crop taken.
Guano and superphosphate	.....	One-third cost price for all used within one year of the expiring of tenancy.
Linseed Cake or Cotton Seed Cake	.....	One-third cost price for all consumed within one year of the expiring of tenancy, and one-sixth for all consumed the preceding year.

The compensation covering a period of ten years for bone manure on pasture is probably for coarse-ground bones, and not fine-ground bone meal, such as we use in this State, otherwise the effect could not be so lasting.

I have myself seen the beneficial effects of bone manure on a crop of oats, grown on land plowed up after having been pastured for several years, on a part of which coarsely ground bones (then called half-inch bones) had been applied 20 years before, and on which land the oats stood fully six inches higher than on the adjoining strip of land where no bones had been applied.

It will be noticed that there is more than three times the compensation allowed for boning pasture land than for mowing land. Referring to Mr. Lawes again, we find him saying:

"The amount of potash taken up in the animal body by grazing is exceedingly small, while the phosphate of lime so taken up is comparatively large. The effect of mowing a pasture, therefore, is to reduce the potash faster than the phosphate, while the effect of feeding a pasture is exactly the reverse; and this being the case, it is evident that bones, which contain a large proportion of phosphates and but little or no potash, cannot be as efficacious manure for grass land which is mown for hay."

According to Mr. Lawes, bone manure will last longer on mowing land than on pasture. An opinion similar to that was expressed by me in the RURAL PRESS some years ago when writing on the subject of dairying, I believe. It is only natural to think that pasturing land with growing cattle and milch cows will remove the phosphates—the bone-making material—faster than any other way of taking off the grass crop.

The manure of highly fed cattle is comparatively rich in potash, a substance which Mr. Lawes tells us is more largely removed from hay-growing land than from pastures. Crops of wheat, oats, potatoes and turnips also remove a considerable quantity of potash. Therefore, those who have stable manure to use may find it most profitable to apply it to land that is intended for growing such crops, whether for grain or hay, as one liberal dressing of the land will furnish a supply for several crops.

I have before now given you my method of applying manure to the land, and as this is about the time of the year for doing it, I will repeat it once more. I manure with about 20 tons per acre, spread over the ground and plowed under for a crop of mangolds (beets). After such an application the same land will grow several good crops of wheat or barley for hay. Sometimes I grow a crop of mangolds the following year on a part of the same land by the application of 500 lbs. or 600 lbs. of bone meal per acre, but more frequently I use a part of it for fodder corn, which will grow very well without any more manure of any kind, and use fresh ground for mangolds every year, so that I do not manure the same piece of land two years together.

ROBT. ASHBURNER.

Baden Station, San Mateo Co., Feb. 15, 1882.

THE SWINE YARD.

Use a Good Boar.

It matters not, says the *Breeders' Gazette*, how many sows a man has, or how much pains he may have taken that they might be of the highest quality, all may be counterbalanced by the service of an inferior male, for, at breeding time, the boar practically amounts to half the herd, and, under some circumstances, considerably more. If in his breeding he is a mongrel—a cross of this, a little of that, and not much of anything in particular, though he may look especially well; or if individually he is well bred, but has been overworked, overfed or not fed enough while young, or perhaps is of delicate constitution, he may, and likely will, beget an unthrifty, weedy progeny, inheriting largely of his weaknesses and want of character, with very little of the good that was apparently in him. By one or two seasons of such injudicious breeding, it is possible to undo in a herd what may have cost years of painstaking effort to accomplish in the way of improvement. Hence, in choosing a boar, one of the first and principal requisites is that he shall be well bred; not simply good individually, but a descendant of meritorious parents on the side of both sire and dam, in whom development of the most valuable qualities is known to be inherent. He should be well grown rather than a mere pig, and should have been always well fed—not made fat on corn, but given a varied abundance of food, green and otherwise, that, combined with plenty of exercise, will develop frame, muscle and robust vigor. He should be sufficiently short-legged, and his body near enough to the ground to prevent the suggestion that he is of a "light and airy style of architecture;" he should have well-sprung ribs — that is, they should start from the backbone at right angles rather than with too much of a downward tendency, for the latter makes him slab-sided, and the former is what gives an animal the broad or "table" back, and, combined with good width between the fore legs, gives plenty of room for the large lungs and other organs necessary to the highest vitality; the broad back also affords the frame work upon which to spread a large quantity of the most highly prized meat in the entire carcass. He should be deep through the shoulders, and his hams extend well down to the hock-joint behind, and be well filled in between the thighs, as those four pieces, if large, add wonderfully to the money value of the hog's product. A broad face, not too long, with full jowls, backed by a short neck, denote, along with vitality, strong assimilating powers, or, in other words, what is known as a "good feeder." A drooping ear denotes quietness of disposition; a clean, oily skin denotes a healthy, active liver; and standing square upon his feet is evidence of a strong frame work. He will do much better service if not allowed to run with the sows, and is bred to each one but once, and not to more than two or three at most in any one day. The value and vitality of many young boars are squandered in their first season's service by allowing them to run promiscuously with sows, in the belief that the more times a sow is served the more pigs she will have. One service is all-sufficient, and more, while at least doing the sow no good, is an actual injury to the boar.

Working up the Hog Product at Home.

The *National Live Stock Journal*, for February has these suggestions: We have practiced the curing and selling of the cured product, to the extent of 50 to 100 head, at the farm, and know how simple and easy a task it is. Not hard work, like swinging the ax or maul; not driving work, like the routine of harvest, but light, under-shelter work, requiring no hurry. Cut up and trim the hams, shoulders, and side meat neatly, using the trimmings for sausage or to go into the lard kettle, or partly for both. Cord up the hams, shoulders, and sides in the cellar, on plank, using a liberal layer of sugar, salt, and saltpetre on the hams—and on the others if you like. If you do not get through this chore in your leisure hours of one day, the meat will keep, and you can finish during the next, or the third. At about the end of each week, shake the layer off into a box or tub. Add fresh sugar, etc., to the mixture, and rub this into the flesh side, again putting on a liberal coating, cording up as before. Four or five such handlings will fit the meat for the smoke-house. This may be a temporary structure, made of 2x4 scantling and pine boards, covered with the same, and if 12 ft. square, will do for the hams and bacon of 30 or 40 hogs. A small arched furnace, built a few feet away, beneath the surface, with brick, will afford a safe and economical mode of distributing smoke to the meat. When nicely browned, you are ready to supply your own table, and sell 15-cent hog meat to the retailer. Nothing can be easier or more simple. As compared to it, dairying is, in any of its modes, complicated. Working up our wool product, as stated, is beyond our reach, but to permit seven profits to be made off one of our leading products, this going, perhaps, across two or three states, where common, low-priced, unskilled labor does what should be done upon the farm at home, should not be so generally permitted. The selling of this product before our eyes, with the seven profits added, is a reflection upon our modes.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

The Testimonial to Dr. Grattan.

EDITORS PRESS:—An unintentional mistake crept into the 11th of February issue of your reliable paper, where the gift of Stockton Grange, to P. M. Grattan, was called "silver plate." Not silver plate, to be locked from burglars or used on rare occasions, but two large, lovely, Terra Cotta vases with Yucca palms in them, a living, growing reminder of our affectionate regard for him and our estimable Sister Grattan.

As he passes through his doorway the Yucca Gloriosa's green leaves tell of the respect and gratitude we feel (though some of us may have differed in opinion with him), for his four years' service through much discouragement and apathy, consequent on the failure of some projects and the reaction of our enthusiastic beginning. It was a rare moment. The simple pathos of our retiring master's reply, taken as he was, wholly unawares, touched us as no prepared speech could. He would stand by the noble principles of the Order while life lasted, would do his utmost to keep the Grange in harmony. Many times his heart had sunk low, but he had never lost sight of the good aims of the Order; it was the best and worthiest on earth; his faith had borne him up and now our Grange was reviving, and he was sure each member would help; he loved each one of us and would value these gifts among the most sacred of this life. Then when Sister Kiehl hung the wreaths of Ceres, Pomona and Flora on the palms, and in an impromptu speech wished that his years might be full of rewards, like the plump grain at last garnered into the heavenly harvest; might be rich with the fruits of well-doing and that he at last be crowned with the fadeless flowers of immortal joy, each heart felt that the bonds holding us together were drawn closer.—MRS. W. D. ASHLEY, Lecturess Stockton Grange.

[Since the above was in type we have received a kindly note from Sister Boody, calling our attention to the same mistake of ours in writing silver-plate, when the testimonial was something different. No one is to blame for the error but the writer, and we are glad to make ample amends.—EDS. PRESS.]

Grange Notes.

There is no lesson the Grange can teach of more use to the farmer than punctuality in filling engagements. Punctuality is too often neglected by Patrons at Grange meetings. Members should always be on time. At the appointed hour, the Grange should be called to order, though no more than three members be present. These can adjourn temporarily if need be. But whether or not, tardy members will be taught a lesson on punctuality. Let two or three members persistently insist on this, and there will soon be no need for complaint on this score. A little leaven leaveneth the whole lump.—*Dirigo Rural.*

The Granges may take a hint from the following item in the *Christian Union:* Don't neglect to organize some kind of a club for intellectual work this winter. Thousands of stagnant little villages, whose social life runs in feeble little eddies instead of one strong current, would gain a new interest and impulse if some center of association were made. A few people giving an evening a week to the reading of a good book or the study of an interesting subject will soon find much to think and talk about. Life runs too much to waste; give it direction and it often reveals remarkable and unexpected powers.

The presentation to the public of the financial benefits of the Grange as an inducement to becoming members, has always and everywhere resulted in a temporary apparent gain, and an ultimate injury. Persons who cannot be induced to join the Grange from any other motive than that of getting goods cheaply, will be of little value when they do come, and will likely be the last ones to use the financial advantages when they get in, preferring to sit still and wait for some good fortune to come without their doing anything. After a while they will drop out, and tell everybody else the Grange is a failure. Thus the presentation of the matter as an inducement to win makes a temporary gain but a final loss.—*Farmers' Advance.*

Meeting of Stockton Grange.

EDITORS PRESS:—Stockton Grange will hold a meeting on Thursday, the 2d day of March, commencing at 10 o'clock A. M. Brother Daniel Flint, the Worthy Master of the California State Grange, will be present and will exemplify the secret work of the Order and inform us of any changes in the laws made at the late session of the National Grange.

I am authorized to invite *all members of the Order* to be present and participate with us on that occasion. Yours fraternally,

WM. G. PHELPS, District Lecturer.

San Joaquin Co., Cal.

Meetings and Elections.

WALNUT CREEK, Contra Costa county.—M. L. Gray, M.; John Larkey, O.; T. W. Sturgis, L.; J. W. Jones, S.; Hiram Hunsaker, A. S.; C. S. Whitcomb, C.; John Baker, T.; E. H. Seaman, Sec'y; Jeff. Dunnigan, G. K; Miss Lizzie Hodges, Ceres; Miss Clara Hunsaker, Pomona; Miss Flora McKay, Flora; Miss Mary Bake, L. A. S.

TWO ROCK GRANGE, Sonoma county.—E. C Hinshaw, M.; —— Purvine, O.; Sister M. L. Hinshaw, L.; H. Andrews, S.; John R. Dorr, A. S.; S. M. Martin, C.; J. B. Schuobecla, T.; S. Q. Barlow, Sec'y; T. Keegan, G. K.; Sister C. J. Purvine, Ceres; Sister Mary Freeman, Pomona; Sister H. L. Barlow, Flora; Amanda Dorr, L. A. S.

ANTELOPE GRANGE, Colusa County.—P. Peterson, M.; H. A. Logan, O.; Geo. F. Myrick, L.; John Sites, S.; John D. S. Taylor, A. S.; Mrs. Logan, C.; John A. Rosenberger, T.; Mrs. Peterson, Sec'y; A. D. Logan, G. K.; Mrs. Sites, Pomona; Mrs. Clark, Ceres; Mrs. Rosenberger, Flora; Miss Sarah M. Shearen, L. A. S.

SANTA ROSA GRANGE.—G. W. Davis, M.; John Adams, O; E. W. Davis, L.; L. J. Hawkins, S.; T. D. Hoskins, A. S.; S. T. Coulter, Sec'y; Julius Ort, T.; A. J. Mills, G. K.; Ella Adam, C.; Mrs. G. W. Davis, Ceres; Miss Nellie Coulter, Flora; Mrs. E. W. Davis, Pomona; Miss Emma Mills, L. A. S.

WATSONVILLE GRANGE, Santa Cruz County.—Alex. Kerr, M.; Alex. Roach, O.; Anabel Tuttle, L.; Milton Pace, S.; James Stow, A. S.; A. Cox, C.; Daniel Tuttle, T.; Wm. T. Harvey, Sec'y; J. J. Stow, G. K.; Miss Lottie Rhodehouse, Ceres; Mrs. Robert Burland, Pomona; Mrs. Imogene Rhodehouse, Flora; Miss Jeanie Burland, L. A. S.

TEMESCAL GRANGE.—The interesting essay on "Rose Culture," read by Bro. E. Welleb on Saturday last, was well received. A vote was had inviting Eden, Walnut Creek and Alhambra Granges to a harvest feast meeting, to be held at 10 A. M., Saturday, March 18th. All Patrons will be welcomed. Next meeting of the Grange, March 4th, at 7:30 P. M.

SYMPATHY.—Eden Grange, Haywards, at its meeting, Feb. 11th, adopted resolutions of sympathy with Brother and Sister William Knox in their bereavement by the death of their youngest son—Mrs. F. J. Anway, Mrs. L. Perham, Liberty Perham, Committee.

Agricultural Notes.

CALIFORNIA.

BUTTE.

THE CODLIN MOTH.—Butte *Record*, Feb. 11: If the report that comes from the foothills, in the southeastern portion of the county, be true, it will test the full capacity of "Father Matthew" Cooke and his auxiliary County Commission to eradicate the codlin moth from the vicinity of Bangor and Enterprise. It is said that they are as numerous in the chaparral as in any of the orchards. If this report is correct it will be simply impossible to destroy them. It is remarkable, however, that the fact should not have been elsewhere in the foothills where orchards have been established. It has been patent to observers of fruit at our fairs that the fruit from the foothills has been free from the depredations of this moth, while that from the valley orchards, having no chaparral in the vicinity where it was grown, was badly affected by the moth.

HORTICULTURAL COMMISSION.—The Board of Horticultural Commissioners of Butte county met pursuant to call at the Court House in Oroville, on February 13th. On motion, C. L. Durban was chosen Chairman, and G. Osgood, Sec'y. The Board then proceeded to district the county into three horticultural districts, as follows: District No. 1, townships of Chico, Dayton and Kimshew. Commissioner for District No. 1, W. V. Groves. District No. 2, Hamilton, Oregon, Concow and Ophir. Commissioner for District No. 2, C. L. Durban. District No. 3, Wyandotte, Bidwell, Mt. Spring and Oro. Commissioner for District No. 3, G. Osgood. The Board then proceeded to draw for the length of terms. G. Osgood drew the long term, for three years; C. L. Durban for two years, and W. V. Groves for one year. The secretary was recommended to present the name of Geo. M. Gray, of Chico, as Quarantine Inspector of Butte county. The Board then adjourned subject to call of the Chairman, or at request of any member of the commission.

CONTRA COSTA.

THE RAINS.—Martinez *Gazette*, Feb. 18: The light rains of the past week have been timely and beneficial, bringing our measure for the season to 6.25 inches, and giving us in the central and western section of the county, if we get the average spring rains, a fine grain-crop prospect, the seeding having been finished some weeks earlier than usual, and in much better than usual manner. In the season of 1875–76 we had a rainfall of 1.61 inches after this date; in that of 1875–6, 4.95 inches; in 1876–7, .95 of an inch; in that of 1877–8, 5.68 inches; in that of 1878–9, 8.03 inches; in that of 1879–80, 13.13 inches and in that of 1880-81, 2.50 inches, the average of the seven years being 5.35 inches. If we get that average measure, fairly distributed from this date on to June, and the eastern section of the county gets its proportion, it will be likely to prove one of the best grain crop seasons we have ever had in the county.

COLUSA.

THE SEASON AND THE CROPS.—*Sun*, Feb. 18: Although we have had but 7.14 inches of rain at Colusa, and some two inches, perhaps less than that, on most of the plains land to the west of town, we think the prospects of the county quite good for a reasonable harvest. Our crops now look well and the ground is in splendid condition. We have had but little water in the river, and some people say that we have never had good crops without high water, but still such a thing might occur. The rain-storm of Friday gave us .59 and that of Sunday .81 of an inch.

THE STOCK ASSOCIATION.—The Colusa Stock Association held a meeting on the 4th inst., elected officers and transacted some other important business. The officers elected were as follows: President, Dr. W. H. Belton; Vice-President, Wm. Ash; Sec'y, Robt. Barnett; Treas., W. P. Harrington; Trustees, E. W. Jones, Dillon Sherer, Peter Peterson, Wm. Billups and W. S. Green. The Trustees were authorized and directed to take immediate steps for the incorporation of the Association, and to enlarge the sphere of its operations so as to include the holding of agricultural fairs. We have assurance of the willingness of the directors of the Northern District Agricultural Society to hold the fair at Colusa, if we will prepare for it.

LOS ANGELES.

THE CASTOR OIL FACTORY.—Los Angeles *Times:* Dr. J. F. Groover, of the Downey Castor Oil Works, was in town yesterday. He contemplates opening a warehouse in Los Angeles, from whence he will ship the oil to all parts of the coast. It is hoped that the citizens of this city will extend every assistance possible to this worthy enterprise; and not ignore it by purchasing an imported and adulterated article.

AN ORANGE CROP.—Dr. A. F. White is the owner of one of the finest orange orchards of this city. The trees are well grown, exceedingly shapely, and the whole orchard of thirty acres is kept in the very highest state of cultivation, having the appearance of a flower bed rather than an orchard. The Doctor estimates his crop for the present season at 2,300 boxes, and expects to get $2 per box in the orchard. The prices are tending upward, and it is quite likely that the figure placed on the oranges will be obtained. The orchard is on Main St., corner of Jefferson.

OUTLOOK.—*Express*, Feb. 18: The rain was very general throughout the county, as far as we have heard from, and perhaps no locality will receive more benefit from it than San Fernando. The wheat plant of that valley was in a condition to come up finely with the rain of last night. A few days ago, Judge Widney informs us he went over a field that had been seeded and found that the heavy winds had carried pulverized soil over the valley and deposited it so evenly that it appeared as if it had been laid there with a fine sieve. On digging down he found the soil moist to a depth of five or six inches, and the seeds had sprouted, sending roots out in all directions, while the tender blades were making their way to the surface. Last night's rain will give a strength to the growth that will soon bring the grain well above the ground. We now feel very sanguine that this year's wheat crop in San Fernando valley will be a success. Not only this, but that of the entire county stands an excellent chance of making a good showing at harvest time.

ANOTHER GLORIOUS RAIN.—The rain of last Friday night, when we were treated to a pour of an inch and a quarter, broke the back of the dry season, and now that another good rain has visited us the mouth of the last croaker is stopped. The last rain, as we stated, assured the hay crop, and the present rain warrants us in saying that many thousand acres in this county will now yield an abundant crop of grain. February gives promise of being a wet month, and it is not beyond the possibilities that our rainfall this year will equal that of last. Anyway the nightmare of a dry season is removed, and again our people can relax their facial muscles, brace up and go about their business with lightened hearts. The sheep interest will, we predict, be found to be about the only one that has suffered from the drouth, and while this is to be regretted, it may in the end prove a blessing in disguise. The reduced acreage of the wheat crop will be the only damage to that interest we think, and that will be compensated for by the increased acreage of corn.

CORN PRODUCT FOR THIRTY ACRES.—Anaheim *Gazette:* The result is given in the table which follows; the expenditures, however, are fictitious, for the reason that Mr. Gothard did nearly all the work himself. His actual money outlay was not more than $150 (exclusive of rent and sacks), but in making the calculations it was easy to arrive at the amount it would have cast him if he had hired all work done:

1,150 cts of corn at $1.63		$1,874.50
Plowing, one time	$ 45	
Cultivating, two times	30	
Hoeing	15	
Shucking	100	
Hauling corn to crib	38	
Hauling corn to depot	85	
949 sacks	85	
Shelling, etc	57	$455.00
Balance		$1,419 50

It beats the best corn lands in the best corn States

MONTEREY.

SALINAS VALLEY.—*Argus:* The much needed rain has come once more, and the smiling faces of the farmers and the contented look of the merchants are noticeable. This last rain, with the usual spring showers, insure crops around Castroville. The total rainfall for the season is 7.05 inches, against 13.30 inches at this time last year, and 5.30 inches at this time in 1880. The rain this week wipes out the fear of the dry season, and the prospects of a bountiful harvest are very promising, as we have had more rain up to date than we had in 1879–80, when it will be remembered this neighborhood raised an unusually good crop.

SACRAMENTO.

SUCCESS IN RAISIN MAKING.—EDS. PRESS: I received early last summer, files of the PACIFIC RURAL PRESS, running back two years, and I think them invaluable, specially to one engaged as I am in general farming and fruit, specially the grape manufacturing into rasins, wine and vinegar. I have had marked success during the laast six years in the manufacture of raisins (that is in producing an article that gives entire satisfaction to the consumer as well as the dealer). In this, in the past much-neglected or unnoticed part of Sacramento county as a fruit growing district, we produce the finest of grapes for table use, for wine and for raisins, without any artificial irrigating. The grapes are much sweeter, and as a matter of course make a sweeter raisin and a better wine than fruit matured by irrigation. You will see after having put to the test a sample of my raisins, that they are not inferior in size to the best raisins put up in any other locality in California. In addition a grape produced in that way (by thorough cultivation only) and suffered to ripen thoroughly up to a point that we term over-ripe, will make a raisin that will be soft and velvety and yet will keep in any climate, and improve in flavor for one and even two years. Such a raisin is much needed for the San Francisco market, in order to keep on storage in large quantities, and consumers would soon learn to appreciate an article well cured, that is with age of one year and even two years.—GEO. H. KERR, Elk Grove, Sacramento county. [We have tested the sample of raisins sent by our correspondent, and can pronounce them exceptionally fine.—EDS. PRESS.]

SAN BERNARDINO.

RIVERSIDE ORANGES IN NEW YORK.—Riverside *Press:* T. W. Cover recently sent some of his Washington Navel oranges to B. K. Bliss & Sons, of New York, and a few days since he received a letter from the senior member of the firm, from which we are permitted to make the following extract: "I wished that I might give you the reports of some of our large fruit dealers. It would have pleased you very much to have visited their stores with me. I first visited the office of one of the largest dealers in the city, who is also interested in orange culture in Florida. He could not imagine how such oranges were grown, and called in other members of the firm and the employees outside; they were delighted with the appearance of the fruit, and said they could sell from 500 to 1,000 boxes in a day at $6 to $7 per hundred. A retail dealer on Broadway said that he could get $14 per box for such fruit. The principal partner of a large grocery firm, who sells large quantities of Florida fruit, said that Florida oranges would have to take a back seat if such oranges as these were brought to this market; there would be no difficulty in getting fancy prices for all that could be brought here, if the freight charges are not too heavy. The fruit arrived here in good condition, and what there is left of it is as fresh as when it was gathered. I have given my friends an opportunity to taste the fruit, and all agree that they are the finest ever tasted."

SAN DIEGO.

THE GOPHER.—W. J. Whitney, in the *Union:* Two years ago I thought it would be almost an utter impossibility to get rid of the gophers, but now hope that we shall be bothered but little more with them. I do not think there is one where there were a hundred then. How did we get rid of them? Well, I will tell you. I rigged up a sub-soil plow to run in the bottom of the furrow, just a little ahead of the turning plow, bolting it fast to the other plow by an extra beam running over the furrow last plowed and behind the furrow horse, ripping up the soil about 20 inches in depth. That cooked the most of them. What few survived that, of course, came to the surface pretty soon. Those we went after with gun, traps and poison, and I attended to them every day all summer, as they worked in from the edges, and then kept lots of cats to catch them on the outside. It all takes work, of course, but it is the only show to raise vines or fruit trees here, and a man who hasn't the perseverence to go right after the vermin, and stick to them, had better not try viticulture, for if he does he will fail, sure.

SAN LUIS OBISPO.

THE RAIN.—*Tribune*, Feb. 18: The long-continued drouth terminated in a splendid rain on the 10th inst., when an even inch of water fell. On Wednesday the heaviest rain-storm of the season commenced and continued up to the hour of going to press—Friday noon—with prospects of another rainy night. The amount of rainfall since Wednesday has been one and one-half inches, making a total of 7.65 inches for the season, and insuring good crops.

TULARE.

THE RAIN.—*Delta*, Feb. 17: The rain was general throughout the county. The Tule river country will, with the usual spring rains and showers, insure a good crop. The foothills have had copious rains, and generally among them there is insured a better crop than was made last year. Mussel Slough is entirely out of danger. One and three-tenths inches fell at Hanford Friday and Saturday, thus more than compensating for the comparatively light rain of the week before. Taken altogether, it is safe to assert that a fair crop is insured in Tulare county.

VENTURA.

THE OJAI.—EDS. PRESS: The ojai, a delicious soft warm rain. Already another full inch has come down, and there's millions in it, for there is promise of untold inches yet to come. There is an immense amount of ground plowed and seeded. Richard is himself again.—H. J. S., Nordhoff, Cal.

YOLO.

THE OUTLOOK.—*Mail*, Feb. 16: A number of farmers and business men were in town this week and from them we glean the following facts relative to the condition of the growing crops and the business outlook at different localities: In Capay valley nearly all the grain is up and looking well; and the rain which has fallen within the last few days will be amply sufficient to carry it along for two or three weeks without additional moisture. In the Madison and Hungry Hollow precincts the rain was very timely, as the early sown wheat, as well as that lately put in the ground, was suffering somewhat, and one or two more sieges of north wind would have put a very gloomy aspect on the situation. In Buckeye township, and east from Winters along the north side of Putah creek, the necessity for moisture was not so great, but the crops will be greatly benefited by the recent showers, and the prospect for an average yield is greatly brightened thereby. All along the line of Willow slough, embracing the "Egypt" country, the growing crops look well, and farmers from that locality speak favorably of the outlook. They say that, in all probability, we will have all the rain needed, now that the ice has been broken, and express no fears of a total failure. The same may be said of a large area of country lying north of Cache creek, and, with a few good spring showers, a fair yield is pretty well assured. The land in the immediate vicinity of Knight's Landing is principally below the level of high water during flood times, and is not in want of a very great quantity of rain during any winter. All that the farmers in that neighborhood now fear is an overflow later in the season. The North and South Putah districts present a very flattering outlook, and a complete failure can hardly be possible now. In this locality the grain has suffered considerably from the recent extreme cold winds and heavy frosts, but with a reasonable quantity of rain, equitably distributed during March and April, the yield will unquestionably be satisfactory. As a full head of water is now flowing through Moore's canal, all who have clover fields, and those who need water for the irrigation of vineyards and other lands, can obtain a full supply upon application to the agent. Thus it will be seen that our county stands in no particular danger of a complete drouth, and the general outlook for fair crops is good. We congratulate the farmers, merchants and all other classes upon the bountiful rain with which we have been favored, and the prospect for good times to come.

MONTANA.

PILING WOOD.—*Inter-Mountain:* At a test given at Tadden & Walker's wood yard on East Park street, on the measurement of sawed and cord wood, a point raised by a great many customers of wood, was very satisfactorily settled. It is a well known fact that there is a way of piling wood, especially long wood, so as to make it appear to better advantage than it really should if piled with a view to giving 128 cubic ft. On special invitation Messrs. Shields, Innes and others visited the wood yard this morning to see what an average cord of four ft. wood would make when cut twice. The whole thing, after being cut and piled up as closely as short wood naturally admitted of, measured just 86 cubic ft. The same lot being then placed into the wagon bed used for delivering about town, fell nearly one rick short, the ricks being three ft. high, three ft. and two inches wide, and 16 inches long. The bed being then measured it was found to show a full 100 cubic ft. in the clear. The inspectors expressed themselves fully satisfied that a full bed gave the purchaser a fair, square cord, which is all that can be expected of any one when only the price of one cord is asked for the same.

NEVADA.

DRESSED BEEF.—*Silver State:* The shipping of dressed beef to San Francisco continues uninterruptedly at the rate of three carloads a week. Each car contains on an average about thirty-five beeves. As the bullocks are in prime order when butchered, and are not feverish and bruised by being transported over 450 miles in crowded cars, the beef commands a premium in San Francisco, though a ring or combination of slaughterers has been formed to kill the business if possible.

ANOTHER shipment of Lake Michigan whitefish, consisting of 100,000, has been deposited in Clear lake, in Lake county,

News in Brief.

NEW pumping works costing $31,000, have been put up in the Idaho mine in Grass Valley.

COLORADO miners are looking toward Utah for investment, and they think Salt Lake is the next city to receive a big boom.

NEW YORK has never been more crowded than it is this winter. The hotel-keepers are making fortunes.

THE Northern Pacific Railroad Co. will, in the spring, have one or more light-draft powerful steamers on the Yellowstone.

THE cold weather is causing great suffering among cattle running at large in the valleys in Nevada and Idaho. A number of cattle died of thirst, the streams being all frozen.

IT is reported that the Madrone mineral springs, situated a few miles northeast of Gilroy, will be purchased by a company at Oakland for $8,000, and that $12,000 more will be spent for improvements.

THERE is not a single vessel under construction in any of the ship yards on the St. Charles, Quebec, this season. It is almost the first time within the memory of the oldest inhabitant that such a thing has happened.

THE Truckee *Republican* says the present season has been the most favorable for logging for many years. An immense amount has been cut, and quite an army of men and teams have been employed on the Little Truckee.

A DISPATCH from Buenos Ayres, dated Jan. 24th, describes the massacre of the inhabitants of Pisco by Peruvian soldiery. Col. Mas, with 600 troops from Ica, attacked Villavacencio, routed him, and proceeded to sack Pisco. A thousand pipes of wine were distributed among the men. Four hundred foreigners were cut to pieces, 300 being killed, including the French Consul. The total number of victims was 1,000. Col. Mas has since been shot by Calderon's troops.

Volunteer Testimonials of Those Who Have Used Booth's Exterminator.

MILES STATION, May 25th, 1881.

MR. BOOTH:—I used one pound of your Squirrel Poison and found 72 dead squirrels. It is the best I ever used. Send 5 lb. can Poison. Yours, E. MILES.

SAN BENITO STORE, June 28, 1881.

A. R. BOOTH, San Luis Obispo, *Dear Sir:*—The can of squirrel Poison I got from you did all you represented to me, and I shall buy no other squirrel poison after this. Booth's Squirrel Poison is king. Yours respectfully, HUGH RILEY.

Information on Fruit Growing, Transportation, Marketing, Etc.

The Official Report (by J. H. WHEELER, Secretary), of the CALIFORNIA STATE FRUIT GROWERS' CONVENTION, held at Sacramento, Dec. 6th, 1881, as published in several issues of the PACIFIC RURAL PRESS, has been issued in a pamphlet containing 24 solid reading pages. Besides the transactions of the State body in council, the work reports the ideas and practical experiences stated by individual fruit growers.

Mailed postpaid from the PACIFIC RURAL PRESS office, S. F., on receipt of 10 cents.

Important Business Change.

We are informed that Messrs. Frank Batchelor and J. G. Wylie, of Sacramento, have purchased the entire interest of the firm so extensively and favorably known for the past two years as Batchelor, Van Gelder & Co. These gentlemen will continue the manufacture of spring tooth implements at their old location under the firm name of Batchelor & Wylie. From the energy and business ability displayed since our first acquaintance, we predict for them a very successful future, as their business is already recognized as one of the well-established necessities, not only of our State, but of the entire Pacific coast.

Try the Rural Press for 25 Cts. a Month.

Tell your friends that they can have the PACIFIC RURAL PRESS mailed to them one month on trial for 25 cents. Four back Nos. will be added on receipt of 10 cents additional—making eight copies for 35 cents. It is a handsomely printed and illustrated home journal. Mail it to friends abroad.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired, be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

BOOKSELLERS, STATIONERS, ETC.—Messrs. Payot, Upham & Co., No. 204 Sansome Street, are one of the oldest most enterprising and reliable firms in the book and stationery trade in San Francisco. Scientific, industrial and foreign publications are a specialty with them. They are also noted for their first quality of blank book and fine stationery line of goods.

REMITTANCES to this office should be made by postal order or registered letter, when practicable; cost of postal order, for $15 or less, 10 cts.; for registered letter, in addition to regular postage (at 3 cts. per half-ounce), 10 cts

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

ANNUAL STATISTICIAN of 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 816 California st. Price, $4.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.

The Stanley Vine-Setter.

P. Sainsevain, the pioneer wine-maker, came to Los Angeles county from France in 1839, where he was engaged in planting vineyards and manufacturing wines and brandies for 13 years. In 1853 he planted the first large vineyard in California, near San Jose, and in 1857 established in San Francisco the first California wine store, corner of Montgomery and Jackson streets, and has been almost constantly engaged in this business ever since. He was one of the first Frenchmen who discovered that our native California wines were equal, if not superior, to the imported article. Certainly his opinion should be of value. Annexed is a letter published by his permission:

MR. J. STANLEY.—*Dear Sir:* I have just finished the planting of Mr. Juan Gallego's vineyard of 450 acres in 25 days. After trying all the devices for making holes, I adopted your vine-setter. They are the most effective tool I ever used for that purpose. A man can make from 600 to 1,200 holes per day, according to the nature of the soil, 13 to 15 inches deep, 3½ inches wide, large enough to permit of tamping well. With 1-inch stick or iron tamper the loam, sandy soil, or any other substance needed to permit the young roots to develop free, without encountering the hard soil compressed, as with holes made with the crowbar. As soon as known by planters, every other tool will be set aside.

Respectfully yours, P. SAINSEVAIN.

Our Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

G. W. MCGREW—Santa Clara county.
M. P. OWEN—Santa Cruz county.
J. W. A. WRIGHT—Merced, Tulare and Kern counties.
JARED C. HOAG—California.
B. W. CROWELL—Humboldt and Trinity counties.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

A TURNED LEAF will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

Business Offices and Sunny Rooms to Let.

We have some desirable rooms to let adjoining the offices of this paper which will be rented on favorable erms. Stair entrance, No. 252 Market St. Elevator, No. 12 Front St. Parties wishing offices, etc., will do well to call and see them. DEWEY & CO.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Feb. 22, 1882.

It is a National holiday, the exchanges are closed and nothing is doing. The reports of markets are consequently of reduced importance. We shall, however, review the trade briefly, stating such changes as were brought to light by Tuesday's transactions. The latest from abroad is the following:

The Foreign Review.

LONDON, Feb. 13—The Mark Lane *Express* in its review of the British Grain trade for the past week, says: All crops are healthy, and their previous too rapid growth has been checked. The position for this time of year is exceedingly good. The supply of Wheat is restricted, and the trade completely ruled by foreign supplies. Even the best samples have slowly declined since Monday. In the prior part foreign trade diminished, and, in expectation of lower rates, prices declined a shilling on Friday. Twenty-nine cargoes have arrived, three sold. Values off coast declined 3s. Red Winter Wheat, to arrive, has fallen 4s. Flour is in small demand, and prices have slightly declined. The foreign supply is increasing, but prices for useful brands are unchanged. Foreign Barley and Oats are unchanged, Maize has declined 6d. The sales of English Wheat during the week were 43,503 quarters, at 46s per quarter, against 26,484 quarters, at 41s 8d per quarter, for the corresponding week of last year.

Freights and Charters.

The freight market is dull and tonnage is abundant, with few takers. The rate is nominally about £3. The chartered Wheat fleet in port has now a register of 45,182, or a carrying capacity of 67,773 short tons, or 1,355,460 ctls, against 51,368 tons at the same time in 1881. The disengaged tonnage in port has now a register of 68,145, or an export capacity of 102,217 short tons, or 2,044,340 ctls, against 6,751 tons at the same time last year. Tonnage now on the way to this port has a register of 221,939, against 174,776 at the same time in 1881, and 127,655 in 1880.

Eastern Wool Markets.

BOSTON, Feb. 18.—Wool is steady, with a fair demand. There is no great pressure to buy or sell. The trade, on the whole, is comparatively quiet. The sales of the week have been 2,000,000 lbs., including all grades and qualities; but the demand rules large for fine Wools. Sales of Ohio and Pennsylvania fleeces have been XXX and XX, choice lots at 42@48c. Some XXX is selling at the latter rate. Michigan and Wisconsin fleeces are quiet at 42@43½c, medium and No. 1 fleeces, 45@48c; combed and delaine selections, higher, ranging from 46@51c. Some 15,000 lbs of choice No. 1 has sold at the latter rate. Coarse and medium unwashed combing are dull. Unwashed fleeces are in fair demand and prices are unchanged. Pulled Wools continue firm and have been selling more freely than any other kinds, choice grades of California, Eastern and Maine ranging from 45c to 52½c. Australia Wool has been sold at 45@50c; Cape, 30c; Montevideo, 37c. Holders are confident and manufacturers purchase cautiously.

NEW YORK, Feb. 19.—Wool is unchanged, demand moderate and prices about steady; sales include 20 bales California Spring at 28c.

Eastern Grain and Provision Market.

NEW YORK, Feb 19.—Wheat has been active for speculation, but the export demand has been very moderate, as exporters have had their limits narrowed again as to the prices, but orders for quite large quantities of Winter Wheat are here at a few points below the present views of holders. Barley is quiet and steadily held. Provisions dull and easier, at 6½@6¾.

New York Dried Fruit Markets.

NEW YORK, Feb. 19.—Foreign Fruits are scarcely so firm, except Valencia Raisins, which are firm. Prunes are easier.

BAGS—The rate for standard Wheat Bags is 8½c spot, and 9c May delivery.

BARLEY—Prices have shaded off a little, and the market is weaker. Sales: 600 sks good Feed, $1.81½; 80 tons Bay Chevalier, $1.80.

BEANS—There is no change. Trade is quiet, but prices are firm.

CORN—Yellow Corn has dropped off about 10c ℔ ctl. White is nominally unchanged.

DAIRY PRODUCE—Butter is still in limited supply, and prices have run up again to 35c for the fancy lots, others 32½@34c. Cheese is unchanged.

EGGS—Eggs have ruled lower this week, and 25c is now the top. A reviving demand is expected during Lent.

FRUIT—There is no change in Fruit except that Oranges are arriving more freely, and the average rate is reduced a little.

FRESH MEAT—Beef is ½c cheaper. Mutton is high again. There is very little that is fat and desirable in the market, and much which is otherwise.

HOPS—There is nothing new here. New York, by telegraph, reports a fair demand and firmer prices.

OATS—Oats are quiet and not in much request. The choicest milling do not rate over $1 95 and the ruling price is much lower.

ONIONS—Onions are scarce and in request. The price has advanced to $1.10 for the best.

POTATOES—The high values continue. The recent imports from Oregon are about cleared up, and receipts from California fields are small.

PROVISIONS—The market is firm at old prices.

POULTRY AND GAME—There is no great change in values, except that dressed Turkeys have been low owing to large receipts.

VEGETABLES—Carrots have run up to 75@90c, and Cauliflower is cheapened. Green Peas are still arriving from the Southern coast.

WHEAT—Rates are about the same as last week, but there has been little done. We note sales: 4,500 sks very choice shipping at $1.66½; 100 tons milling, $1.62½; 434 sks No. 2, $1.60; 1,100 sks, for superfine, at $1 55.

WOOL—There is nothing doing and no change.

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., February 22, 1882.

FRUIT MARKET.			
Apples, bx	1 00 @ 2 50	Pears, sliced	— 9 @— 9½
Bananas, bnch	2 50 @ 4 00	do whole	— 7 @— 8
Cocoanuts, 100	6 00 @ 7 00	Plums	— 5 @— 6
Cranberries, bbl	12 50 @14 00	Pitted	— 13 @— 14
Limes, Mex	17 00 @20 00	Prunes	— 9 @— 12½
do, Cal, box	2 00 @10 00	Raisins, Cal, bx	— — @ 2 50
Lemons, Cal, bx	1 50 @ 3 50	do, Halves	— — @ 2 75
Sicily, box	6 50 @ 7 50	do, Quarters	— — @ 3 00
Australian	— — @ — —	Eighths	— — @ 3 25
Oranges, Cal, bx	1 50 @ 3 00	Zante Currants	— 8 @— 10
do, Tahiti M	— — @— —		
do, Mexican	15 00 @17 00	VEGETABLES.	
do, Loreto	— — @— —	Artichokes, doz	— — @— 50
Pears, bx	— — @ —	Asparagus, lb	— — @— 40
Pineapples, doz	7 00 @ 8 00	Beets, ctl	— — @— 65
DRIED FRUIT.		Cabbage, 100 lbs	— 75 @ 1 00
Apples, sliced, lb	— 6 @— 6½	Carrots, sk	— 75 @— 90
do, evaporated	— 10 @— 11	Cauliflower, doz	— 60 @— 75
do, quartered	— 5 @— 5½	Garlic, lb	— 1½@— 2
Apricots	— 15 @ - 17	Lettuce, doz	— 10 @— —
Blackberries	— 14 @— 16	Mushrooms, lb	— — @— 15
Citron	— 28 @— 30	Okra, lb	— 5 @— 8
Dates	— 9 @— 10	Peas, green, lb	— 12½@— 15
Figs, pressed	— 4 @— 6	Parsnips, lb	— — @— 4
do, loose	— 3½@— 5	Squash, Marrow fat, ton	10 00 @12 00
Nectarines	— 14 @— 15	Tomatoes	— 7 @— 10
Peaches	— 11 @— 11½	Turnips, ctl	— — @— 75
do pared	— 14 @— 18		

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., February 22, 1882.

Eng Standrd Wheat	8¾@ 9	45 inch	9½@ 9½
Cal Manufacture		40 inch	8½@ 8¾
Hand Sewed, 22x36	8¾@ 9	Wool Sks Hand Swd	
20x36	8½@ 8¾	3½ lb	— @47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	— @49½
Machine Swd 22x36	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10¾	Bean Bags	6½@ 7
Quarters	6 @ 6½	Twine, Detrick's A	32½@35
Eighths	4½@ 4½	" " AA	35 @37
Hessian, 60 inch	— @12		

(CONTINUED ON PAGE 140).

Make Childhood Sweet.

Wait not until little hands are at rest
  Ere you fill them full of flowers;
Wait not for the crowning tuberose
  To make sweet the last sad hours;
But while in the busy household band,
Your darlings still need your guiding hand,
  Oh, fill their lives with sweetness!

Wait not till the hearts are still,
  For the loving look and phrase;
But while you gently chide a fault
  The good deed kindly praise.
The word you would speak beside the bier
Falls sweeter far on the living ear;
  Oh, fill your lives with sweetness!

Ah! what are kisses on clay-cold lips
  To the rosy mouth we press,
When our wee one flies to its mother's arms
  For love's tenderest caress?
Let never a worldly bauble keep
Your heart from the joy each day should reap,
  Circling your lives with sweetness.

Give thanks each morn for the sturdy boys,
  Give thanks for the fairy girls;
With a dower of wealth like this of home,
  Would you rifle the earth for pearls?
Wait not for death to gem love's crown,
But daily shower life's blessings down,
  And fill young hearts with sweetness.

Remember the homes whence the life has fled,
  Where the rose has faded away;
And the love that glows in youthful hearts,
  Oh, cherish it while you may!
And make your home a garden of flowers,
Where joy shall bloom through childhood's hours,
  And fill young lives with sweetness.

—*Christian Register.*

Harvey's Brave Deed.

He was a little bit of a chap, only 12 years old, and so pinched, and stunted, and weazened that you would have thought he could not be more than eight. His eyes were large and brown, and wistful, like those of an intelligent dog, and it was the pathetic language of these same brown eyes that aroused the compassion of an elderly, well-to-do farmer, one morning.

Mr. Adams (the farmer), stood on a corner waiting for a car, and above all the din and bustle of the crowd that hurried past, he heard a shrill, boyish voice calling:

"*Star! Herald! Sun!* Dreadful murder in the 6th ward! Full account of the tragedy. *Star! Herald!*"

"Hello? Starvey, sold any yet?" broke in a second voice.

Mr. Adams turned sharply around, and decided that the first voice belonged to as miserable a specimen of rags and bones as it had ever been his bad fortune to see, and he wait d rather anxiously for an answer, which soon followed in a patient, uncomplaining tone.

"Not yet, but the old woman down yorder gave me an apple from her stall, so I'm not so very hungry."

"Pore little chap," said the second voice with real sympathy. "Times is hard on ye, that's a fact. Try that old fellow on the corner; country, I guess.

Acting upon this advice, No. 1 approached and spoke up hopefully:

"*Star! Herald! Sun!* Take one sir?"

"Yes, let's have a *Herald*," said the old gentleman, diving into his pocket for change. "What is your name, my boy?"

"Harvey, sir; but the boys and the folks in our alley most generally calls me Starvey."

"Starvey! yes, yes," said the old gentleman, with another rapid survey of the rags and bones. "Why doesn't your mother mend your clothes, and how does it happen that you are so thin? Have you been ill?"

"Sick, sir? Oh, no; I rather guess it's because I don't git enough to eat, and mother, she's dead!" This last in a hopeless tone, with a brush of his ragged sleeve across the brown eyes. "She died last winter, and there's no one to look after me now. Thanky, sir," as he received the change which the old gentleman had all this time been holding in his hand.

"Here! don't go!" said that worthy individual, as the bundle of rags turned to leave. "How would you like to go home with me? I live where there is always enough to eat, and you could take care of the horses, and weed, and help round generally. Come, what do you say?"

"Horses!" said the mite, eagerly. "Oh, I loves horses, sir! We used to live in the country when I was a little chap, and father, he owned a horse. I used to ride him, too! Go into the country? Golly! I guess so!"

"Well, well, give your papers to that boy, then; he has sold most of his. That's right. Come along now, I can't take such a looking object home with me. Why, Maria wouldn't let us in!"

The mite was fitted with a decent suit of clothes, and finally arrived at the place where there was plenty to eat, as happy as a king, and ready to worship the kind old gentleman who had rescued him from his miserable street life.

He was called Harvey, now, and soon ceased to deserve his old appellation. He did willingly whatever was given him to do, but his chief delight was the sleek span of bays, "Kitty" and "Jess," who occupied comfortable quarters in the large barn. He watered, and fed, and groomed them untiringly, and when, sitting beside his master in the new spring wagon, he was allowed to hold the reins, his cup of bliss was full.

But one day trouble appeared in the shape of a rough looking fellow who applied to Mr. Adams for work. It was in the busy season, and he was engaged without much attention to references. For a time all went well, but Mr. Adams soon discovered that his new hand had a trick of beating the horses, kicking the cows, and otherwise maltreating the animals about the place, and being a humane man he dismissed him with a lecture upon the wickedness and cruelty of his conduct.

Then the farm-hand became abusive, and swore with many oaths, that he would have revenge. Mrs. Adams was alarmed and begged her husband to have the man arrested, but he only laughed at her fears, saying: "Such talk never amounted to anything."

One lovely afternoon in autumn, Harvey had a half holiday, and he wandered along through the woods, drinking in the beauty around him, the gorgeous tints of the trees, the purple and gold of the wood flowers at his feet, and the dreamy blue of the sky that showed in patches overhead.

Suddenly the sound of voices broke the stillness, and Harvey peering through some bushes, saw the man who had worked for Mr. Adams, and another man, still more rough and evil-looking, lounging upon the ground with their guns beside them. They had built a fire, at which they were cooking some rabbits, and as Harvey looked, a dog bounded through the undergrowth and crouched down beside it.

The men were discussing a plan which made Harvey's heart beat so violently as he listened, that he shivered with dread lest they should hear it and discover his retreat.

They had decided to burn Mr. Adams' barn, in which was stored all the fruits of his long summer's work, and the ex-farm hand added:

"Since he sets such store by his horses and cows, it will be a mercy to send them where they will never by 'abused' any more. There's 'Brindle' and 'Daisy' and 'Rose,' besides the horses, that ought to keep the family in roasted meat for some time to come."

The two wretches burst into a loud laugh at this sally, and at the same time the branch upon which Harvey was leaning, broke with a sharp crack. Even then he might have escaped, but the dog sprang up with a low growl, and a moment after he was a prisoner.

Poor Harvey! as he looked up into the cruel, scowling faces of his captors, felt that he could hope for little mercy from men who could deliberately plan to roast alive helpless animals. Indeed, the rougher of the two men advised that Harvey should be put out of the way at once.

"He's heard what we've had to say, and he'll blab. 'Dead men,' and young ones, too, 'tell no tales,'" he added grimly, seeing that his companion hesitated.

"But we might swing for it," objected the farm hand. "See here, young one, we'll let you go scot free, on one condition. You hold up your hand and swear like I show you, not to breathe a word of what you've heard, or by ——! you'll not live long enough to say your prayers." He picked up his gun as he spoke, and held the muzzle against Harvey's breast.

Poor Harvey! A sickening feeling of fear and faintness seemed to stifle his breathing, and arrest his very heart beats. The cruel, determined faces of the men seemed like demons, and he looked around the lonely woods, then at the gun, and then he took the awful oath which the men bade him repeat, that he would not reveal anything they had said.

He was at last allowed to go, and the farm hand called after him:

"I say, young one, you can tell when the deed is done, and don't you forget it. I want the old man to know who his good luck comes from;" and he added to his companion, "No danger of his giving us away, he's got no more pluck than a chicken, and he's scar't most to death."

When Harvey reached home, supper was laid in the large kitchen. Mollie, the "help," was turning flannel cakes, Mrs. Adams was pouring the tea, and Mr. Adams turned from the sink, where he had been washing his hands, and spoke, with a genial smile:

"Well, Harvey, my lad, did you have a good time? Had a nice walk, eh?"

"Yes sir, no sir, part of the time," stammered poor Harvey, with such a miserable face that the good farmer stared in astonishment, and Mrs. Adams, noting his pale face and trembling limbs, exclaimed:

"Bless the boy! he looks fit to drop! What is the matter, child?"

"Nothing," sobbed Harvey, and bursting into tears he rushed away from them all, up to his own little room under the eaves.

Pretty soon Mrs. Adams bustled up with a bowl of hot tea and some nicely buttered toast, and when she found that he could not eat, she bathed his aching head, tucked him into bed, and even left a motherly kiss upon his cheek.

That kiss made Harvey feel ten times more miserable than before. How kind they were to him! How could he let them be wronged out of so much of their hard-earned property? Then the horses! Ah, that was the bitterest of all! "Kitty" and "Jess," whom he had loved and petted, and who also knew him and would whinny with delight whenever he entered the barn. He had taught them to bow their heads when he gave them an apple or anything especially nice, and now he was going to let them suffer a horrible death! Great beads of sweat started on his forehead, and he sprang from his bed, intending to rush down stairs and reveal the whole wicked plot, but he stopped before a picture of Christ blessing little children, which good Mrs. Adams had hung in his room. The moonlight fell broadly upon it. Had not Mrs. Adams said that God hated liars, and had he not solemnly sworn to keep silence?

Harvey never forgot the terrible hour that followed. He heard the family retire, and waited fearfully for any sound outside. At last he knelt and prayed earnestly that God would show him some way out of his trouble. Then he went to the window and looked out at the great barn.

Suddenly a thought flashed into his mind. He stole softly down stairs, seized the tin horn which Mrs. Adams used to call her husband to dinner, and letting himself out, ran swiftly across the moonlit space between the house and the barn.

He stopped a moment to think, and then climbed up over the mows and hid himself in a nook under the rafters.

One hour passed! two! Harvey's courage seemed to ooze out at his finger tips. If they came they would surely kill him, and then—— Ah! what was that? A stealthy tread outside, and the great doors creaked softly as they were shoved apart, then a whisper which seemed to freeze Harvey's blood:

"Here! pour on plenty of ile, and——"

Toot! toot! toooot!

"It's that devil's brat?" exclaimed one of the men with a furious oath. "Help me find him quick, or we shall have the neighbors on us."

Toot! toooot! toot! toot! went the old horn. Bow! wow! wow! came from the dog in his kennel, and the chickens on their roosts near by set up a tremendous cackle.

Toooot! toooot! toot! The two ruffians seeing that their game was up, rushed for the door, but were met by Mr. Adams and a crowd of the neighbors, who, half dressed, had rushed out to discover the cause of the commotion.

Well, "Kitty" and "Jess" were saved, the men were sent to prison, and to-day Harvey writes his name, Harvey Adams, with a flourish, and calls the farmer and his wife, father and mother. He goes to school, and his teacher assures his proud parents that he is a fine scholar and will be sure to make his mark one of these days.—*New England Farmer.*

An Electrical Experiment.

A Cheap Toy, and Plenty of Fun for the Little Folks.

"A curious electrical experiment is described in one of the French journals, as follows: A small pasteboard box is provided with a glass lid, which is coated on the upper surface with one or more thin layers of collodion, but not enough to render it opaque. A number of figures representing insects and the like, and made of cotton or sponge, are placed within the box. When now the collodion surface is rubbed with dry fingers in dry weather, the insects are made to move about in an interesting manner as they become electrified."

The Territorial *Enterprise* of February 7th, gives the following in the same direction, which will be found especially interesting to our young readers:

Over a year ago we published an account of this experiment. John S. Orndorf, of the firm of Orndorf & Adkison, book sellers and stationers, in wiping off boxes that had glass lids, discovered that particles of lint, bits of thread, paper and the like, flew up from the bottom of the box and attached themselves to the glass, moving about as though they were alive. Further experiment showed him that the same thing took place in the show-cases, when the glass of the tops was rubbed with a handkerchief, but on a larger scale. He made butterflies and other insects, some three inches long and two inches wide, of colored paper, also little balloons and a great many other things which, being placed in a show-case, performed in a really comical manner when the glass was briskly rubbed. The air here being dry and light, no collodion coating is required. The show-cases used in the experiment are eight or ten inches in depth, yet the artificial insects would readily hop from the bottom up against the glass and dart about from place to place. Often an insect would be seen to leave its place, swoop down almost to the bottom of the case, then rise and attach itself to the glass at another point, from one to two ft. away from where it had its first hold. Sometimes two or more of the insects would be seen to suddenly dart at one another, cling together and fall to the bottom of the case, as though fighting, and on touching the bottom of the case they would separate, and darting back take new places on the glass. When a lot of small insects made of the bright, artificially-colored mosses imported from Europe are used, the effect is very fine, and those who see the experiment for the first time can hardly be made to believe that the bugs, worms, butterflies and moths are not alive. The effect may be produced (in this climate) by laying a light of glass upon the lid of any ordinary paper box.

Our Matrimonial Antipodes.

EDITORS PRESS:—"That which hath been," says the preacher; it is "that which shall be!" Some very curious things have been; so, if the preacher's dictum be correct, some very curious things will be. Of the very curious things that have been, one has lately come to our knowledge. Its record has been among us for years, but that record was in an undecipherable script.

Of the three forms of Egyptian writing, hieroglyphic, hieratic and demotic, the last is far the most difficult, and only during the last five or six years has become intelligible to the most cultured Egyptologists, some half dozen men perhaps, in the world. Many documents in this occult demotic script have lain dark and dumb for centuries in various archives. Now persevering science has struck the spark needful to their illumination, and such light as they may have for us is once more radiant. A page of history is lighted up which shows how woman's rights were advocated, and successfully advocated, centuries before our first bluestockings were heard from. I use "successfully" in a qualified sense. Women were successful in obtaining something more than equality. The infatuated husband, having *accepted* a wife on trial for one year, at the end of that year, if the wife proved acceptable, *established* her as his wife for life, and made over himself, goods, chattels, lands and cash to this established wife, merely stipulating that she should bed and board, embalm and bury him. Here is a sample contract:

No. 2439. Papyrus of the Louvre collection in Paris.

A certain Petorpra assigns to his wife, Neshorpchrat, not only his house and all his landed property, present and prospective, but likewise his "silver and copper money, his furniture, and all the title deeds and documents concerning his property, not only in the holy city of Thebes, but in any other part of the country."

And here is a sample of a wretched victim's stipulation, with which he, in then current phrase, would have written, "my heart is satisfied." Pchelchons is his name, and Neschons his wife's:

"It is incumbent upon thee to take care of me during my life, and to charge thyself with the expenses of my embalmment and my memorial chapel after my death. Neither son nor daughter has any concern in this deed. It is for me to protect thee against claims of theirs. Take, therefore, this surrender of my property forever."

Neschons, in truth, stepped into the place of Pchelchons, and inherited his property during his lifetime, he becoming a mere instrument in her hands, with nothing to do but act as her agent and obey her commands. It is not wonderful that the Greeks found abundant matter for pleasantry in facts such as these; nor that, while Diodorus kept strictly within the bounds of truth in stating that "Egyptian husbands promised in their marriage contracts to submit themselves in all things to the power of their wives," other writers, as Sophocles and Herodotus, indulged in some satirical license when they averred that the women did all the trading and marketing, while the men sat at home at the loom.

It is obvious that before the woman thus almost entirely usurped the man's place, the male biped was so sunk in sloth and cowardice as to have entirely lost all manly vigor and virtue, and had become the easy prey to a hardier and more masculine race; that, if possible, the Egyptian nation was then even lower in the scale of humanity than it is at the present day.

Your readers may be left to draw such inferences as their respective bias teaches them. I favor "woman's rights" entirely in the sense that a woman should have all such rights as pertain to her as sister, mother, wife or damsel (*dame seule*, or single woman); in this last character the right of earning an honest livelihood in any fitting capacity, not only *unhindered* therein, but protected and assisted by that chivalrous spirit which is inherent in every man worthy of the name. I cannot, however, divest my mind of the idea that neither the characters, capacities nor qualities of ideal manhood and ideal womanhood are identical. To endeavor to prove them so is to give the lie to Nature's entire handiwork. I neither admire masculinity in a woman nor effeminacy in a man.

EDWD. BERWICK.

Carmel Valley, Cal.

PUT IT ON AT ONCE.—A loose red woolen flannel shirt should be worn next to the skin, both summer and winter. It must be "loose," so that its moving upon the skin may keep up a good circulation there; "red," because white flannel fills up, becomes stiff and impervious; "woolen," because woolen flannel conveys the perspiration from the under to its outer surface, where either the cotton shirt absorbs or the air dries it without injury to the body. On account of these properties, sailors wear woolen flannel even during midsummer in hot countries. Of course, a very thin material should be worn in summer.

A GERMANTOWN man, who owned the house next to him, refused to rent it to a young couple, because they had children. He has since rented it to four old maids, who, for the sake of companionship, have bought a peacock, a pair of guinea fowls, two howling dogs and a parrot.

Chaff.

NATURALIST: Can a wolf become fond of a man? He can, and would just as soon have him raw as cooked.

ON being asked what he thought fire-flies were made for, a little boy answered, "I think God made them for candles to light the little frogs to bed."

"WE approach Thee, O Lord, under the auspices of the Essex County Agricultural Society," was the modest phrase with which the clergyman offered the opening prayer at a Massachusetts fair.

"PA, do horses run away with wagons because they love 'em?" "Well, I should say not; but what put that absurd notion into your small head, my son?" "Why, pa, it's in the paper. Whenever a horse runs away the paper says 'a horse attached to a wagon.'"

SAYS the London *Truth:* "The Americans certainly are an ingenious people. Finding that the boxes in which American apples were sent in such large quantities to this country were afterwards of little use, they now pack the apples in coffins, which a correspondent assures me command a ready sale."

PEABLOSSOM, a young saddle-colored youth, was up before the Recorder for stealing a pair of shoes from Mose Schaumburg's store. "Don't you know it was not right to take those shoes?" "Yes, sah; I knows I didn't take de right shoes. My mudder tole me dey was not de right ones as soon as I bring 'em home. De highpriced ladies' shoes on de shelf was de right ones; but I couldn't reach 'em, sah."

Teaching Children Manners by Example.

[Written for the RURAL PRESS by W. F. O.]

"Pease etstuse me, mamma?" said Harry, as he finished his meal the other day.

"Oh, isn't that sweet!" exclaimed Mrs. Graham, who, together with her husband, had been invited to dine with Mrs. Owens.

Before Mr. G. had time to reply to his wife, Mrs. Owens said, "No, my son, I cannot excuse you until you have placed your knife and fork in proper position."

While the little fellow was arranging his knife and fork Mr. G. spoke as follows: "Yes," said he, "it is certainly a pleasure to see children polite and mannerly, especially at the table. It is really a pleasure to have the little ones around the table with us, when we can feel that there is no danger of being mortified at their disorderly conduct."

"By the way, Mrs. Owens," said Mrs. Graham, "it seems to me there must be a certain adaptability in parents in thus being able to so train children that their presence in company may be regarded as a pleasure."

"I think not," said Mrs. Owens. "My opinion regarding this matter is, that children are taught by *example*. For instance, my husband and myself make it a point to always be polite to our children, and see that they are polite to each other. If we request them to perform any duty, we find it no trouble nor do we forget to say 'please,' and the duty having been performed, it is only two small words to say, 'thank you.' There is no good reason why we should not raise our children so that they will be an honor rather than a disgrace to us. Impress upon their young minds the very important lesson that 'civility costs nothing.' And when we have ceased to be with them in the trials and struggles of life, they will remember us with gratitude and pride."

Inquisitive Woman!

[Written for the RURAL PRESS by MRS. W. D. ASHLEY.]

Blessed man may ask questions the length and breadth of the land, may stride the deck of the ship bearing him o'er wide seas plying officers and sailors for facts, may drain every buss driver dry and collapse every hotel clerk or usher of public buildings with his exhaustive pumpings; but woman must be content with what she can see or hear in earshot of well-informed man. Thank the Lord that our eyes are in front of our ears, so that we can see more than we can get a chance to hear!

Of course he'll answer her questions politely, wondering what the inconsequent, inquisitive creature wants to know for. He'll take a run to a distant town, gaining items all the way, till his arms are full of faggots wherewith to kindle ablaze the fire of narrative to warm his hearers; while she watches the stretching valleys, mountains and streams, not certain of their names, or of the names the glib conductor calls out for the towns. He'll stroll about town asking questions of everybody, anybody, it's all right. She'll be entertained in the best room, with all the sweet prosperities, small cares and troubles of her friend, or sit in the hotel, perhaps take a flying drive through the town, scrape a few facts into her traveling bag and return for man to compare her to the walking stick that was carried around the world, and yet, as Sydney Smith said, was only a walking stick still. Is she persistent in her inquiries, soon she feels the serpent breath of slanders and retires behind the rampart of small talk, neighborhood news, fashion, etc., while man marvels at the littleness of woman's mind.

Stockton, February 14, 1882.

Young Folks' Column.

Our Puzzle Box.

Riddle.

I serve many and varied purposes. I am the honest man's friend, the iniquitous man's deadliest enemy. I travel over the world at will, and puny man has little power to hinder my approach. My capabilities can hardly be estimated. Whatever place I honor by my cheer thrives and prospers, while the places where I am never seen are gloomy and deserted. When I move abroad the flying express train and the ball which speeds shrieking from the cannon's mouth travel at a snail's pace in comparison with the velocity of my motions. I have existed for untold ages, and shall continue to exist so long as any portion of the universe is peopled with living beings. The history of the past records the result of my labors, the present bears testimony to my vast utility and power, and the future appears hopeless indeed when contemplated as devoid of my presence. Thus, it seems, I am a great comforter. I soothe the pains of the afflicted, ease the hearts of the sorrowing, cheer the minds of the desponding. I am the friend of man, and labor ever for his advancement, although (such is human ingratitude) he seldom rewards me by even a thought. Finally, and most wonderful of all, although visible, I am intangible, and no one has ever felt my presence.

MELANCTHON.

Hidden Towns.

1. Mag Raymond has left this vale of tears.
2. I sow in neither kind of soil, neighbor Brown,
3. He placed his hand under her chin and playfully raised her head.

UNCLE CLAUDE.

Syllable Puzzle.

My first is novel; second is discovered; third, territory; whole is an island.

JERRY.

Cross-word Enigma.

My first is in man, but not in boy;
My second is in pain, but not in joy;
My third is in light, but not in dark;
My fourth is in forest but not in park;
My fifth is in pot, but not in kettle;
My sixth is in strong, but not in brittle;
My whole was an English poet.

ZENA.

Reversals.

1. Reverse a measure and obtain part of a house.
2. Reverse a narrow plank and obtain a falsifier.
3. Reverse to haul and obtain to keep guard.
4. Reverse a band and obtain an exclamation of contempt.
5. Reverse clothing and obtain to boast.
6. Reverse a vehicle and obtain the same vehicle.

C. B. A.

Answers to Last Puzzles.

NUMERICAL ENIGMA.—Captain John Smith.

DECAPITATIONS.—1. Cauk, auk. 2. Chop, hop. 3. Crake, rake. 4. Hash, ash. 5, Stare, tare. 6. Trow, row.

CHARADE.—Passing away.

BLANKS.—1. Rat, tar. 2. Ports, sport. 3. Part, trap.

TRANSPOSITIONS.—1. Dray, yard. 2. Dan, and. 3. Pot, top. 4. Mite, emit, time.

How Cap was Cured of Disturbing the Cats.

[Written for Our Young Folks by G. W. T. C.]

We have a fine sociable dog on the ranch named "Cap." He is a good-natured dog, and fond of a frolic. After the men have their dinner he has his, and by the time they are ready to go for their teams, he is ready to accompany them. There was one thing he got to treating himself to pretty regularly, and that was to start from the house on a run around the corner of the barn, to the south side, where the cats of the ranch took their noonday sun baths. He knew the cats were there, and never thought of looking around the corner to see if they were there, but aimed to make the surprise as complete as possible by dashing headlong right amongst them; at which times cats could be seen climbing in all directions. Cap enjoyed the sport amazingly, and it became his regular after-dinner exercise, which all the folks on the ranch were well aware of.

One morning one of the men killed a large wild-cat along the creek and brought it home, all unknown to Cap. "Now," says he, "we will have some fun." Cap was kept out of the way. The wild-cat was taken to the cats' sunning place on the south side of the barn and set up, as natural as life, facing the corner around which Cap always made his appearance.

After dinner the men lounged around till Cap got his dinner, when they started for the barn. Cap frisked around and then started for the cats around the barn. He never stopped until he ran slap up against that wildcat, looking fierce enough to eat him. The shock was so great he nearly fainted; he was so scared he couldn't bark, his tail fell to the ground and his tottering legs could hardly take him away from that awful cat. He staggered across the yard as best he could before he ventured to look back; he was too weak to make more than one bow-wow as he crept into the blacksmith shop, where he staid the rest of the day.

The next day he felt better and after dinner made a couple of bounds towards the barn, when he remembered the wild cat, and turned short about and went around the house.

He never goes to the south side of the barn any more, and the cats enjoy their sun baths undisturbed—not suspecting the good turn one of their wild sisters from the woods had done for them.

Point of Timbers, Cal.

"I SAY, mister," asked a dirty-looking chap, "will that dog bite?" "Guess not," replied Fogg. "He won't bite you; or at least I wouldn't if I were a dog. You'd have to wash yourself first."

Good Health.

Nature of the Diphtheritic Contagium.

In the spring of 1880, Drs. H. C. Wood and H. F. Formad, under the auspices of the National Board of Health, began a series of experiments upon rabbits with a view of determining the nature of the contagium of diphtheria. The animals were inoculated with diphtheritic membrane taken from the throats of human patients.

In the course of these researches, it was determined that there is nothing specific in the production of false membrane in the trachea, and that traumatic pseudo-membrane accurately resembles the diphtheritic, except that micrococci are not quite so abundant in it. The experimenters conclude that the disease produced by the diphtheritic inoculation was really rabbit diphtheria, because the poison giving rise to it, the symptoms during life, and the *post-mortem* lesions were identical. In addition to this, the contagiousness of the disease was retained. They accept the experiments of Curtis and Satterthwaite, showing that the infectious character of diphtheria depends upon the solid particles of the membrane; furthermore, their researches lead them to conclude that the micrococci are in close relation with the essential poison of diphtheria, being either the virus itself or the producers of it. The results of culture of these bacteria lead them also to assert that there is no difference between the micrococci of simple sore throat and those of diphtheria, except in activity of reproduction; the two are the same organism, existing under different conditions.

Drs. Wood and Formad believe that the vitality under artificial culture is in direct proportion to the malignancy of the case from which the plant is taken. They have succeeded in producing diphtheria by the inoculation of cultured micrococci, but never with those of a generation later than the second.

M. Pasteur has indicated that an inert organism may become virulent, and *vice versa*, and in the same way they believe themselves able to prove that the micrococci of the mouth are really identical in species with those of diphtheria. That oxygen may be potent in converting a virulent into a non-virulent organism, they regard as probable, from the effects of exposure of dry membrane. The micrococci of a catarrhal angina or trachitis may, under favorable circumstances, be transformed into micrococci of diphtheria, and a self-generated diphtheria (*i. e.*, endemic) ensue; or external conditions may favor the transformation of inactive into active organisms, and these may lodge in the trachea and also cause diphtheria (*i. e.*, epidemic). In the first instance, the disease may spread by organisms exhaled by the breath. Diphtheria will vary in contagiousness according to the development of the virus—malignant diphtheria will be more contagious than the mild endemic form. The conditions outside of the body which favor the transformation of inactive into active micrococci, and agents destroying these organisms, remain yet to be studied.—*Phila. Med. Times.*

A SKIN TINGED WITH YELLOW, that is, abnormally so, is the outward and visible sign of a lack of regularity in the performance of the bile-secreting function, and that the biliary fluid has strayed from its proper channels, impeding digestion, disordering the bowels, and producing aggravating internal disorder. No time should be lost, under such circumstances, in resorting to the standard anti-bilious remedy, Hostetter's Stomach Bitters, the good effects of which are in nothing more conspicuously shown than in its reformatory action upon the great bile-secreting organ. Renewed activity, when the liver is sluggish, a regular action of the bowels, the disappearance of sick headaches, heartburn, flatulence, and pain in the region of the organ principally disturbed, may be anticipated with just confidence by any bilious subject who begins with a course of this peerless regulator, and debilitated or nervous sufferers experience the greatest benefit from its tonic influence, while its efficacy in rheumatism and kidney weaknesses is equally well authenticated.

DEATHS FROM SINGULAR CAUSES.—Two distinguished men have just died in Paris from a singular cause. Col. Adan, Director of the Institute Cartographique, thought he had a chair behind him, and in sitting down fell with all his weight on the floor. He died within a short time from the effects of the accident. About 10 days before M. Pirson, Governor of the Banque Nationale, went to a dinner party at the Spanish Legation, and sat beside the hostess. She rose from the table, and then, continuing a conversation, resumed her seat. M. Pirson followed her example, but a footman had meanwhile removed his chair, and in his fall he injured his spine and survived only a few days.

HYGIENE OF BEDS.—Beds should be made of such material as will absorb as little as possible of dampness or impurities of any sort. One of the most important means of keeping a bed in a wholesome condition is thorough airing every morning. Immediately after rising, the occupant should throw open the bed and the windows of the room, thus securing a thorough removal of the foul emanations from the body which accumulate during sleep. When this is not done, the foul products accumulate, and the bed may become a source of disease.

Domestic Economy.

Thriving on Uncooked Food.

Our contributor, I. B. Rumford, of Kern county, is giving Eastern people an idea of his new theory of sustenance. He writes to the N. Y. *Tribune* as follows: We began the experiment a few months ago of living entirely upon uncooked food, consisting of nuts, fruit and grainia, the latter made of any kind of grain, though usually of wheat or rye, ground hardly fine enough to go through ordinary cheese strainer cloth, the bran cut up just as fine as the rest of the grain. The result of our experiment thus far has been so favorable in every respect, that we shall probably continue it the rest of our lives. It has every advantage over the cooked diet; saves a world of labor to the women; dispenses with the unpleasant heating of the house with a cook stove in summer; saves a large amount of fuel, which is quite an item of labor, even here where we only have to cut it. It soon becomes quite as palatable, satisfies the appetite better, and keeps it satisfied longer; and, better than all, has completely cured my dispepsia, which had been a companion from youth until over 48 years of age; also restored my sight, so that spectacles, which had become continually necessary, are no longer used. We shall make a study of how to perfect this diet in every possible way, and to that end ask for help from any of your correspondents in regard especially to the best method of cleaning grain. We do not mean taking the bran off, but of scouring the outer coat of the grain to make it clean, as there may be something better than washing with the hands and water; something like a dry burnishing machine.

We make a cake by crushing raisins between two iron rollers so as to mash the seed fine, as they are a valuable part, and chop fine, with a hand chopping knife, then mix with grainia; as everyone is fond of it, it goes off so fast we would like to know if there is not some kind of machine that would cut up the skin while the seed was being crushed, and if it would knead in the grainia all the better? Again, would it be possible to press such meal into cakes without adding moisture, and what pressure would be required? Have grape seed, tomato seed or blackberry seed been analyzed, and where could the result be found? We find the seed of ripe Muscat raisins a great aid to digestion. I hope to visit others who have used the uncooked diet for two years; will give you some of the results, with such experience as we get from time to time, if you desire.

RABBIT STEWED WITH CABBAGE.—Trim off the stalk and outside leaves of a fresh young cabbage. Cut it into four; wash it and leave it in cold water. Cut up the rabbit into joints; season it with a teaspoonful of pepper, a saltspoonful of salt, the same of mustard, and a teaspoonful of powdered mace. Cut up a pound of the thin part of pickled pork into short slices a quarter of an inch thick; trim, wash and cut up two large leeks. Put the whole, except the cabbage, into a saucepan, with just enough water to cover the rabbit. Boil up slowly. Skim and simmer for an hour and a quarter. Put in the cabbage; press it well down into the gravy, and continue to simmer without the lid for another hour, or until the cabbage is tender; press tha cabbage down often. Serve the whole in the same dish.

RYE MUFFINS.—Into a bowl put one and a half pints of rye, half a cupful of sugar and a little salt; put into the sieve half a pint of flour, one teaspoonful of saleratus and two of cream of tartar; or, if desired, three teaspoonfuls of baking powder may be used instead of the above; mix thoroughly with the flour, and then sift into the material in the bowl; mix all thoroughly while dry; then add two well-beaten eggs and milk enough to make a batter that will drop from the spoon readily; fill the muffin cups about two-thirds full, and bake in a quick oven.

HORACE GREELEY'S MINCE PIE.—A cup of raisins chopped fine, one cup of sugar, one of molasses, one of vinegar, a tablespoonful of cinnamon, a teaspoonful of cloves, one and a half cups of soda crackers, broken, not pulverized. To this add two cups of boiling water and a little salt. For ourselves we prefer plenty of brandy and wine and lots of other good things in mince pies.

GERMAN MUFFINS.—Mix a quart of wheat flour with a pint and a half of milk a little warm, half a teacupful good yeast, two eggs well beaten, a teaspoonful of salt and two tablespoonfuls melted butter. Set the batter to rise in a warm place, and when risen butter your muffin cups and bake quickly.

RICE WAFFLES.—One large cup of boiled rice, two eggs, a teaspoonful of corn-starch, one of melted butter, one quart of milk, in which dissolve half a teaspoonful of soda, and flour enough to make a thick batter. Mix well in the flour a teaspoonful of cream of tartar. Butter your irons and have them hot when you go to bake.

FRUIT CAKE GOOD FOR A YEAR.—Half pound of flour, same of sugar, six ounces of butter, a pound of currants, a pound of raisins, some citron and cloves, four eggs, a gill of brandy, and a small pinch of soda.

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SAN FRANCISCO:

Saturday, February 25, 1882.

TABLE OF CONTENTS.

EDITORIALS.—Pests and Diseases of the Hop Plant; A New Gentian, 129. The Week; A Test for the Richness of Milk, 136. Machines for Grape Grafting, 137.
ILLUSTRATIONS.—A New Gentian, 129. Machines for Grape Grafting, 137.
CORRESPONDENCE.—Fruit Culture in the Foothills; Lassen County Notes, 130.
THE VINEYARD.—Grape Cuttings and Grafting; Propagation of Vines by Cutting, 130.
SHEEP AND WOOL.—The Mohair Business, 130
HORTICULTURE.—On Keeping Pears; "The Præparturiens Walnut"—Dwarf or Standard? 131.
THE FIELD.—Fallowing and Fertilizing, 131.
THE SWINE YARD.—Use a Good Boar; Working up the Hog Product at Home, 131.
HOME CIRCLE.—Make Childhood Sweet (poetry); Harvey's Brave Deed; An Electrical Experiment; Our Matrimonial Antipodes, 134. Chaff; Teaching Children Manners by Example; Inquisitive Woman, 135.
YOUNG FOLKS' COLUMN.—Our Puzzle Box; How Cap was Cured of Disturbing the Cats, 135.
GOOD HEALTH.—Nature of the Diphtheritic Contagium; A Skin Tinged with Yellow; Deaths from Singular Causes; Hygiene of Beds, 135.
DOMESTIC ECONOMY.—Thriving on Uncooked Food; Rabbit Stewed with Cabbage; Rye Muffins; Horace Greeley's Mince Pie; German Muffins; Rice Waffles; Fruit Cake Good for a Year, 135.
PATRONS OF HUSBANDRY.—The Testimonial to Dr. Grattan; Grange Notes; Meetings and Elections; Meeting of Stockton Grange, 132.
AGRICULTURAL NOTES, from the various Counties of California, Arizona, Montana and Nevada, 132-3.
ENTOMOLOGICAL.—Shade and Borers; French Insect Destroyers; A Year's Cost of Phylloxera Fighting, 136.
QUERIES AND REPLIES.—Hardy Eucalyptus Wanted; The Linnet Nuisance, 136
NEWS IN BRIEF on page 133 and other pages.

Business Announcements.

Agricultural Implements, Jackson & Truman, S. F,
Præparturiens Walnut Trees, F. Gillet, Nevada City, Cal.
Oil Cake Meal, Kittle & Co., S. F.
Small Fruit Plants, C. M. Silva & Son, Newcastle, Cal.
Road Machine, S. Pennock & Sons Fort Wayne, Ind.
Cards, Stevens Bros., Northford, Conn.
Santa Cruz Co. Lands, "Excnange & Mart," Santa Cruz.

The Week.

As we write it is Washington's birthday, the 150th anniversary of the event which proved of so great import to this country and the world. The day is a national holiday, public institutions are closed, and the sounds of trade and traffic have well nigh ceased. The day is being devoted to rest and recreation and to public demonstrations. The leading streets are paraded by the soldiery, the banners are flying from the flagstaffs and suspended across the streets. Public gatherings give opportunity for the liberation of patriotic eloquence, and in different ways the day is being observed as was intended by the act declaring it a national holiday. May the people never forget the day.

In the country there is far more of the holiday feeling prevailing than seemed possible a short time ago. The rains have been general and though not generous have cheered all by their present effects and by the promise of more as growth requires it. There is reason to expect a very good year throughout the State, and an aggregate of produce which will be creditable. Here and there a district will probably but hold its own and require courage to wait for another more productive season, but the general outcome of 1882 will be better than has been hoped for during the earlier portion of the winter.

A Test for the Richness of Milk.

Ever since dairying rose to rank as an agricultural specialty, there has been a call for a simple device for ascertaining the richness of the milk of dairy cows. The analysis of milk is a complicated work which cannot well be conducted outside of the laboratory, and the practical test of churning certain amounts of each cow's milk involves too much labor to be entertained by the manager of a large dairy. The percentages of cream, as shown by the cream gauges which have been widely used, is not a conclusive test, for cream varies greatly in its butter equivalent. The specific gravity of milk, as shown by the lactometer, is also afected by so many conditions as to be untrustworthy as indicating butter value. Some other simple device which will show closely the fat contents of the milk has long been a desideratum in dairy practice.

Wilfred Page, who has lately forsaken city trade to gratify his agricultural tastes in the management of the splendid Cotate ranch in Sonoma county, brought us the other day a milk-testing appliance known as Feser's lactoscope, which he proposes to test as a means of learning the relative richness of the milk yielded by the cows of the Cotate dairy. We have not had leisure to test the one which Mr. Page brought us, but we propose to describe it and state its standing, leaving the record of test to come at some future time.

The lactoscope was devised by Prof. Feser, of Munich. It relies in its work upon the fact that the opacity of milk comes from the presence of the oil globules; that is, the white color comes from the refraction of the light by these fat bodies. This is shown practically by the fact that removing a portion of the fat by skimming the cream reduces the whiteness of the milk; and it is demonstrated by the microscope, which (in effect) so separates the particles that the white color is removed. Under the microscope milk appears as transparent as water with the fat globules, also colorless, floating in it. As the color then comes from the butter globules the greater their number the more opaque the milk becomes, and a device which tests the opacity of the milk becomes a test of the amount of fat. This is the theory of the lactoscope.

Prof. Feser applies this theory as follows: He uses a glass tube closed at the bottom, which is somewhat contracted, and open at the top. A small tube of milk-white glass, closed at both ends, is fixed in the bottom of the large tube, so that there is a free space between the small tube and large one. The white glass is marked with dark lines. The large tube is graduated in its upper part so as to show cubic centimeters on one side and the percentage of butter fat on the other. A cubic centimeter of the milk to be tested is put into the contracted lower end of the large tube, and occupies the space between the sides of the large tube and the white glass of the inner tube. The black lines cannot be seen through ordinary milk. Water is added until the lines become visible, and the point at which the mixture of milk and water stands on the butter fat scale shows the percentage of butter fat in that sample of milk.

Dr. Voelcker, who has an article on this lactoscope in the "Journal of the Agricultural Society of England," says: "In most cases it shows without much trouble, in a few minutes, an approach to the real proportion of butter fat in milk, sufficiently near to enable an observer at once to form a pretty good estimate of the comparative value of different samples of milk." Hon. X. A. Willard imported one of these instruments for his use, and he writes: "So far as my experiments have been made, I have not failed in a *single instance* in getting satisfactory results, in all cases obtaining true indications, or a close approximation, of the quantity of butter to be secured in setting any sample of milk." Dr. Miles, in charge of Houghton Farm, brought back some of these instruments on his return from Europe last autumn, and has tested them thoroughly in his dairy. He says that with them a person can come within a small fraction of 1% of the amount of butter fat present, and it is so easily employed that any one can test milk in a very few minutes.

The foregoing is the history of the instrument which is to be tested in one of our largest dairies. We hope to give ere long an account of experience with it whether it proves satisfactory or otherwise.

UNIVERSITY ADDRESSES.—We have received a handsome pamphlet published by the State Printer, containing the addresses at the inauguration of President Reid at the University of California last summer. The occasion was an important one, and it is well to have its records thus publicly announced. We suppose our readers who desire the publication may obtain it by application to Rev. Dr. Bonte, Secretary of the Board of Regents, Berkeley, Cal.

NEST-BUILDING.—It is noticeable at this season of the year, that wild canaries and other birds in Oakland are attracted to the pampas-grass plumes for downy nest material. Here is a hint to encourage cheap homes for birds in the city, by leaving the plumes waving in winter winds. Contrawise in bird-pested country places.

ENTOMOLOGICAL.

French Insect Destroyers.

EDITORS PRESS:—Some months since Mr. Felix Gillet, one of our Board of State Horticultural Commissioners, suggested that the wonderful increase of the codlin moth in this State might be due to the absence of some of its natural insect enemies, which probably kept it in check in France and other parts of Europe, as the pest certainly does not do the same amount of mischief there as here. He also spoke of the desirability of ascertaining whether such parasites exist, and, if such is the case, importing some of them to aid our orchardists in their efforts to subdue the noxious insect. I accordingly wrote to M. Chas. Joly, a distinguished French horticulturist, on this subject. The following extracts from his reply may be of interest to our horticulturists:

"In point of parasites, we do not think much of them. We depend more on good culture, on soil adapted to the plants, on proper conditions of temperature, on birds. Tobacco juice will do much good sometimes, but particularly what we call '*insecticides-engrais*,' that is to say slacked lime, sulphur and potash, mixed in various proportions. We have in our Paris horticultural society a good entomologist. Your institution of State entomologists is a capital one, if properly conducted, as insects destroy sometimes one-fourth to one-third of the crops. A good book on vegetable pathology, with proper remedies, is almost as useful as human pathology. Mr. Cooke's book is a good beginning. We have here many books on the subject, but not a complete one."

The above is specially commended to those who advocate the destruction of birds by poisoning or other methods of indiscriminate slaughter. The bitter experience of France when freed from the bird nuisance is but too well remembered in that sunny land.—C. H. DWINELLE, University of California, Berkeley, Feb. 11, 1882.

We understand that this protest is directed against the slaughter of all birds by poison and the like—a method which kills both friend and foe of the orchardist. There seems to be good enough reason for the removal of birds which pay special attention to the fruit diet, and to reduce them without destroying the insect-eating birds is the problem.

In addition to what Prof. Dwinelle writes of the bird question in Europe, we may remark that recent articles in some leading German papers tend to prove that public interest has of late been attracted to the question, and that European nations in general have seen the advantages of adopting preventive legislation, in order to protect the insect-destroying birds whose services to agriculturists are well-known. The countries on the shores of the Mediterranean sea would seem to have been most in need of such measures, and the letter recently addressed by M. De Salvert (President of the French Society for the Protection of Animals) to the French Ambassador at Rome makes a special complaint respecting Italy. It states that twice a year (during their flight to and from more northerly countries) the ranks of the singing birds are thinned by the guns of peninsular sportsmen. The ambassador is asked to use his influence with the proper authorities to induce Italy to follow the example of other European nations, by restraining this wholesale destruction of small birds. From the geographical situation of Italy, the efforts of other countries are neutralized in an appreciable degree by the dangers which await the feathered tribes during their half-yearly journeys through the peninsula. The action of the French government has of late years been calculated to strengthen the hands of the society we have referred to. The Minister of Public Instruction, by his decree of March 31, 1876, urged on teachers the necessity of inculcating the principle that insect-destroying birds are of value to the agricultural interest. A recent protest from Charkow, in Russia, gives prominence to the fact that the ravages of certain insects have much increased since the slaughter of small birds has been general in that district.

Shade and Borers.

EDITORS PRESS:—Reading over Mr. Jessup's article on borers in the last week's PRESS, brought to my mind also a circumstance. Some five years ago I cut down two large bottom oaks that were shading the fruit trees in my orchard. In falling one of them, a cherry tree got broken, and split one side completely off. Although the tree was a worthless variety, I did not like the looks of the wound, and tied old sacks over it, that have been on ever since. The above-mentioned article brought it to mind, so I went and took off the bandage and found the large wound healed over with healthy bark, and the upper limbs of the tree that had lost the shade of the oak are all bored, especially on the side that faces the two o'clock sun. I make it a practice to bandage the stems of my young trees the first year they are set out and until they shade their stems. In pruning my last year's setting I only found one bored, and that was at the top of the bandage. Good culture to promote a vigorous growth and judicious pruning, especially on the south side of the trees, and bandage till we get the necessary shade, and the borers can certainly be overcome.—W. D., Red Bluff, Cal.

A Year's Cost of Phylloxera Fighting.

The different means employed to eradicate the phylloxera cost France $315,895 in 1881. In January, 1882, an estimate was given for a supplementary grant of $200,000 for this purpose in the current year.

BERKSHIRES FOR SOUTH AMERICA.—Tyler Beach, of San Jose, just filled an order for a pair of his thoroughbred Berkshires for South America. The order come through C. Adolph Low, of this city, and was the result of judicious advertising in the "Breeders' Column" of the RURAL PRESS. Mr. Beach's Berkshires are descended from the importation of Gov. Stanford, and are fine animals.

QUERIES AND REPLIES.

Hardy Eucalyptus Wanted.

EDITORS PRESS:—Being one of your subscribers and reading many articles in regard to the Australian gum tree, will you please inform me if they will stand a climate which is sometimes for a few days as cold as ten degrees below zero? I would like to try ten acres if they will grow here. The ground does not freeze over twelve inches. If they will stand the climate (it is about like Siskiyou Co., Cal.), I would be much pleased and benefited by an article on the culture of them from the seed up, and which would be the best species of seed to sow. This State offers a reward of $10 per acre on forest tree culture commencing at three years old and extending for twenty years. I have plenty of suitable land if the trees can stand the winters.—ROBERT MCBETH, Galena, Lander Co., Nevada.

The blue gum (*Eucalyptus globulus*) will not stand such conditions, and we doubt if any of the kinds introduced here will survive them. We have read of species of eucalyptus more hardy than those which are best known here. They are, however, of dwarf or moderate size. The large gums of various species are all native of warm districts and will not survive the cold of Northern California or Nevada. Some kinds of the Alpine forms of gum trees may perhaps be planted with good success. For such moderate climates, and for only small plantations, or single specimens for ornamentation, the following durable and hardy species of compact growth and dwarf habit, and which are indigenous to the mountain districts of South Australia and New Zealand, are said to be the best, as for instance:

Eucalyptus coccifera. A fine and dwarf species, with glaucous leaves of a verypeculiar shape, from the alpine districts on the top of the mountains.

E. urnigera. A similar species from the alpine districts and Mount Wellington.

E. acervula. A medium sized tree like E. viminalis, with broader leaves of a dark green color. The most hardy and distinct species from Tasmania.

E. verucosa. A peculiar and very distinct species from Mount Fatigue, of dwarf (often shrub-like) habit, with fine leaves of light glaucous green.

E. flexuosa. Tree of medium size and habit like the weeping willow tree; leaves, linear-lancet; often falcate, of a grayish green color, from South Australia and Tasmania.

E. nitida (*amygdalina, var: nitida?*), from Hobart's Town, is a hardy species, with linear-lancet leaves, and a similar habit like E. flexuosa, but more of a straight and upright growth.

We are not prepared to say that any of these will be hardy in Nevada. We merely give them as kinds which are hardiest in Australia. We should like to know whether any of them have been tried on this coast and what has been observed of their hardiness. The *Eucalyptus viminalis*, which is wrongly called the "red gum" in this State, is known to be hardier than the blue gum. Who knows how much cold it will survive?

The Linnet Nuisance.

EDITORS PRESS:—I am glad to see the linnet nuisance discussed. With me poisoning apples is most successful, so far. I have tried the lantern by a hedge that has roosting linnets without number, and had no success, except by one man, with light, keeping on each side the edge with sticks for the purpose, and by striking the brush the birds will fly from one side to the other; so they may be killed, or fly away to other roosting places. The poisoned cornmeal process was not successful, but poisoned water is good at times when they seem to be in need of water; therefore, not so successful in winter.—HOMER W. JUDSON, Tustin City, Los Angeles Co., Cal.

HORTICULTURE OF BOSTON AND VICINITY.—Our respected friend, Col. Marshall P. Wilder, President of the American Pomological Society, has done a graceful task in the preparation of a monograph, historical and descriptive, of the horticulture of Boston and vicinity. It is eminently fitting that one who has done so much to encourage and promote this interest should place upon record this account of its development. Col. Wilder is now in his 84th year, enjoying a green old age and serving his country by his wise horticultural counsels and enthusiastic encouragement. Long may he live!

ENLARGING GLENWOOD COTTAGES.—The Riverside *Press* says: Frank A. Miller proposes to commence work right away on a $10,000 addition to Glenwood Cottage. The addition will be two-story frame, extending from the present building to Main street, and will contain nearly 30 rooms. He hopes to get the building along so as to accommodate guests at the time of our fair.

GOOD CHEER.—A word of good cheer comes to us from N. S., of Cambria, San Luis Obispo county, since the late rains. We hope their expectations may be more than realized. It is creditable to look on the sunny side, and it is well to have things turn so there is a sunny side to look upon.

LAST Wednesday was Ash Wednesday, the first day of Lent, the 150th anniversary of the birth of Washington and the Grattan centenary. As the 22d of February it was a legal holiday, and all Federal, State and municipal institutions, including the public schools, were closed.

Machines for Grape Grafting.

To show our readers what has been done abroad in the invention of machines for cutting grape grafts, and thus interest them perhaps in applying American ingenuity to the work, which promises to receive much attention in this State, we reproduce from the recent report of C. A. Wetmore, Viticultural Officer, several engravings and descriptions of French grafting machines.

The use of machines has greatly facilitated the application of grafting to the reconstitution of our vineyards; it permits employing for this work, hitherto reserved for special workmen, any day laborers, or even women; hence may be understood the ardor with which they have been received by French viticulturists.

The most highly estimated and most used up to the present time, of the grafting machines, is Mr. Petit's. Here is an explanation of it given by Mr. Breheret, of the Viticultural Station of Montpellier, in his report on the exhibition of tools and special machines for grafting the vine, organized at the National School of Agriculture at Montpellier, by the Central Society of Agriculture, Herault, in March, 1880.

The grafting machine of Engineer Petit, of Langon (Gironde), is undeniably the first which, for some time now, has attracted the attention of viticulturists, and it is beginning to be quite well known by the agricultural public, who keep up with the progress in mechanical art, for whom there is no need of our stopping to give the smaller details of its construction and its manner of working.

The Petit apparatus consists of two blades: One, *C*, for beveling the cane; the other, *F*, for making the cleft, moved by a horizontal lever swinging about a fixed axis, *A*, and guided by a slide in a frame, *N*. The whole is attached to a casting which serves as a frame, and which is fastened to the edge of a table by means of a screw. The lever, and consequently the blades, have a horizontal reciprocating motion. A handle, *P*, which the workman works with his right hand, serves to set the lever and blades in motion. The blade, *C*, which does the cutting, is situated on the right of the machine; the blade, *F*, which makes the cleft, is very similar to the straight part of an ordinary pruning knife, excepting in size.

Under the first blade, *C*, is found a small table, *T*, which supports the cane while it is being cut. It consists of a vertical part, *B* (Fig. 2), which serves to keep the cane from slipping up out of place, and a doubly inclined surface, *A*, *C*, *D*, *E*, inclined from back to front, and from left to right, serving to give the cane a suitable inclination with regard to the tool. In this part lies the main idea of the machine; it is the most important, hence the application of the same principle has since met with a certain number of imitators. The table is held in place by two little bolts sliding in grooves made in the table, which serves as a framework, and it is supported by four screws, which allow of regulating its position; it should be so arranged that when the lever is at the end of its course, the edge of the blade is even with the upper part of the inclined plane following the line, *A D*.

To do the cutting, the workman brings the lever to him, and, holding the cane with the left hand, he rests it on the table perpendicularly to the butment; with the right hand he pushes the lever forward, and the blade cuts the cane neatly with the desired inclination. The further the cane is placed to the left, the longer will be the cut, so that cuttings of small diameter will be placed toward this side of the table, and the larger, on the contrary, toward the right. Therefore the cut may be of any inclination desired, and two canes of the same size, placed one after the other at the same point on the table, will be cut with the same inclination, which is essential.

Under the left blade, *F*, is a support, *S*, analogous to the table we have just been speaking of, that is, its upper side presents an inclination from back to front, and from left to right. To make the cleft, the workman pushes the lever to the end of its course, places the cane on the support, cuts it above the center, so that the edge of the blade strikes the bevel at the point where the cleft is to begin, and draws the lever toward him until the work is done.

In the *Champin* graft, a blunt end is left; when it is desirable to execute it, it suffices to regulate the position of the table in lowering it until the blade strikes the butment a little above its line of union with the inclined surface.

After a few hours of practice, a workman will soon be able to do the grafting with perfect execution.

Made for the purpose of grafting cuttings or rooted plants that have been dug up, the Petit machine, while doing excellent work, the success of which has already been pointed out during the campaign of 1879, has the advantage of uniting many qualities indispensable to every agricultural implement; simplicity of arrangement and manner of working, solidity, and relative low price, since it is only 35 francs, and will be still lower. This machine, perfectly adapted to the functions which it is required to fulfill, is a simple tool in every sense of the word.

The Berdaguer Machine.

Mr. Berdaguer's machine is used also, which is certainly less perfect than the preceding, but which gives satisfactory results however, and whose lower price renders it accessible by the most moderate purses. In the report before mentioned, Mr. Breheret describes and values it as follows:

Another machine that made its appearance in our region at the time of the Viticultural Congress at Nimes, in September, 1879, is that of

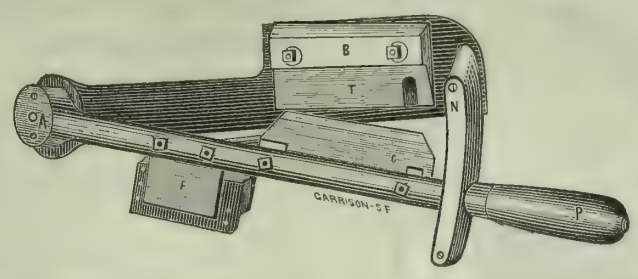

FIG. 1.—PETIT'S MACHINE FOR THE ENGLISH CLEFT GRAFT.

Mr. Berdaguer, *constructeur, rue Childe bert, 17, a Lyon* (Fig. 3). It consists essentially of two blades, with inverted edge, and has a horizontal lever turning on a central axis, which is

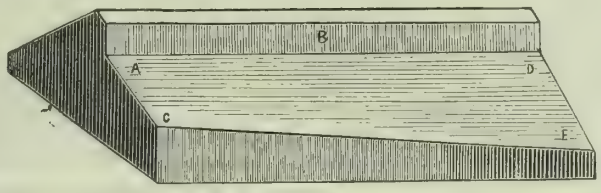

FIG 2.—TABLE CASTING FOR THE PETIT MACHINE.

fastened to a metal plate in which are made six grooves of various sizes. The right blade serves to make the slanting cut, the left to make the cleft, and both are alternately worked by the

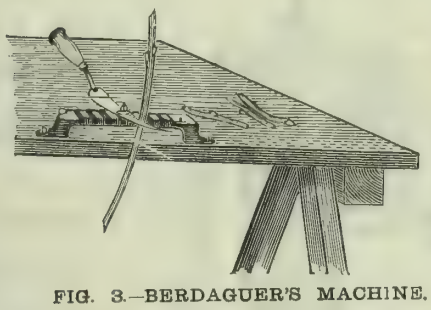

FIG. 3.—BERDAGUER'S MACHINE.

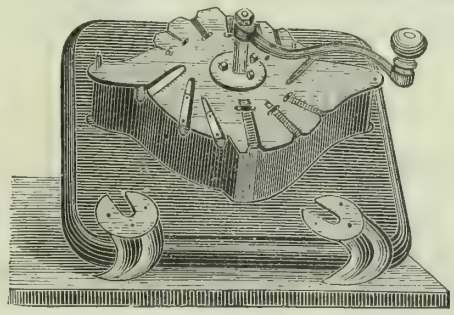

FIG 4.—SABATIER'S MACHINE.

reciprocating movement communicated to the arm of the lever, which is a prolongation of the latter blade.

A butment situated on the posterior edge of the right half of the instrument is destined to serve as a prop for the cane that is cut. Below the first blade, the right hand one, are found three cavities representing, in hollow form, the bevel of an English graft, and serving to protect that part of the cutting which should be taken care of. Under the left blade are three unequal grooves, in which is placed, according to size, the cut cane which has to be split. Then, too, in the thick part of the metal plate, there is a notch which acts as the hooked part of pruning shears, and which permits the grafter to cut a cane perpendicularly to its fibers.

In order to use the Berdaguer apparatus, it

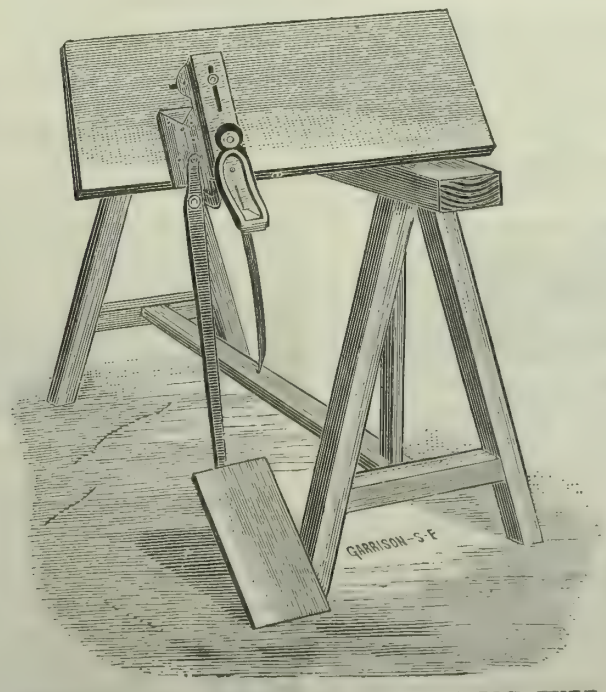

FIG. 6.—LEYDIER'S MACHINE, MOUNTED ON TABLE WITH PEDAL.

must be very firmly fixed on the front edge of a table, by means of screws which are put in the holes used for this purpose. That done, the workman takes the little handle in his left hand, he pushes it forward, and, holding the cutting in his free hand, he introduces it in one of the cavities on the right; then, drawing the arm of the lever toward him, the opposite blade advances, making the bevel.

To make the cleft, the grafter a second time pushes the arm of the lever forward, and places the cut cane in one of the grooves on the left, holding it firmly. On its return, the blade splits the cutting, and stops when the lever comes in contact with a small projecting screw which limits its backward movement. When the cutting is of small diameter, the bevel is made at once; if it is large, we have the partial bevel of the Champin graft; but if it is desirable to have that of the English graft, it is only necessary to move the cutting near the butment, and a second cut suffices to obtain it.

Much less complete than the Petit machine, but also much less costly, since its price is only 12 francs, this instrument is especially adapted to the grafting of cuttings. Removing the

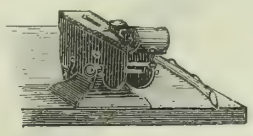

Fig. 5 —Machine for Champin Graft.

blades is very easy, for the whole machine is extremely simple.

The Sabatier Machine.

Mr. Francois Sabatier, a member of the Agricultural Society of Herault, has invented a new machine, destined to do the same work as the preceding ones (Fig. 4). This apparatus, which appears very well conceived, unfortunately is not yet in commerce, and consequently has not been practically tried up to the present time.

Special Machine for the Champin Graft.

Only one machine has been constructed, up to the present time, especially for the Champin graft. It is that of Mr. Leydier (of Leucieux-Vaucluse), of which we give the following description, also taken from Mr. Breheret's report:

The principal parts of the Leydier apparatus (Fig. 5) are: A middle blade, movable at will in making a reciprocating motion over a transverse axis, which is found at the middle of its length; second, a plate which moves by its posterior extremity in the same direction as the blade, and serves as a lower support for it; third, a regulator; and, fourth, a plane movable from front to back, which, at the same time, constitutes an upper support for the middle blade.

The distances between the blade and its two supports are regulated in such a way that between them and the plane there is always a space double that between it and the lower support, whatever may be the size of the cutting used.

The regulator is composed of a little lever and two pieces, rather similar in shape to the pistolets used by draftsmen. These two pieces are joined—one to the blade, the other to the lower support—and as the little lever passes between them with hard friction, its reciprocating motion determines openings proportionally invariable of two to one.

The plane is a large, horizontal, movable piece, which is found on the upper part of the instrument, and the blade of which, fastened by a screw, may be taken out at pleasure to be sharpened. It makes the bevel, and its blade, brought to the end of its course, is always even with the rotary axis of the middle blade, so that, however the diameter of the cutting may vary, the length of the bevel remains the same.

In its backward movement, the plane is guided by two grooves—one external, the other internal. In front of the latter, a leather thong is fastened to it and passes over a pulley situated at the back part of the instrument, terminating in a knife-grinder's treadle. Above the strap is a spring which is stretched out during action, and allows the tool to return to its former position when once the cutting is through with.

All these pieces are mounted on a metal frame which may be firmly fixed on the edge of a table, one of the planks of which is crossed by the leather strap (Fig. 6).

To use this machine, the workman takes a cutting and tries to introduce it in the opening, where is found the blade we have spoken of. If the diameter of the cutting is too large or too small for this opening, with his left hand he works the regulator to produce the desired size. This done, he pushes the cutting in, which, coming in contact with the blade, is split exactly at the spot intended in the ratio of two to one, and then pressing on the pedal, the plane moves backward, making a perfectly regular bevel.

The Leydier apparatus, although costing only 25 francs, is a machine that does great work, and one that every workman can use without any apprenticeship.

The divers machines we have just examined allow of doing the grafting only in the workshop. Although several machines have been proposed for working in the open field and on growing vines, none of them, up to the present time, seem to be sufficiently perfect for practical use.

The Immigration Bureau.

The Immigration Association, with headquarters at No. 10 California street, S. F., seems to be pursuing its work expeditiously. The Directors met on Tuesday of this week to hear the report of Col. Preston, the Secretary, of work done during the last month, and to pass upon the matter prepared for a pamphlet upon California, for distribution abroad. The Secretary reported a growing demand for information from immigrants already arrived, and families, parties and colonies intending to immigrate to California from various parts of the world. In regard to the collection of information regarding vacant land in this State, the Secretary reported that the Land Officer of the Immigration Association has examined 64 townships for vacant lands, 72 for the character of lands, and 43 large maps have been completed and traced. It is shown that in Lake county there are 425,000 acres of vacant lands; in Sonoma county, 125,000 acres; in Mendocino county (so far as examined), 55,000 acres; Napa county (complete), 105,000 acres; other counties (so far as examined), 25,000 acres. This represents the Government land open to location by actual settlers.

A New Desert Land Law.—A new desert land bill has been introduced by Representative Pacheco to amend the Act to provide for the sale of desert lands in certain States and Territories. It provides that it shall be lawful for any citizen of the United States, upon the payment of twenty-five cents per acre, to file a declaration under oath with the Register and Receiver of the land district in which any desert land is situated, that he intends to reclaim a tract of desert land not exceeding one section, by conducting water upon the same within a period of six years thereafter. Section three of the bill provides "that persons who have heretofore taken up lands under the Desert Act and have failed to comply with the terms of the law, and thereby forfeited their rights, shall have prior right of re-entry of the same land by paying again twenty-five cents per acre; provided, that application for re-entries is made within ninety days after the passage of the Act."

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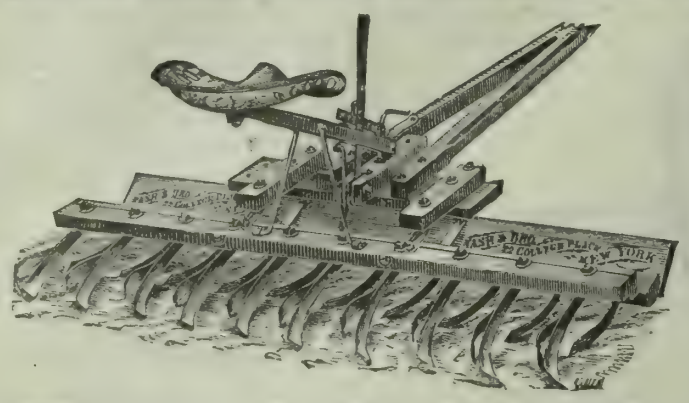

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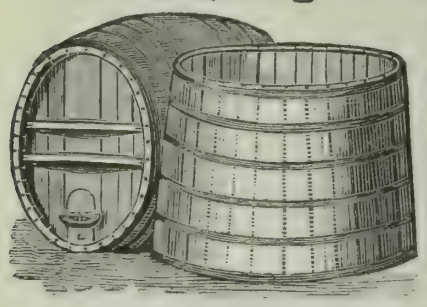

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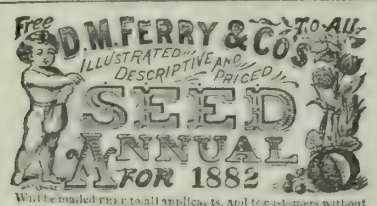

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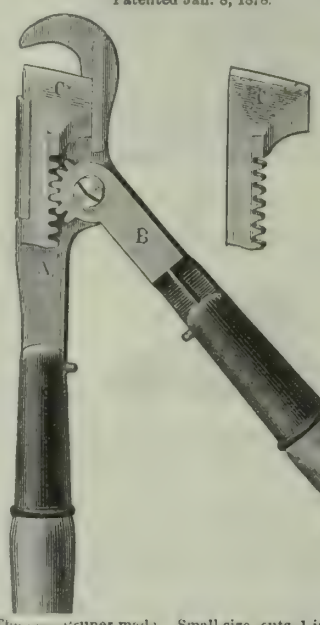

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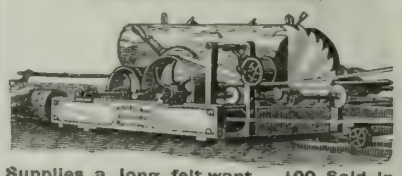

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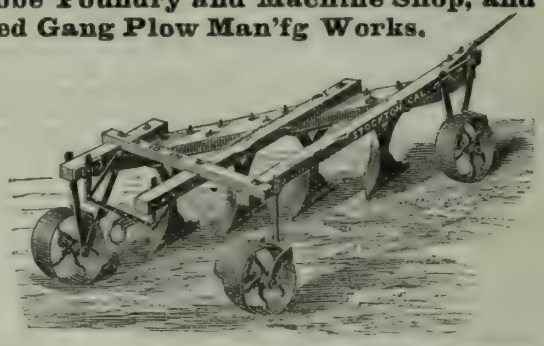

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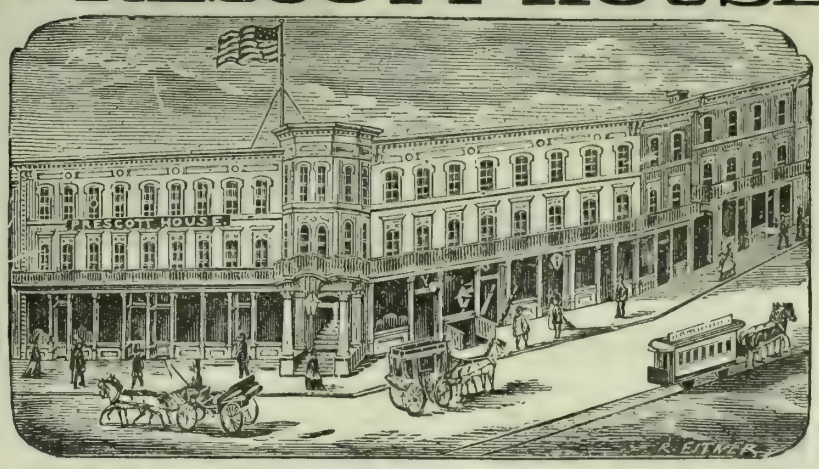
We now offer our splendid tract of Vine and Fruit Land in small tracts Title, U. S. patent. Don't miss this chance to secure you a home where DROUTH NOR FLOOD can injure you. One mile from the county seat of Fresno County, a flourishing town of 2,380. Abundance of water now running to waste. Come and examine; we will show you we are now offering the best land in this State for fruit culture It lays level. Water brought in front of every man's place. ☞REMEMBER, WE DON'T DEPEND UPON RAIN.☜ Send for Circular.

T. E. HUGHES & SONS { 314 Montgomery St., San Francisco, Or Fresno, California.

PRESCOTT HOUSE.



S. W. Corner Kearny and Montgomery Ave., San Francisco.

☞Free Coach to the House. **O. F. BECKER. Proprietor**

JOS. FREDERICKS & CO.,

IMPORTERS AND DEALERS IN

CARPETS, FURNITURE, BEDDING,

Rugs, Mats, Linoleum, Oilcloths, Upholstery Goods, Etc.

Lace Curtains, Window Shades and Draperies,

649 and 651 Market St., Opposite Kearny, S. F.

IMPORTANT!!!

That the public should know that for the past ELEVEN years our SOLE BUSINESS has been, and now is, importing (OVER 100 CARLOADS) and breeding improved Live Stock—Horses, Jacks, Short Horns, Ayrshires and Jerseys (or Alderneys) and their grades; also ALL THE VARIETIES of breeding Sheep and Hogs We can supply any and all good animals that may be wanted, and at VERY REASONABLE PRICES and on CONVENIENT TERMS. Write or call on us. LICK HOUSE, San Francisco, Cal., October 22, 1881 PETER SAXE & HOMER P. SAXE.

PETER SAXE & SON

B. STEACEY,

Lockeford, San Joaquin Co., Cal.,

MANUFACTURER OF ALL KINDS OF

FARMERS' WAGONS,

Buckboards, Family Buggies

Of all kinds and sizes.

Keeps a good supply of well seasoned wood on hand. Blacksmithing and painting departments in connection.

TRADE MARK.

LITTLE'S CHEMICAL FLUID.

The New Non-Poisonous Sheep Dip and Disinfectant. Price reduced to $1.60 per gallon. For directions and testimonials apply to FALKNER, BELL & CO.,

Sole Agents, 430 California Street, S. F.

Calvert's Carbolic

SHEEP WASH.

$2 per Gallon.

After dipping the Sheep, is useful for preserving wet hides, destroying the vine pest, and for wheat dressings and disinfecting purposes, etc. T. W. JACKSON. S. F., Sole Agent for Pacific Coast.

JOHN JENNINGS.

Hooper's South End Grain Warehouses,

Cor. Japan and Townsend Sts., S. F.

First-class Fire-proof Brick Building. Capacity, 10,000 tons. Goods taken from the Dock and the Cars of the C. P. R. R. and S. P. R. R. free of charge. Storage at Current Rates. Advances and Insurance effected.

GUNS Lowest prices ever known on **Breech-Loaders, Rifles, and Revolvers,** **OUR $15 SHOT-GUN** at greatly reduced price. Send stamp for our New Illustrated Catalogue (B) P. POWELL & SON, 238 Main Street, CINCINNATI, O.

TOULOUSE GEESE.

Few pairs or trios for sale. M. DWIGHT, Fulton, Sonoma County, Cal.

Lands for Sale and to Let.

SANTA CRUZ COUNTY

Goods Crops every Season without Irrigation

Farms, Stock Ranches, Dairy Farms, Fruit Farms, Vineyards, Chicken Ranches and homesteads of every class and description in this and adjoining counties for sale or rent on reasonable terms. State requirements and obtain suitable particulars from the Real Estate

EXCHANGE & MART, Santa Cruz, Cal.

Fruit Farm For Sale.

Containing 24 acres fronting on Davis Avenue, one mile north of the flourishing town of Los Gatos. Good house, barn, chicken house and yard. A good well of soft water; 1,000 fruit trees, assorted, and 550 grape vines, all set out last winter. About 50 oak trees, large and small, adds to the beauty of the place. This beautiful, healthy place, situated in the charming warm belt climate of the foothills, is sold for the want of health and means to carry it on.

Price, $2,700. Address G. W. McGREW, Los Gatos, Cal. Reference—Dewey & Co., Rural Press.

SAN JOSE, CAL.

FOR SALE, OR WILL EXCHANGE for country property—22 acres in San Jose; house of 11 rooms; 10 acres in orchard; flowing artesian well; stable for five horses, and outbuildings; fine shrubbery and ornamental trees; horse cars within one block; five minutes from C. P. R. R. depot; would cut up into building lots. Address J. C., P. O. box 765, San Jose, Cal.

YOSEMITE HOUSE.

MAIN ST., STOCKTON, CAL. FIRST-CLASS HOUSE

JAMES CAVIN, Proprietor.

This House is the Leading Hotel of the City, containing all the modern improvements. General Ticket Office for the Big Trees, Yosemite Valley, Bodie, and General Stage Office for all the Southern Mountain Towns. The Yosemite Coach will convey guests from the boats and all trains, free of charge

Mission Rock Dock and Grain Warehouse

San Francisco, Cal.

65,000 tons capacity. Storage at lowest rate

CHAS. H. SINCLAIR, Supt.

CALIFORNIA DRY DOCK CO. - - Proprietors.

Office—318 California Street, Room 3.

To Fish Raisers.

I am now ready to sell Carp which were imported from Germany in 1872, in lots to suit. Address

J. A. POPPE, Sonoma, Cal.

GRANGERS' BANK

Of California,

SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,000,

In 10,000 Shares of $100 each.

Capital Paid up in Gold Coin, $500,000.

Reserve Fund and Paid up Stock, 25,760.

OFFICERS:

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J. C. MERYFIELD.....Solano Co
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DANIEL RHOADS.....Mussel Slough, Tulare Co
C J. CRESSEY.....Merced Co
SENECA EWER.....Napa Co
A. D. LOGAN.....Colusa Co

CURRENT ACCOUNTS are opened and conducted in the usual way, bank books balanced up and statements of accounts rendered every month

LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

GOLD and SILVER deposits received

CERTIFICATES of DEPOSIT issued payable on demand.

TERM DEPOSITS are received and interest allowed as follows: 4% per annum if left for 3 months; 5% per annum if left for 6 months; 6% per annum if left for 12 months.

BILLS OF EXCHANGE of the Atlantic States bought and sold.

ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1881.

Agricultural Articles.

The Famous "Enterprise,"

PERKINS' PATENT

Self Regulating

WINDMILLS

Pumps & Fixtures.

These Mills and Pumps are reliable and always give satisfaction. Simple, strong and durable in all parts. Solid wrought iron crank shaft with *double bearings* for the crank to work in, all turned run in babbitted boxes. *Positively self regulating* with no coil spring or springs of any kind. No little rods, joints, levers or balls to get out of order, as such things do. Mills in use six to nine years now, that have never cost one cent for repairs.

All sizes of Pumping and Power Mills. Thousands in use. *All warranted.* Address for circulars and information

HORTON & KENNEDY,

GENERAL OFFICE AND SUPPLIES, LIVERMORE, ALAMEDA CO., CAL. Also, Best Feed Mills for sale.

San Francisco Agency, LINFORTH, RICE & CO., 323 & 325 Market Street.

Holstein Cattle.

CLYDESDALE AND HAMBLETONIAN

HORSES.

The largest and deepest milking herd of Holsteins in the world. 225 head, pure bred, mostly imported, males and females of different ages.

A Large and elegant stud of imported Clydesdale Stallions and Mares of all ages

Hambletonian Stallions and Mares of superior breeding Personal inspection invited. Separate catalogues of each class, and milk records of cows mailed free on application. All inquiries promptly answered. State that you saw this advertisement in the PACIFIC RURAL PRESS.

SMITHS & POWELL,

Lakeside Stock Farm, Syracuse, N. Y.

SPECIAL STOCKHOLDERS' MEETING.

Grangers' Business Association,

OF CALIFORNIA.

Five Directors of the above-named corporation, and stockholders thereof, representing more than one-tenth of the stock issued having made a written request to the President to call a special meeting of the stockholders, therefore, pursuant to such request, notice is hereby given that a special meeting of the stockholders of the Grangers' Business Association of California will be held at the office of the Association, No. 38 California street, San Francisco, on Wednesday, the 15th day of March, 1882, at the hour of 1 o'clock P M, for the purpose of considering the question of making a sale of the property of the Association, and for the transaction of such other business as may come before the meeting.

DANIEL INMAN, President.

Attest: AMOS ADAMS, Secretary.

HORSE-POWER ROTARY PUMP.

The most complete, compact, durable and effective machine for pumping and other light work. No jerk or jar; runs easy and gives a continuous stream of water. Is light, portable, convenient to move or set in operation. Capacity, 2 000 gallons an hour, with one horse.

Weight, all told, 600 lbs.

R. M BEEBEE,
Gridley, Butte County, Cal.

52 Gold, Crystal, Lace, Perfumed & Chromo Cards, name in gold and jet, 10c. Clinton Bros., Clintonville, Co

SAN FRANCISCO MARKET REPORT.

(CONTINUED FROM PAGE 133.)

Domestic Produce.

WHOLESALE.

WEDNESDAY M., February 22, 1882.

BEANS & PEAS.	
Bayo, ctl	— @3 50
Butter	4 00 @4 25
Castor	3 50 @4 00
Pea	4 85 @5 00
Red	— @3 50
Pink	— @3 50
Large White	3 00 @3 25
Small White	4 85 @5 00
Lima	5 50 @5 75
Field Peas, b'lk eye	1 50 @1 75
do, green	2 00 @2 25
BROOM CORN.	
Southern	3 @ 3½
Northern	4 @ 6
CHICCORY.	
California	4 @ 4½
German	6½@ 7
DAIRY PRODUCE, ETC.	
BUTTER.	
Cal. Fresh Roll, lb.	33 @ 34
do Fancy Brands	— @ 35
Pickle Roll	22½@ 27½
Firkin, new	25 @ 30
Eastern	18 @ 22½
New York	— @ —
CHEESE.	
Cheese, Cal., lb	17 @ 19
EGGS.	
Cal. Fresh, doz	23 @ 25
Ducks	— @ 25
Oregon	21 @ 22
Eastern, by expr'ss	— @ —
Pickled here	— @ —
Utah	— @ —
FEED.	
Bran, ton	— — @20 00
Corn Meal	42 00 @43 00
Hay	11 00 @17 00
Middlings	28 00 @30 00
Oil Cake Meal	— — @30 00
Straw, bale	— 62½@— 70
FLOUR.	
Extra, City Mills	5 25 @5 62½
do, Co'ntry Mills	4 75 @5 00
do, Oregon	4 75 @5 12½
do, Walla Walla	4 50 @5 00
Superfine	3 50 @4 25
FRESH MEAT.	
Beef, 1st qual'y, lb.	6½@ 7½
Second	5½@ 6½
Third	4 @ 4½
Mutton	4½@ 6½
Spring Lamb	8 @ 10
Pork, undressed	5¼@ 6½
Dressed	8½@ 9½
Veal	7½@ 8
Milk Calves	7½@ 8
do, choice	— @ 10
GRAIN, ETC.	
Barley, feed, ctl	1 77 @1 82½
do, Brewing	1 85 @1 90
Chevalier	1 77½@1 80
do, Coast	1 50 @1 60
Buckwheat	— @1 75
Corn, White	2 00 @2 25
Yellow	1 87½@1 90
Small Round	1 87½@1 90
Oats	1 75 @1 85
Milling	1 87½@1 95
Rye	2 25 @2 30
Wheat, No. 1	— @1 65
do, No. 2	1 60 @1 62½
do, No. 3	1 45 @1 50
Choice Milling	— @ —
HIDES.	
Hides, dry	— @ 18
Wet salted	9½@ 11
HONEY, ETC.	
Beeswax, lb	23 @ 25
Honey in comb	15 @ 20
Extracted, light	9 @ 10
do, dark	7½@ [illegible]
HOPS.	
Oregon	20 @ 21
California, new	24 @ 26
Wash. Ter	23 @ 24
Old Hops	— @ —
NUTS—Jobbing.	
Walnuts, Cal	10 @ 11
do, Chile	7½@ 8
Almonds, hd shl lb	8 @ 10
Soft shell	14 @ 15
Brazil	10 @ 11

Pecans	13 @ 15
Peanuts	6 @ 6½
Filberts	14 @ 15
ONIONS.	
Red	— @ —
Silverskin	95 @1 10
Oregon	— @ —
POTATOES.	
Early Rose	1 80 @1 90
Petaluma, ctl	1 75 @2 00
Tomales	— @1 90
Humboldt	1 90 @2 00
" Kidney	— @1 75
" Peachblow	1 90 @2 00
Jersey Blue	— @ —
Cuffey Cove	— @ —
River, red	1 50 @1 60
Chile	1 50 @1 55
do, Oregon	1 75 @1 80
Oregon Peerless	1 90 @2 00
Sweet	1 00 @1 25
POULTRY & GAME.	
Hens, doz	5 00 @ 6 50
Roosters	5 00 @ 7 50
Broilers	5 00 @ 6 50
Ducks, tame, doz	5 50 @ 7 00
Mallard	2 50 @ 3 00
Sprig	1 50 @ 1 75
Teal	75 @ 90
Widgeon	1 00 @1 12½
Geese, pair	1 50 @1 75
Wild Gray, doz	1 75 @2 00
White do	50 @1 00
Turkeys	12½@ 14
do, Dressed	10 @ 13
Turkey Feathers, tail and wing, lb.	10 @ 20
Snipe, Eng	1 50 @2 00
do, Common	50 @ 75
Quail, doz	75 @ 80
Rabbits	1 00 @1 25
Hare	1 50 @1 75
Venison	5 @ 7
PROVISIONS.	
Cal. Bacon, extra clear, lb	12½@ 13½
Medium	12 @ 13½
Light	13 @ 14
Lard	13 @ 16
Cal. Smoked Beef	11½@ 12½
Shoulders	9½@ 10½
Hams, Cal	12½@ 13½
do, Eastern	15½@ 16½
SEEDS.	
Alfalfa	12 @ 13
do Chile	— @ —
Canary	3½@ 4
Clover, Red	14 @ 15
White	45 @ 50
Cotton	— @ 20
Flaxseed	2½@ 3½
Hemp	— @ 5
Italian Rye Grass	25 @ —
Perennial	25 @ —
Millet, German	10 @ 12
do, Common	7 @ 10
Mustard, White	1¾@ 2¾
Brown	2½@ 3
Rape	2½@ 2¾
Ky Blue Grass	20 @ 25
2d quality	16 @ 18
Sweet V Grass	— @ 75
Orchard	20 @ 25
Red Top	— @ 15
Hungarian	8 @ 10
Lawn	30 @ 40
Mesquit	10 @ 12
Timothy	9 @ 10
TALLOW.	
Crude, lb	6½@ 7
Refined	9½@ 10
WOOL, ETC.	
FALL—1881.	
San Joaquin	9 @ 14
do, Lamb	13 @ 15
Southern Fall	9 @ 12
do lambs'	13 @ 14
Northern, free	16 @ 20
do, defective	14 @ 16
Mountain, free	16 @ 18
do, slightly seedy	13 @ 15
Humboldt & Mendocino	18 @ 21

CHOICEST

SMALL FRUIT PLANTS

AT REASONABLE PRICES.

TEXAS EXTRA EARLY BLACKBERRY, $1.50 per doz. **Earliest Good Berry.** Prolific, firm, very early.

BIDWELL STRAWBERRY, 75 Cents per dozen. Very large, early and fine.

Kirkwood, Garden, Longfellow, Red Jacket, Sharpless, President Wilder, and many others at 50 cts. per doz. All mailed free. ☞Selected Plants.

BEST SELECTION

Of Small Fruit Plants on this Coast.

We send Small Fruit Plants to any Postoffice in the United States and

GUARANTEE SAFE ARRIVAL.

Descriptive Catalogue free.

One dozen President Wilder, the best flavored and handsomest Berry, FREE to all our customers mentioning this paper. Address

C. M. SILVA & SON,

Newcastle, Placer County, - - California.

JAPANESE NURSERY DEPOT.

A rare assortment of the choicest and most desirable

JAPANESE

Ornamental Trees

AND SHRUBS,

CHESTNUT,

Persimmon

AND PLUM TREES.

Camphor Trees, Giant Bamboos, Lily Bulbs.

CAMELLIAS, best double sorts, cheap.

SEEDS.

H. H. BERGER & CO.,

P. O. Box 1561.

No. 518 Eddy Street, San Francisco, Cal.

AMERICAN

CONCENTRATED

LYE,

Manufactured by

Geo. T. Lewis & Menzies Co., of Philadelphia.

THE

AMERICAN LYE

IS THE

Purest, Strongest and Best.

IT WILL GO FARTHER THAN ANY OTHER.

AN INSECTICIDE

AND A

FERTILIZER.

CONCENTRATED LYE has proved itself where used of sufficient strength to be thoroughly reliable and effectual, and has the great property of fertilizing the tree and soil, as potash is one of the natural constituents of both, and is required for the health of the tree. Its use is therefore recommended. Sixty pounds of the Concentrated Lye of the American Lye Co. is equivalent to 100 pounds of commercial potash.—*Report to San Jose Horticultural Society, 1881.*

THE AMERICAN LYE was specially recommended by Dr. Chapin in his address at the Sacramento Convention, and is the standard basis for the alkaline now being used by tree growers in all parts of the State.

WM. T. COLEMAN & CO.,

WHOLESALE AGENTS,

121 and 123 Market St., S. E. cor. Main,

SAN FRANCISCO, CAL.

The Agents beg to notify the Wine Growers and Orchardists that the demand for this **UNRIVALLED BRAND** *has been so enormous as to temporarily deplete stock. We have, however,* **LARGE SUPPLIES** *en route, and now due. Hold your orders. No other Lyes will do the work as well.*

Later!

February 10, 1882.—A large Consignment has just arrived, and all orders will be promptly filled.

WM. T. COLEMAN & CO.

PRŒPARTURIENS WALNUT

CALIFORNIA GROWN TREES,

From One Foot to Ten Feet.

The Prœparturiens, or Early-Bearing Walnut, was introduced into California from Europe, in the spring of 1871, by Felix Gillet, of Nevada City, Cal.

The above cut represents a CALIFORNIA RAISED PRŒPARTURIENS NUT, picked on 15-YEAR-OLD TREES, 25 feet in hight, and THE FIRST BEARING TREES IN THE UNITED STATES.

The Prœparturiens Walnut bears earlier than any other kind, bearing sometimes at three years, hence its name, signifying precociousness. It is a late and hardy kind. It is a regular and prolific bearer. The nut is large and fine. It thrives well in cold countries, and wherever the American black walnut grows. Also,

GAND WALNUT,

SEROTINA OR LATE WALNUT,

PECAN NUT, BUTTERNUT,

BLACK WALNUT, HICKORY NUT, Etc.

One, two, three and four-year-old Prœparturiens and Serotina Trees for sale. (See Descriptive Catalogue and Price List) One-year-old (California grown), Prœparturiens, Gand and Serotina Walnuts, HEAVILY ROOTED, sent by mail in 24 to 30-inch packages, well packed in damp moss and oiled paper, to any part of California and the United States at **$1 per Tree,** or **$10 per dozen,** including packing and mailing.

FILBERTS, CHESTNUTS,

Pears, Cherries, Peaches, Medlars, Hawthorns, Etc.

STRAWBERRIES, RASPBERRIES, BLACKBERRIES, GOOSEBERRIES, CURRANTS, Etc.

GRAPES (Table and Wine).

☞ I will mail FREE to any person applying for it, my beautiful ILLUSTRATED Descriptive Catalogue and Price List.

MORUS JAPONICA,

Or Large Leaf White Mulberry, of Japan, the best paying kind to raise for Silkworm feeding. Grows splendidly from cuttings. Trees and Cuttings for sale.

SILKWORM EGGS (French Annuals), from my own raising, at $5 per ounce. Sent by mail to any part of the United States, in quantities from 50 cts. and over. (Postage stamps taken for the amount.)

CAUTION! I will herewith caution the public against buying Trees from Agents purporting to be mine, and in regard to the Prœparturiens Walnut, I will add that though having introduced into this State, 11 years ago, that new and valuable variety, I am not responsible for any Trees selling under that name in California.

FELIX GILLET,

Nevada City, - - - California.

THE STANLEY PATENT

Vine-Setter and Hole-Digger.

I desire to call the attention of those interested in setting out vineyards to the above tool. The following are a few of the many advantages which it possesses over all tools generally in use for that purpose: 1. It will dig the largest number of holes with the least amount of labor in all kinds of soil. 2. It makes a hole the desired depth for the reception of the cutting, leaving the ground thoroughly loosened at the bottom, with sufficient room for the fertilizer or compost which is necessary to some soils. 3. It leaves room enough to tamp the cuttings air-tight, without injury to the buds, which is an impossibility with the dibble, auger or crowbar. One man can dig from 800 to 1,500 holes per day, according to the nature of the ground. It works equally well in the loosest soil or the worst adobe. It is operated by forcing the blade into the ground with the foot, then turning it around; it cuts and removes the soil with the blade. If desired the hole can be lengthened or enlarged for bent cuttings or young trees. The blade is made of the finest saw steel, cold rolled temper; handle, tubular iron.

I manufacture two sizes, Nos. 2 and 3. No. 2 is 3 to 4-inch, for grape vine settings especially. No. 3 is 5-inch, for post holes and tree-planting, combining the crowbar, post auger and spade.

PRICES.—No. 2, $5. No 3, $6.

I refer to the following parties who, after practical test, have adopted them: Juan Gallegos, Mission San Jose; P. Sainsevain, pioneer viticulturist, Mission San Jose; Fisher & Megahan, Mission San Jose; J. L. Beard, Regent of the State University, Centreville; H. G. Ellsworth, Niles; Chas. A. Wetmore, State Viticultural Commissioner, San Francisco; Governor Stanford, Tehama Co.; J. West Martin, President Union Bank, Oakland; Judge M. B. Miller, Nicasio, Marin Co.; G. G. Briggs, Davisville, Yolo Co.; P. B. Cornwall, President Black Diamond Coal Co.; Tool & Andrews, Napa; E. Waid Hutchins, Cordelia, Solano Co.; W. J. Chiles, St. Helena, Napa Co.; Chas. Stiller, San Jose, Santa Clara Co.; J. G. Laduke, Batavia, Solano Co.; T. H. Safford, Willows, Colusa Co.; Geo. West, Stockton, San Joaquin Co., and Fresno, Fresno Co.; J. S. Burpey, Vacaville, Solano Co. In ordering address

J. STANLEY,

Mission San Jose, Alameda Co., Cal.

OIL CAKE MEAL.

Best Food for Milch Cows Or Fattening Stock.

CHEAPEST FEED FOR SHEEP.

FOR SALE BY

KITTLE & CO.

YOUR NAME on 50 fine Chromos, or 40 Comic transparent cards, 10c. Wise & Co., Clintonville, Ct.

1882.

Pacific Mail Steamship Co.

The Steamships of this Company will sail from SAN FRANCISCO during the year 1882 as follows:

From wharf, corner of First and Brannan Sts., Hour of departure, 2 P. M.,

For Yokohama and Hong Kong.

CITY OF TOKIO .... April 1st

Connecting at Yokohama with Steamers of the Mitsu Bishi Co for Hiogo, Nagasaki and Shanghae. Excursion tickets to Yokohama and return at special rates.

For Sydney and Auckland Via Honolulu

CITY OF NEW YORK ...... Mar. 11, July 1, October 21
CITY OF SYDNEY ..... May 6, August 26, December 16
ZEALANDIA .... April 8, July 29, November 18
AUSTRALIA .... June 3, September 23

At 2 P. M. or on arrival of English mails.

Round the World Trip, via New Zealand and Australia, $650.

For New York, via Panama.

CITY OF PEKING ....on or about March 4th

At 12 o'clock, noon. Taking Passengers and freight for Mexican, Central American and South American ports, for Havana and all West India ports; for Liverpool, London and Southampton; for St. Nazaire, and for Hamburg, Bremen and Antwerp.

WILLIAMS, DIMOND & CO., Gen'l Agents.

Agricultural Implements.

A. S. BABCOCK & CO.,

(Successors to GEO. BULL & Co).

J. I. CASE IMPLEMENTS AND GOODS,

Acme Harrow,
Studebaker Wagons,
Harrison Wagons.

NO. 332 MARKET STREET, SAN JOSE, CAL.

JACKS FOR SALE.

We have just imported a carload of

THOROUGHBRED KENTUCKY AND MISSOURI

JACKS,

From yearlings up to nearly 16 hands high. Will guarantee them sound, good performers, and sure foal-getters.

Also, for sale, one THOROUGHBRED STALLION, "Young Lodi," sired by "Old Lodi," and he by "Old Lexington," of Kentucky.

Price, from $300 to $1,000.

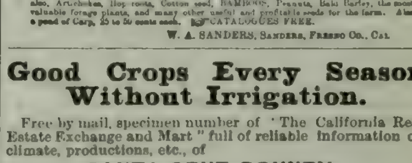
Crow's Landing (near Modesto), Stanislaus Co., Cal.

A. M. & E. W. CROW.

February 1, 1882.

PENNOCK'S PATENT ROAD MACHINE.

KEEPS THE HIGHWAYS FIVE TIMES BETTER FOR HALF THE PRESENT COST IN CITY OR COUNTRY. PARTICULARS FREE. MACHINES SENT ON TRIAL.



Manufacturers of "Matchless" Dump-Scraper.

S. PENNOCK & SONS' CO.,

Kennett Square, Pa., and Fort Wayne, Ind.

TREES AND SEEDS TRUE TO NAME

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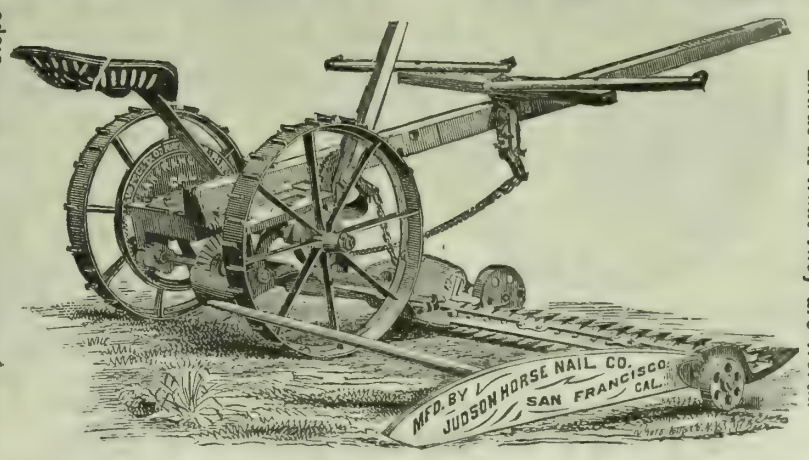

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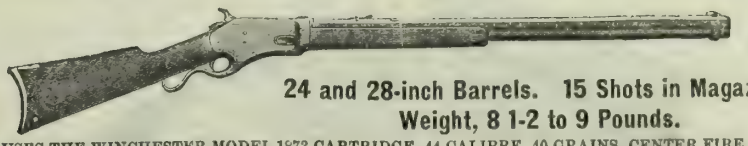

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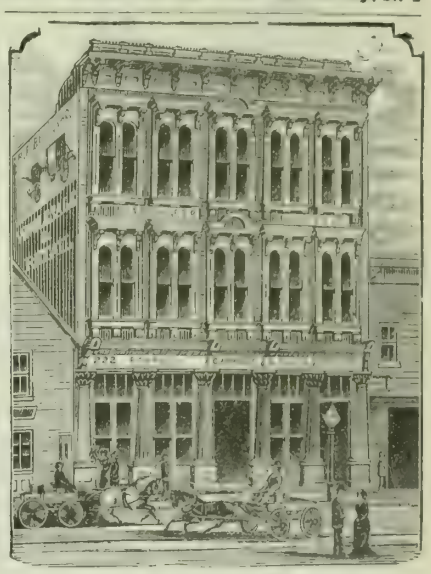

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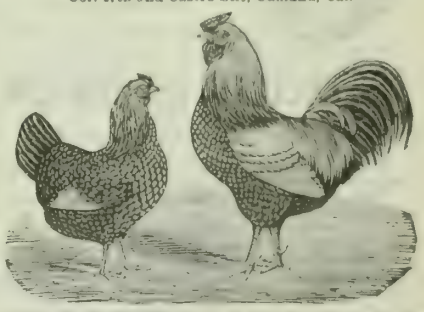

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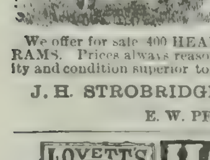

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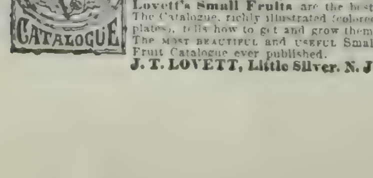

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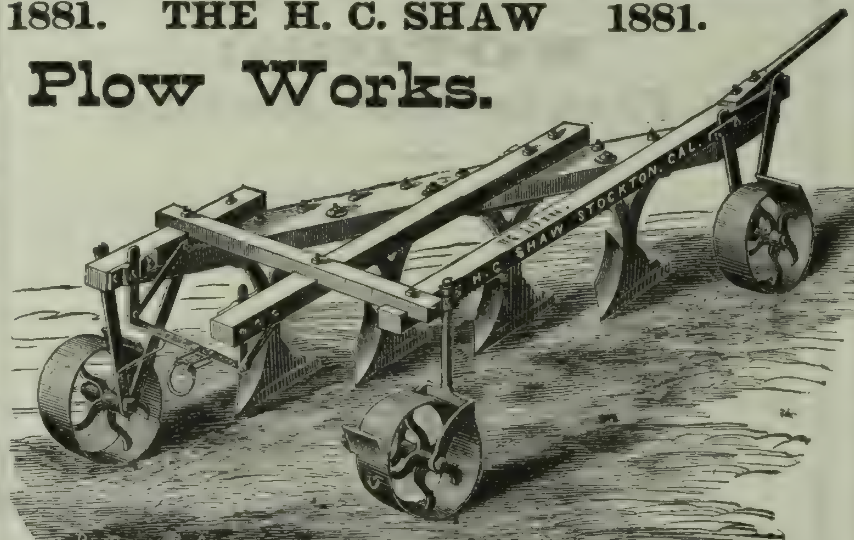

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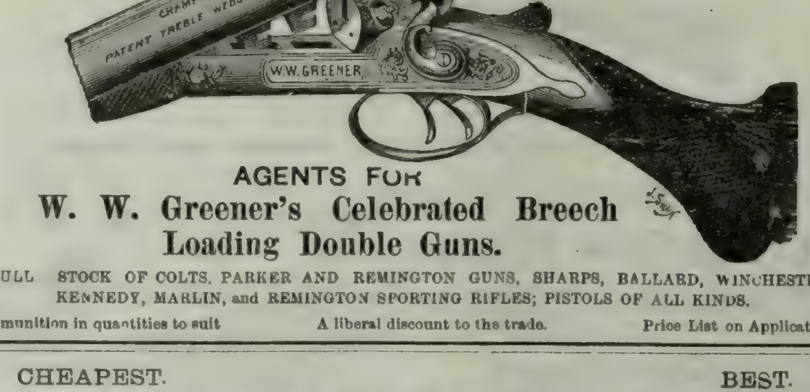

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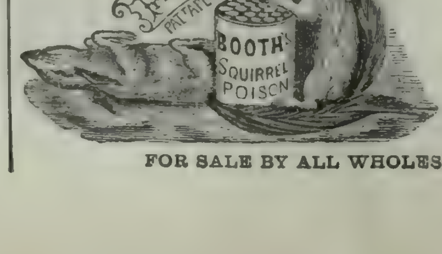

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PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, MARCH 4, 1882. Number 9

An Ice Locked Ship.

The loss of the *Jeannette* by ice crushing and the toilings of her crew upon the waters and snowfields of the cruel Siberian coast give hightened interest to the accounts of Arctic dangers. The latest news is that a portion of the survivors of the *Jeannette* expedition who succeeded in reaching the Siberian settlements, had set their faces again northward in search for their companions who were thought to be leading a forlorn hope in the trackless ice and snow wastes adjacent to the mouth of the Lena river. It is to be hoped that the search may prove successful and the sufferers rescued.

The engraving on this page, which shows the *Corwin* in the grasp of the ice field, will give the reader some idea of the perils of Arctic navigation. The *Corwin*, it will be remembered, was first sent out by the United States Government, in 1880, to search for the *Jeannette*, and was ordered out on a second voyage, for a similar purpose, in 1881. Upon his return from the cruise, Capt. Hooper reported to the Secretary of the Navy the incidents of his voyage, accompanied by some drawings to show the perils into which he came and the geographical observations made. From this report we take the accompanying engraving and descriptive notes:

On the morning of the 15th we found ourselves utterly helpless, drifting with the pack to the southward and eastward about two miles per hour. At first this caused no uneasiness, but about 8 A. M. it was noticed that we were among grounded ice. We had only five fathoms of water, and many large pieces were hard and fast on the bottom. Coming in contact with some of these grounded pieces the vessel got some pretty sharp nips, which tried her strength. At one time she was lifted bodily up several feet, and held suspended for some minutes; coming in contact with one, "stern on," the rudder was forced over, the screw steering-gear carried away, and the wheel-chains parted. Happily the rudder-stock, which is of the best Oregon oak, stood the strain, although for a time it seemed as if nothing could save it.

With this experience of the danger to which the rudder was exposed, I saw the necessity of having it rigged so that it could be unshipped at short notice, and set to work accordingly. All hands piled sacks of coal on the forecastle until the vessel was tipped sufficiently to raise her stern and allow us to get at and split out the wood-lock. A piece of oak plank was secured across the rudder-head by means of four long iron bolts, in such a way as to keep the rudder from unshipping by the action of the sea, and to be readily removed should it become necessary. We next cut a piece on the apron the size of the rudder-casing, so that the rudder-head could go forward sufficiently to allow it to unship without removing the apron entirely, then rigged a pair of shears and rove off a purchase, so that the rudder could be taken in, out of the way of danger, in a few minutes. On the 16th, we drifted helplessly in the pack all day. On the morning of the 17th, clear water could be seen, from the mast-head, to the northward and westward. At the same time a slight roll of the sea was perceived, indicating that it was quite a large space. After working toward it all day, we succeeded in reaching clear water in the evening, having made about four miles in 10 hours.

The *Corwin* thus escaped to fight the ice again another day. The *Jeannette* met a harder fate. For 18 months she was ice locked and her crew prisoners. Then she yielded to the crushing of the ice and her crew were forced to the perils and adventures of which a full account is to be given on the return of the survivors.

THE ARCTIC EXPLORING SHIP "CORWIN" IN A NIP OFF CAPE ROMANZOFF.

Timothy Hay.

Most California farmers will think us mad to speak of timothy hay, because in the greater area of the State timothy is a perfect failure, and one can ride for days without seeing a head of this grass, which plays such an important part in Eastern farm economy. But for all that, timothy grows well in some of the northern coast counties and in some of the northern counties away from the coast. In fact, we never saw such timothy heads as have been sent us from these parts of California. Henry Stewart gives the New York *Times* a letter on timothy hay, a few points from which will be of interest to California timothy growers. Clear timothy hay is highly esteemed by horse owners. The seed is highly nutritious and is abundantly produced. A crop of well-grown timothy seed will sometimes reach 25 or 30 bushels per acre, weighing from 1,200 lbs. to 1,400 lbs. If the hay weighs three tons per acre, a fourth or fifth of the whole is the nutritious seed, and for feeding horses and cattle other than dairy cows this is an important matter to consider. Again, ripe hay is free from the fine dust produced by the dried pollen which is very injurious to the lungs of horses when it is breathed, and produces heaves, roaring and other bronchial and lung troubles. But the farmer who sells this ripe hay should remember that he is disposing of a considerable portion of the best part of his soil in the form of the seed, and that timothy is "hard," and very hard, on the land when the hay is cut ripe. This should be duly considered by the farmer who grows hay for his own use, as well as the fact that the ripe hay is no doubt better for his horses, although it may run the land rather hard.

Timothy fails in the chief part of this State, because it has a bulbous root which will not endure the dry heat and winds which characterize our summer climate. In the coast region and the north of the State, the air is moister, and the roots survive the heat. But even in regions where timothy grows well, it may be run out by treatment which exposes its root crowns to the heat and drying winds. Timothy meadows are injured by too close mowing. The mowing machine has forced us to smooth and level the surface of the fields by the use of rollers, after much more care in plowing and harrowing than was formerly given. Now we shave or shear our fields and leave no stubble to speak of for the protection of the grass roots, and timothy, as we have seen, requires protection from the sun's heat, but especially from drying winds. We would leave at least four inches of stubble on a timothy meadow.

Concerning the use of timothy hay for dairy cows, it may be remarked that the hay should be cut earlier than when desired for horse feed. As soon as the blossom appears it should be cut, if to be used in the dairy.

THE EARLY CULTIVATION OF WHEAT IN AMERICA.—A late number of the *International Review* contains a condensed history of the first cultivation of grain in the United States, beginning with the early part of the seventeenth century. Wheat, it is stated, was first sown in America in 1602, on Cuttyhunk, one of the Elizabeth Islands, by Goswold, when he explored the coast. In Virginia wheat was sown in 1611 for the first time, and from that date it increased quite rapidly until, in 1648, it is recorded that there were several hundred acres of it. In the Dutch Colony of New Netherlands wheat was cultivated at an early date, and in 1626 samples of this cereal were taken to Holland to show what could be raised in the new country.

IMMIGRATION TO SHASTA COUNTY.—Pursuant to a call made by Judge C. C. Bush, of Redding, Shasta county, to form a local immigration association to co-operate with the Immigration Association of California in compiling and disseminating information of value to immigrants desiring to settle in that county, a meeting was held in that town last week which resulted in the permanent organization and election of officers on Feb. 25th. The work of the association is intended to be free, both for land owners and immigrants, the intention of the association not being to enter upon the business of selling land. It is their design to place such information of the kind desired as can be obtained at small expense, in a shape that it can be reached by the immigrant desiring a location, and to keep such information and maps in the office of the Secretary at Redding open for their inspection.

Rust-Proof Wheats.

About a year ago we announced the hopes of Australian wheat growers that they had found in some Indian wheats, varieties which would withstand the attacks of the rust fungus. The latest reports indicate that under some conditions at least, the wheat cannot resist the parasite. In an account from the Sydney *Mail*, we read: "The Indian wheat introduced by the Agricultural Society of New South Wales last August, with the view of testing its rust-resisting powers in several districts of the colony, has not proved rust-proof in the county Cumberland. It took kindly to the soil, and throve well until it was nearly mature and promised a heavy crop. In a few days red rust set in, stalk and ear being affected, and Mr. Lamb had to mow it for hay. Mr. Lamb feels confident that, if the same wheat had been put in a couple of months earlier, several sound bushels of it would have been available for seed; but the fact still stands glaringly forth that under certain adverse circumstances Indian wheat is not invulnerable."

Thus the question recurs, Is there a rust-proof wheat? The experience in California with the Odessa, White Russian and Defiance have, on the whole, been satisfactory, and wheat of these kinds has been successfully grown where it has been found useless to sow the older varieties. Odessa has been grown to such an extent that it is especially named in the grain call of the produce Exchange, and it has sold better than was at one time expected. We hope our readers will keep a special outlook for the behavior of these and other wheats during this year's growth. It is barely possible that a late season with heavy moisture in the spring may give us a rusty summer and give a more severe test for resisting wheats that we have had for several years. If the event thus proves, let all keep a watch for the rusting of some varieties now thought to be resistant, and report to us the results of the observations.

LOSSES BY FIELD MICE.—While we mourn our losses by squirrels and gophers, accounts come of the depredations of other pests in other lands. In the department of the Aisne, France, the loss caused by the ravages of field mice amounts to $2,500,000, according to the commission appointed to investigate, who recommend the passing of a law compelling the commissioners to take joint action in extirpating these pests; and a second law modifying that of 1846, which deals with the sale of poisons. Further, they ask for a State grant to enable the authorities to reduce the evil.

ANTI-CHINESE MEETINGS.—A great mass meeting will be held in this city, on Saturday afternoon, March 4th, to express the sentiments of the people in favor of restricting Chinese immigration, as provided by bills now under consideration at Washington. Provisions are being made for the most notable public gathering ever held in this city. There will also be meetings called at the same time in all parts of the State.

INDIAN WHEAT OUTLOOK.—Advices from Bombay, dated Jan. 12, state that crop prospects are even better than they were last year.

THE STABLE.

Horse Breeding in California.—No. 5.

[Written for the PRESS by JOSEPH CAIRN SIMPSON.]

Roadsters and Fast Trotters.

As the Hambletonians and Mambrino Chiefs have a common ancestor in the thoroughbred horse Mambrino, so the Clays and Bashaws spring from Young Bashaw, who was nearly thoroughbred. In tracing the genealogy of horses, undue preference is often given to the progenitors which appear in the outside lines of the table, and those between, though of equal importance, are partially overlooked. This has arisen from following the plan which the laws of progeniture governing the human race has established, and pursuing the same system, the line of the male parent is given the preference. So far as nomenclature is concerned this is a necessary consequence, as confusion would arise from any other practice. But in the course of a few generations of the horses there must be subdivisions, otherwise the numerous progeny would lead to confusion.

Thus Young Bashaw got Andrew Jackson, and Andrew Jackson got Henry Clay and Long Island Black Hawk. Henry Clay was the founder of the Clay family, and Black Hawk is the most prominent figure in those which are still termed Bashaws. The Clays again are divided into a number of septs, among them the Patchens. The founder of the Patchen family was Geo. M. Patchen, and his sire was Cassius M. Clay by Henry Clay, from a mare the paternity of which is ascribed to Mambrino. There are four Cassius M. Clay, Jrs., which are entitled to a place in the Breeder's Trotting Stud Book, viz.: Amos', the sire of American Girl, 2:16½; Ballard's, by Jones' Cassius M. Clay, Jr., with four of his progeny in the 2:30 list; Neaves', with three in the same class, and Strader's, the sire of Harry Clay, 2:23¾. There are so many Clays—Henrys, Harrys and Cassius M.s, that it is something like the puzzles which are given to test the ingenuity, with the difference that the more effort there is to memorize them, the more inextricable they become. There is such a poverty of invention in a majority of breeders, when the faculty of naming horses is called into requisition, that there is continual repetition of names, and the tacking on of "Jr." appears to be the only recourse which is presented to their minds. Thus Geo. M. Patchen has a son of the same name, and three with the "Jr." attached. No knowing how many more, for the four are in the Stud Book, which involves trotting in 2:30, or better, themselves, or with a son or daughter of that much speed. Thus the original Geo. M. Patchen trotted in 2:23½ in 1860, at that time an extraordinarily high rate of speed. His daughter, Lucy, made 2:18¼, and there are four of his get in the list. It may be as well to trace the influence of the thoroughbred as we progress, in the consideration of pedigrees of the trotting families, though of necessity, there cannot be a complete history, or anything but a partial exhibition, without occupying too much space. Enough, however, will be shown to prove the great importance of the breeder keeping in view the source from which those of celebrity, with known lines of blood, have originated, and though conjecture may aid in fixing the parentage, absolute knowledge is the only reliable guide. Thus Grand Bashaw was an importation, and Col. S. D. Bruce, in the "American Stud Book," gives the following account of him: "Grand Bashaw, an elegant Arabian horse, of an iron-gray color, foaled in 1816, full 15 hands high, imported from Tripoli in August, 1820, by Mr. Joseph C. Morgan. He was selected by the importer from the best stock of Oriental horses in that country; and it is believed that in point of beauty, action and speed, he is not excelled by any horse ever imported into the United States." His son, Young Bashaw, was from Pearl by First Consul, grandam Fancy by imported Messenger. The dams of Andrew Jackson and Henry Clay have been claimed to be of various strains, and in all probability the "unknown" will always stand. The dam of George M. Patchen was by Head'em, a son of imported Trustee, according to the most reliable information, though this has been disputed, but only by those who will dispute, right or wrong, when the pedigree shows an admixture of thoroughbred. The dams of the Cassius M. Clay, Jrs., referred to were, of Amos', Mollie, by Phœnix, a son of Harpinus; of Ballard's, by a son of the Eaton horse; of Neaves', by Chancellor, a son of Mambrino, grandam by Engineer 2d, the son of Lady Suffolk, and nearly thoroughbred; of Strader's, by Abdallah, grandam by Lawrence's Eclipse; 3d dam, the Chas. Hadley mare, by imported Messenger. This is a very good showing of blood for those which are distinguished by gaining admittance into the Breeders' Trotting Stud Book, and all bearing the same name. The son of Strader's Cassius M. Clay, Jr., which has acquired the most distinction is American Clay, the sire of Granville, 2:26; of Maggie Briggs, 2:27, and of Ella Clay, 2:27½, and his dam was by imported Franky; 2d dam by Aratius; 3d dam by Josephus; all thoroughbreds. Sayre's Harry Clay was by Neaves' Cassius M. Clay, Jr.; his dam by imported Bellfounder, and he is the sire of the dam of St. Julien, and two others in the 2:30 list; of the dam of Electioneer, which is also the dam of Prospero, Elaine and Dame Trot, with records of 2:20, 2:20, 2:22. It will not be necessary to go over the Clays any further to show that it is a great family, and it requires such a repetition of the same names as to be tiresome reading. Tiresome as it is, some of the blood is a capital thing to have in the stud or on the farms where the object is to breed the kinds of horses under consideration, and, fortunately, in California there is a good deal of it. Among the California stallions of 1861 was a son of Cassius M. Clay, Mystery. He is described as "a dark chestnut, full 16 hands high, and weighing about 1,200 lbs." His dam is given in the advertisement, "Maid of Honor, by the Duke (known as the Bowman Horse), by imported Prince LeRove; she was raised by Joseph Laberee, of Eaton, Canada East, and never beaten in her races, at three and four mile heats. She was sold by Mr. Laberee to D. J. Cunningham, of Brooklyn, Long Island, who bred the horse Mystery." The dam of Tommy Dodd, record 2:24, was by Mystery, and his sire, Alexander, belongs to the Patchen branch of the Clays. Through the son of Geo. M. Patchen, Geo. M. Patchen, Jr., who was brought to this coast 20 years ago by William Hendrickson, the blood is shared by a large number of the sires and dams of California which have well sustained its reputation. Though the Stud Book gives his "dam as by Top Bellfounder, 2d dam unknown," the advertisement published in the *California Spirit of the Times* in 1862, gives it as "Bell, a well-known mare for speed and docility, g. dam by Messenger Eclipse, g. g. dam by Old Eclipse," and furthermore that the "sworn statements to prove the correctness of the pedigree can be seen at the stables of the undersigned, Geo. N. Ferguson & Co., corner of Sacramento and Kearney Sts., San Francisco." As his owner is not the kind of a man who was likely to be imposed upon by false statements, the pedigree as given will be accepted. He was a noted trotter, and his record of 2:27, made in Milwaukee, Wis., was much outside of what he had shown in his private trials. He is the sire of Sam Purdy, 2:20¼; San Bruno, 2:25½; Susie, 2:26½; Starr King, 2:27, and Shoo Fly (James D. McMann), 2:28¾, and quite a number which have trotted very near to the 2:30 standard, among them Alexander and Billy Hayward, which rank as "standard" sires through the performances of their get. Alexander trotted three miles in 7:57¼, and his offspring as follows: Tommy Dodd, 2:24; Reliance, 2:25; Nelly Patchen, 2:27¼; Alex. Button, when a three-year-old, in 2:29, and when four years old in 2:26¾. Billy Hayward is the sire of Alonzo Hayward—record of 2:30; and Poscora Hayward, the same at four years old, and a trial in 2:23½. There are others of the get of these two stallions which have shown well, and the dam of Crown Point, 2:24½, was by Geo. M. Patchen, Jr.

The size of those branches of the trotting tribes is in favor of the breeder, as it is rare that there is a member which can be classed in the small division, and the color is uniformly good.

The son of Andrew Jackson which has the most prominence in the Bashaw line is Long Island Black. He was a capital performer in his day, and his get and their descendants have been prominent on the tracks ever since his day. His dam was by Tippoo Sahib, a son of a horse of the same name by imported Messenger. Hamlet, by Long Island Black Hawk, "stood" in San Francisco, in 1861, his dam, Lady Kate, by Navarino; like in color to his sire, black; and also like him in being a large horse, 16 hands high and weighing 1,160 lbs. This is the only son of Long Island Black Hawk which I can discover among the old importations, though there are descendants of recent date. A son of his, Vernol's Black Hawk, from a mare by Webber's Kentucky Whip, grandam by Shakespeare, a son of Duroc, got Green's Bashaw, who has a high place in the trotting calendar. He has 11 in the 2:30 list, with a son, Josephus, which has trotted in 2:19¾. Buccaneer, the sire of the yearling filly, Pride, which got a record of 2:44½ on the Bay District course last November, is a grandson of Green's Bashaw.

Another prominent branch of the Clay family, and which is confined to California, is that which springs from The Moor (foaled 1867), brought here when a colt by L. J. Rose, of San Gabriel, Los Angeles county. With a limited opportunity, and though he died young (in 1875), his colts have gained distinction, and those in the second generation have shown two of the great "startling surprises" of 1880 and 1881, in the sisters, Sweetheart and Eva, their sire Sultan by The Moor, his dam by Delmonico, by Guy Miller, and his grandam by Mambrino Chief. The Moor has four representatives in the 2:30 class, viz., Tommy Gates, 2.24; Del Sur, 2:24; Sir Guy, 2:28½, and Beautiful Bells, 2:29½. When to these are added the 2:26½ of Sweetheart at two years old, and 2:22½ at three, and Eva with 2:26 as a two-year-old, it must be admitted as showing great merit in a family of so recent a date.

Thus, in the three great divisions of trotters which have sprung from Grand Bashaw, there is merit which forces recognition, and the Clays', Bashaws' and Patchens' valuable elements, and with which this State is well supplied.

[Note—In the last article there were a few typograpical errors, the most important being the one which changed *ten* into *two* in the case of Mambrino Chief. He was kept in New York State until he was 10 years old, the balance of his life in Kentucky. Imported Flounce was printed "Florence," Utilla "Ubilla," and "Adam Silburn" took the place of Adam Lilburn, as the breeder of Edw. Everett. When the difficulty of deciphering names in plain manuscript is oftentimes great, it is not surprising that compositors make mistakes when the "copy" is anything but clear.]

THE APIARY.

Transferring in Winter.

EDITORS PRESS:—In a former number of the RURAL a correspondent objected to uniting bees in March. Now I have gone and done it. The last week in January, this year, I found two hives that had queens that had mated common drones, and, as their wings were clipped, I knew that they were last year's queens. As I wished to start in early in the season with all pure Italians, I took the risk to unite them. I have all hives six ft. apart in the rows. I placed an empty hive half way between a hybrid and a pure stock; leveled it as for a permanent stand; smoked both hives with a bellows smoker to make them all have the same scent and to confuse them, giving them no more than is actually necessary and not enough to sicken them. I then removed all surplus frames, and placed the frames with brood in the center of the new hive, picking out the queen to be removed and securing her. The other queen was left on the comb among her own bees, and was the first one to go into the new hive. The frames were then alternated (first one, then another from both hives) until the hive was filled. The balance of frames and combs, with all adhering bees, were placed in the second story and the hive securely closed. After giving them another good and thorough smoking and regulating the entrance, they were left alone for a whole week, when I examined them to see how they adapted themselves to the situation. I operated on four hives, making two colonies from four. (I will here state that on one hive I used a rack of empty sections instead a second story. I wish to be particular). On opening the top of the second story hive, I found a cluster of bees hanging to the combs above, and it being cool, early in the morning, took all but three or four frames, that is, the outside ones which the bees were not clustered upon. A few hours afterward, in the middle of the day, I found them still clustered and lifted them out into an empty hive to examine the lower story. I then found a seperate and distinct cluster below, and several queen cells started which were then cut out. There were no eggs below. On returning the cluster, I found the queen in the cluster above, and a nice lot of eggs in the comb, with a good proportion of stores (unsealed) in the comb, around the circle of eggs. After again regulating the combs, the bees were all returned to the lower story, and all surplus combs removed. They are still there, and are working lively when weather is good for them to fly. I consider them one of my best swarms.

The swarm where I left the empty sections on, were on their combs when I looked at them, and the queen laying as though she had no interruption, and have improved every opportunity since

Now, Mr. Editor, this was the last of January, 1882, and a very bad season for opening a valuable swarm of bees. I tried it as much as for an experiment as for anything. I consider I have gained by it. Some would say that two queens would breed faster than one, and *it was absurd*: but I believe that the two swarms united will economize their heat and fill more combs, and the queen will breed faster, and the young bees will develop better, and more than pay for the change. Then I have a spare hive or so to divide with when the proper season comes. Some may say that I was very careless risking a valuable queen. I took all the necessary pains to avoid all risk by smoking and not leaving the colonies exposed longer than necessary, and had no assistance. Again, the entrance was closed so that only a few bees could pass at a time. Not a bee was killed or lost that I could discover.

A *sure* way to save a queen from risk would be to enclose her with a half a dozen of her own workers on a comb containing sealed brood for 24 hours until the bees discovered her presence and they had got used to the changed state of things.

I think the reason that many queens are lost in manipulating the hives, is that the party manipulating is more or less nervous from fear, and is not careful enough in the details. I lost only one queen for several years, and it was my own fault. I have introduced and transferred at all seasons of the year, and have been very successful. In transferring, if I can, I get a frame of brood from a hive with movable frames and place it in a hive on the stand of the transferred hive, it will keep the bees contented to stay until the transferring is finished.

This is a very backward season for bees in this vicinity. Bees commenced to raise brood the first week in January. Some have three frames of brood at present. The manzanita has very little bloom—I never saw so little at this time of year. Some of the early acacias are all in bloom, giving plenty of pollen, also the mountain laurel or pepperwood, as it is called. Almond blooms are opening; crocuses are daring to come out, and improve every warm day, which are few thus far. I have plenty of stores and bees are healthy. J. D. ENAS.

Naps, Cal.

HORTICULTURE.

Concerning Figs.

EDITORS PRESS:—A neighbor of ours was for a long time connected with the English house of Samuel Hanson & Co., the oldest and one of the most famous firms engaged in the importation of raisins, figs and dates. The "S. H." figs, imported by this firm, command the highest prices in the English markets. Mr. Nelms has kindly lent me a rare pamhplet, which is so full of interesting points connected with fig culture, that I have made copious notes for the benefit of the readers of the RURAL PRESS.

We have great quantities of fairly edible fresh figs, but thus far have produced very few, if any, dried ones worthy to be compared with the best imported. It is worth our while to know that the "S. H." figs are not obtained from the western Mediterranean coasts, but from Turkey in Asia, mostly shipped from Smyrna, but grown in the Aiden plain and along the banks of the classic Meander. The largest plantations, around Aiden, Nasli, Erbeyli, Sultanhessar and Demirkgik, are very peculiarly favored as to climate, the thermometer very seldom falling more than three or four degrees below the freezing point, and in summer does not often rise above 130° Fahr. in the sun. The winters are usually wet, the dry weather commencing in May and continuing till October. Any rain at the end of July or during the months of August and September, when the fruit is drying, is considered fatal, causing the skin to burst, hardening it and giving it a dark color. Heavy dews have the same effect. What is required is fine sunny weather and dry winds when the fruit is coming to maturity. Soil of a rich, light, sandy nature produces the largest figs, of a white, thin skin, and of the finest quality.

The first crop is never dried, because this is really the immature fruit of the previous year. The precious fruit grows upon the shoots formed by the flow of sap in the early spring, when figs appear at every eye. But the second crop, which is really the backward portion of the last, ripens about the 15th of September, and the fruit is fairly marketable. In Syria and Barbary, a third crop ripens on the trees after the leaves have fallen.

The figs are allowed to fall of their own accord, after which the women and children gather them into baskets and spread them carefully on a bed of dry grass or matting; so that the figs do not touch one another. They are turned every day by hand until the skin feels dry, while the inside is soft, when they are packed in camel's-hair bags, in packages weighing about 200 lbs., and sent to market. Though the Aiden railway now transports great quantities, camels are still employed in their transportation. The consignees in Smyrna who have made advances to the growers during the year, dispose of the day's market supplies, averaging in an ordinary year 800 or 1,000 camel-loads of 400 lbs. each, to the shippers, who remove the parcels to their own kahns, or warehouses, where they are carefully sorted and re-sorted by women, and then finally packed by men, an operation which requires the greatest delicacy in handling.

In early days this was done in barrels or large chests; in 1817, chests, half and quarter chests, drums and "cradles"—a nomenclature which is still retained. A box weighs 30 lbs., the others are in proportion; the small packages are enclosed in cases holding about 300 lbs.

The earlier importations of figs into Northern Europe were from the south of Portugal and the neighboring parts of Spain. Common figs were imported from Malaga and Seville, and were for the most part dried in ovens. Greece in prolific years exports as much as 10,000 tons of this fruit.

The increasing consumption of this fruit in the United Kingdom is shown by quotations from the Customs reports. In 1814, 577 tons supplied the aristocracy; in 1876, 4,989 tons were used.

I find in this pamphlet that the figs from the south of Europe are not worth more than half the price of Turkey or Smyrna figs. Also, that the trade in figs from Asia Minor is of comparatively recent date. It is probable then, that our stock of figs may be improved by direct importations from Asia Minor, inasmuch as most of the trees grown at present are certainly the "common fig" of Italy and Spain.

Whether the mode of planting practiced in Aiden, and where "Vostizza" figs are made, is better than ours, I leave to the nurserymen. "To form a tree, two slips are planted one ft. apart, and then joined at the top. The cuttings are put in within one or two inches of the top, and the crossing made after the shoot has grown up about two ft." In many of the orchards the trees are set 30 ft. apart; irrigation is practiced early in the season.

I find that the importation of Smyrna figs to our own country in 1874 was larger than to any other, except England, and this fact ought to encourage us in our efforts to produce the best. Three of our southern counties are hot and dry enough to furnish an amount equal that year's importation, 1,950 tons, if we could master the difficulties of manipulation. The most delicious figs that I have eaten were grown in San Diego,

but whether the so-called Smyrna figs are really such, and our failures in drying are owing to mismanagement, I cannot decide. Facility in turning and drying would be secured by the method used here in turning raisins, so that part of the labor may be greatly reduced, and our fruit growers probably have as delicate a touch as those of Asia Minor. Let us keep on trying until we learn why we have hitherto failed. In another paper, I will repeat some of the historical items concerning Dema and Valencia raisins, and our favorite Sultanas.

JEANNE C. CARR.

Pasadena, Feb. 7, 1882.

Olive Culture.

[This chapter I have copied entire from the French of Bertile, being a history, culture, products, and the effect on the public health, etc. I translate as follows :]

The touching story of the flight of the dove from Noah's ark, related in Genesis, proves the existence of the olive tree in the earliest period of the world's history.

It was a celebrated tree among the ancients. It held the first rank in their mythology; Minerva taught the Athenians how to prepare the fruit, and they had a most religious respect for it. The oil was used mostly in religious ceremonies by the ancients. The Romans used the wood not only as fuel, but on the altars of their gods, it was the emblem of peace.

The olive tree transported from Egypt to Attica, belongs to the jasmine family, with evergreen foliage, small blossoms in clusters, and having some likeness to the older tree flowering in June. It can be propagated in many ways, but the best way is by planting the seeds, and it is one which is practiced least. Except in damp soils where its roots rot, the olive grows everywhere. It accustoms itself to both dry and wet climates. Clay and mud are indifferent to it. Its long life is proverbial. In return it takes 30 years, a man's life-time, before it reaches its full capacity for bearing fruit. Of this tree, one of the most valuable gifts of nature, there exist 16 or 17 species, all exotic. Its fruit is oval, fleshy, with a hard woody seed enclosing a kernel. The meat, fine and covered with a green skin before its maturity, softens and becomes a purplish black in ripening; it is then that they grind them in the mill, then put them in a press to extract the oil.

With some exceptions one may say that the Mediterranean basin, from the 35th degree to the 43d degree of latitude, is surrounded with a belt of olive trees. It is from this region that all Europe receives its olive oil, for table use and for light. For either from some trouble in the growth or some imperfection in the manufacture, perhaps both, the African coast produces very inferior articles which can only be used for lamp oil or grease.

Some of the islands of the Grecian archipelago and the western shore of the Adriatic produce better oil, but destitute of sweetness and suppleness, qualities most desired by consumers and only found in the oil made in the valleys south of the Alps. In the center of this region, extending from the promontory of Saint Tropez in France, to Lavona in Italy, in the Gulf of Genoa, Nice is situated, whose reputation for the best oil has exceeded all other places in the world.

From the Var to the Roya the valleys that surround it are protected from the north wind by the Alps. The temperature of the winter, which is the season the olive ripens, is the same as spring in the center of France.

This exceptional climate allows the fruit to reach its perfect ripeness and, together with the method of manufacturing, gives the superiority which the oil of Nice, without question, has to-day over all other places. The annual production of this region is valued, on an average, at four or five millions kilograms. The harvest begins in November and lasts until April or May.

There is a crop every two years, and lack of rain and intense cold combine in killing the tree. There are many instances of olive trees being bitten by frost and in this case the trees must be cut to the ground.

The uncertainty of the crops and the biennial yield of fruit cause the high prices of olive oil.

The olives gathered in the vicinity of Nice are all sent to the mill to be pressed into oil. They only pickle those that would not make good oil, and all the olives we have on our table come from those regions where they don't ripen. The bitter taste they have in this State is destroyed by letting them soak in alkaline water; then by preserving them in brine seasoned with different herbs. By this preparation they become an aperient food, but less nourishing and less digestible.

One only needs to read a good cook book to find in how many forms oil can be used—but success in the concoction of different dishes can only be obtained by the use of good oil. Failure in such dishes has been many times caused by rancid oil.

Rich in azote, and with considerable nutritive qualities, olive oil possesses, in the first place, the power of assimilating with the human body. It is instrumental in assisting in many medicinal cures where the method is cutaneous. It being more liquid than animal fat, always used for that purpose, it is easier to absorb. The inured parts, protected from the air by oily substances or salves, heal more quickly. These unctions give, besides, more suppleness and elasticity to the muscles. As it is not penetrated by the poisons in the atmosphere, it is used with success in counteracting the deleterious miasma around swampy districts. It ought to be greatly preferred for the hair to pomades, as it acts more quickly on the scalp. Taken daily, by the spoonful, it is an excellent laxative to the system, and not tiresome to the stomach.

It ought to be preferred as a medicine on account of its cheapness and pleasant taste, to those purgative powers so distasteful and expensive.

We read in history of the elasticity and vigor of the Grecians and Romans, and these qualities, without doubt, have been produced by the constant use of olive oil among those ancients. Unlike all animal fat, that is injurious to the stomach and thins the blood, it assists the digestion and permits the body to develop correctly, and the brain to reach the highest stage of human intelligence. Be that as it may, the beneficial effect that olive oil has over human organism cannot be disputed.

Originally only eaten where it was made, since the communication between all countries has become so much easier, this article of food is universally used. The most important thing is to get it pure. Unfortunately, on account of the cheapness of oils made from seeds and nuts of different kinds, commerce has adulterated olive oil as it has so many other articles. Oils made of peanuts, sesame cotton and poppy seeds are sold by millions of kilograms under the name of olive oil.

This unwholesome adulteration, which can create the most serious disorders on the digestive organs, should be carefully avoided by persons who have any regard for their health.

Mechanics refuse seed oils because of their dryness, as they gum up the machinery instead of greasing it and keeping it clean. It is just as important that the machinery of the human body should rebel against such oils. We ought to be familiar with the methods of extracting oil from all oleaginous substances, being so necessary to different industries. But all the table oil should give the preference to that made from a tree that the Almighty saved from the destruction of the Deluge, and a branch of which the dove carried to Noah as a sign of forgiveness.—*Ellwood Cooper, in the Santa Barbara Press.*

THE DAIRY.

Feeding Oat Straw.

How to turn oat straw to account in cow feeding will be of interest to our dairy readers in the upper coast counties of California and farther north. The subject is being discussed at length by Eastern experimenters. Prof. Sanborn, of the New Hampshire Agricultural College, writes to the New York *Tribune*, that the value of oat straw has not been unduly lauded, as the following trial, one of several each year for five years, will show: Lot No. 1 ate of timothy for 40 days 43.6 lbs. per day, and gained 1.42 lbs. per day. Lot No. 2 ate 6 lbs. cottonseed meal and 19.8 lbs. oat straw per day, and gained 2.75 lbs. per day. Both lots were of two steers each, of like ages and weights. This particular trial shows better than the average result of straw and meal against good timothy hay, yet I have universally found for all periods (and some were of 98 days) and in all trials, that straw and meal, especially where the right meal had been used, are much more economical than hay. No skillful feeder can afford to waste oat straw, and I am of opinion that it is far too valuable to use for bedding. Some of the straw will be left and this may be cut and used; when cut it will last as bedding longer than the whole straw. I regard oat straw when rightly fed as worth over three-fourths as much as good hay.

If I take fish meal, the most costly food I have fed ($50 per ton), the account will stand as follows in a period of 49 days: Lot No. 1, 4 lbs. fish and 1 lb. of corn meal, 11¼ cents, and 33 lbs. of straw, at $7.50 per ton, 12.37 cents per day; total cost, 23.62 cents. Lot No. 2 ate 50 lbs. hay at $15 per ton, 37.5 cents per day. There was 2 lbs. difference in the gain, 90 lbs. and 92 lbs. respectively. Now readers who believe in mathematics for the farmer, or exact facts, may figure something like this: The cost of the meal for Lot No. 1 subtracted from the cost of hay for Lot No. 2, 25.25 cents for 33 lbs. of straw, or $15.30 per ton, or 30 cents more per ton than the hay is valued at. An important phase of the ration is the purchase of a manure food at $50 per ton, and the sale of it to farm stock at cost. As it is usually assumed that at least 80% of nitrogen fed is left in manure, we then have $40 of manure value left. I have not attempted in this manure question to make accurate figures from previous data, but simply state them by the common practice as approximations and worthy of consideration. Nor do I mean to indorse the purchase of nitrogenous foods for plant nutrition in heavy amounts, unless one is engaged in a skillful rotation, involving the the use of mineral fertilizers.

The reasons why oat straw and swale hay have been so meanly rated by farmers is clear to me, as shown by the result of much weighing. I only wish now to reinforce the growing good feeling toward this much abused food. Analyses of the foods fed have been made and tabulated, and they show, as you have already quoted me, that the combinations are not only of money economy but are economical of organic matter. In other words, 65 lbs. of organic matter in oat straw and cottonseed meal have often been as successful as 100 lbs. of hay.

THE FIELD.

Cotton Growing in Kern County.

As cotton is engaging the attention of many experimenters in this State and has possibilities of much greater production, we give in full a statement of the expenditures and receipts in connection with the Kern county cotton, which we recently mentioned as sold to go to Oregon. The report was prepared for the Bakersfield *Californian*, as follows: We have before stated that, this year as well as last, an experimental crop of cotton had been grown at the Belle Vue farm of Messrs. Haggin & Carr, in this vicinity. This year 82 acres were planted with all the varieties grown in the Southern States, and all did well except the Sea Island, to which six acres were devoted, that proved a failure. The land upon which the crop was grown is second class. Of course it would have been much better on land of the first quality. As we have always believed the delta of Kern river well adapted to the growth of this great staple, and that it is peculiarly the poor man's crop, there being no other that requires so little capital, or to which his labor and that of his family, if he has one, may be so advantageously applied, we have induced Dr. Thornton, general superintendent of the interests of the firm in this county, to give us an itemized statement of the cost of producing, and the profits of the crop under consideration, which we append. It will be seen that the net profit—$15.08 per acre—covers the six acres referred to, which was a failure. Three bales of the cotton ginned (94 bales in all) was the result of a small and also successful experiment by Messrs Howell & Co. The profit per pound on the lint cotton is given at 4 6-10 cents. A careful study of this statement ought to convince farmers in this vicinity, whose limited means compel them to work on a small scale, that they could derive greater and more certain profits from such a crop as this than from those they are accustomed to grow. Following is the statement:

Cotton Crop of Belle Vue Ranch—1881.

STATEMENT.

No. acres planted, 82; No. acres picked, 76. Commenced planting March 17th ; finished planting March 31st. Commenced picking August 27th and continued on until crop was ginned.

PLOWING, PLANTING AND PREPARING.		
Labor, $61.25; board $15.35	$76 60	
Teams and feed	35 89	
Hire of implements	8.60—	$ 121.09
IRRIGATING EIGHTY-TWO ACRES		
At such times as the crop required it.		
Labor (no board), Chinese		199.00
Cost to irrigate per acre as above $2.42		
WORKING, HOEING AND CULTIVATING		
At such times as crop required it.		
Labor, $215.50; board $64 47		279.97
Cost per acre to work and Cultivate, $3.41.		
PICKING.		
Labor (no board), Chinese	1,296.72	
Foreman in charge	45.55	
Board of foreman in charge	11.25—	1,353.52
Total amount of cotton picked, 93,972 lbs; total No. days picking, 1,319; av. amount picked per man per day, 71 lbs.; average cost ℔ lb. to pick, .0144.		
GINNING.		
Ginning labor	$ 136 33	
Repairing gin	3.50	
Hauling fuel	3.50	
Total for labor	$ 143.33	
Board	24.00	
Teams and feed	3.15	
Wagon hire, 3½ days	70	
Engine and gin hire, 22 days at $5	110.00	
Total cost ginning	281.18	281.18
Cost ℔ lb. to gin seed cotton, .0029; cost ℔ lb. to gin lint cotton, .01; number lbs. seed cotton ginned per day, 4,397; number lbs. lint cotton ginned per day, 1,269; total number days ginning, 22; total cost per day to gin, $12.78. The ratio of 3.4 lbs. of seed cotton to 1 lb. of lint cotton, or a loss of 71%.		
BALING.		
Labor, $35.25; board, $10.50	45.75	
Teams, $8.75; feed, $7	15.75	
Hire of press 17½ days	17.50	
Burlap, 528 yards	54.43	
Rope, 208 lbs	41.60	
Needles	40	
Twine	5.40	
Total cost of baling	$ 180.83	180.83
Total No. bales, 94; cost to bale per bale, $1.92.		
HAULING TO SUMNER DEPOT.		
Labor, $6.35; board, $1.50	7.85	
Teams, $7; feed, $5.60	12.60	
Hire of wagons	1.20	
Total cost to haul		21.65
Cost to haul per bale, 23c		
Total		$2,437.24
Less cost of ginning and baling cotton crop for F. Howell & Co.		14.69
Total cost to make, irrigate, work, gin, bale and haul Belle Vue cotton crop		$2,422.55
CREDIT.		
By cotton crop, viz.: 91 bales, 27,101 lbs., at 13½c	$3,658 63	
Net profits on Belle Vue cotton laid down at Sumner depot	$1,236 08	
Net profit per acre on 82 acres		$15.08
Net profit per pound		.046
RECAPITULATION.		
Price of crop		$3 658.63
Cost of production		2,422.55
Net profit on crop		$1,236.08

ARBORICULTURE.

Catalpa and Black Wattle.

EDITORS PRESS:—Perhaps some of your readers who are interested in timber culture are willing to exchange experiences through the PRESS, thereby conferring favors on many who contemplate planting forest trees, and are casting about for varieties best adapted to their several localities. The blue gums and other varieties of the eucalyptus do not fill all the requirements, being far too sensitive to frost (cold), and must have more moisture in the first and second year of their growth than can be depended upon on most upland soils, except it is supplied artificially, and then the quality of wood is poor and the timber is almost worthless.

I have been experimenting a little for the past two years with the catalpa (*speciosa*) and black wattle. The first named does not seem to thrive on the red upland, but on moderately moist, sandy bottom land it has attained a growth of eight and one-half ft., seven ft. two inches of which was made on the trees the last year.

A part of the wattles were planted the 15th of December, 1880, and were not protected from frost or cold in any way, but they came up readily, and though the ground was often frozen, they did not seem to be at all affected thereby, and have attained a growth of from three to four and one-half ft. To test them in regard to their capacity to stand drouth, I reserved a part of the seed till the 15th of April, 1881, and then had them planted on the southern slope of a mountain, the dryest place I could find on my ranch and as dry as can be found almost anywhere in this county. There were no rains after they were planted till autumn, and the plants had neither artificial wetting or cultivation. Still the plants grew right along, and are now from 18 to 24 inches high. I also planted a few seeds—one hundred or two—in my lot in town, and when about a foot high, a flock of goats broke in in the night and ate them all off level with the ground. I supposed them spoiled, and paid no further attention to them, but they sprung up and are now as tall as they were before, and that (the goats eating them) explodes the idea advanced by the Australian Commissioners of Forest Culture that stock will not browse them. I find also that the festive jack rabbit has a partiality for them, often eating them to the ground when 18 inches high. I hope this little sketch of experience will draw out others who can really throw light on this to me interesting subject.

JAS.

San Diego, Cal.

[We hope so too. We ought to vary the discussion of fruit tree growing with something about timber culture. Let each reader feel himself invited to come forward with his experience and observation.—EDS. PRESS.]

THE STOCK YARD.

Experiments in Cattle Feeding.

At the Illinois Industrial University, where our esteemed friend G. E. Morrow is Professor of Agriculture, there were carried on last summer some interesting experiments in cattle feeding. Eight young steers were purchased in the spring of 1880. Two were full-blooded Ayrshires, two seven-eighths Devon, two were half Hereford, one a full-blooded Short Horn, and the other three-quarters Short Horn. The whole of the cattle were put out to pasture until October 1st, when they were wintered on inferior, unthrashed Oats, thrashed timothy straw, corn straw, and toward spring a little corn. The next summer they all spent at pasture, receiving a full feed of corn daily until September. Then they had new corn in the ear, about half a bushel a day each. In August one of the Ayrshires met with an accident which necessitated slaughtering it. In November all the others were shipped to the Chicago fat stock show. At the end of the show they were all slaughtered in the presence of a committee of butchers. The table below shows the results of the weighing :

NAME OF BREED.	Age in Months	Weight at Slaughter.	Gain in Since Purchase.	Weight of Dressed Meat.	Per cent. to Live Weight
1. Ayrshire	22	1220	615	733	60.00
2. Seven-eighth Devon	21	1175	685	707	60.00
3. Seven-eighth Devon	19	1135	640	677	59.63
4. One-half Hereford	26	1545	790	965	62.45
5. One-half Hereford	15	1200	710	750	60.00
6. Short Horn	20	1400	765	880	62.86
7. Three-fourth do	21	1300	575	815	62.69

The butchers who pronounced upon the quality of the meat placed the animals in this order: Short Horn, Ayrshire, seven-eighth Devon, seven-eighth Devon, three-fourth Short Horn, one-half Hereford, one-half Hereford. This is an interesting result, and one that will be especially satisfactory to Short Horn men, for the reason that their favorite breed of cattle is by some persons supposed to be unfitted for "roughing it" in the style indicated above. It will be observed that the butchers, judging from the quality of the meat only, placed the animals exactly in order according to the proportion of improved blood in them.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

Appointment of District Lecturers.

The following District Lecturers have been appointed by the State Master:

Nicholas Mertes, for Placer county.
B. R. Spilman, for Sutter county.
Geo. Rich, for Sacramento county.
W. G. Phelps, for San Joaquin county.
Joel Russell, for Alameda county.
E. T. Blackmar, for San Diego county.
A. A. Bayley, for El Dorado county.
And I. C. Steele, for San Mateo county.

The Worthy Master desires that the members of the Order in each county shall, as soon as possible, make recommendations for Lecturers.

The W. M. at St. Helena Grange.

St. Helena Grange, No. 30, P. of H., installed its new officers Saturday last, 18th inst., and held its usual harvest feast incident to the occasion. It was a most pleasant affair and heartily enjoyed by all. The feast came first, an excellent and substantial repast spread about 1 P. M. in their beautiful hall in the Winegrowers' building. After this a considerable intermission was had when the ceremony of installation was performed by Daniel Flint, of Sacramento, Master of the State Grange, assisted by Mrs. A. Clock as installing officer. Mr. Flint prefaced the ceremony with a few remarks concerning the Grange and its prospects. He had seen, he said, more present, yet he saw here those who were its charter members and when they were present there was always room for encouragement. There was here a vast field for the work of the Grange, and it had good material to select its workmen from. Concluding his remarks with the beautiful and impressive charge upon agriculture, from the ritual of the Order, he then proceeded with the ceremony of installation, beginning with David Edwards, Master, who has been many times re-elected to that position. Upon assuming his station, Mr. Edwards was called upon for a statement of his policy for the campaign, and responded by thanks for the honor conferred upon him and a regret that he had done so little good during a long previous incumbency of the same position. The Grange work was noble and needed in the land. It was especially desirable to teach children the nobility of labor, that they may make more honorable and useful citizens. He had labored earnestly for the cause of the Grange, and prayed for its success; and though it had not prospered as he wished, still he had hopes for the future. Mr. Edwards closed with applause, and was admonished by Mr. Flint not to be discouraged; the Bible says: "Cast thy bread upon the waters, for thou shalt find it after many days!"

The balance of the officers were then obligated together, and installed separately, as follows:

John Lewelling, Overseer. Mr. Lewelling, on being called on for remarks, said he had endeavored to do his duty so far as in his power and should continue to do so. Mrs. H. A. Pellet, Lecturer. Mrs. Pellet pleaded guilty to not having done all that she might for the Grange, and promised to increase her efforts for the future. Capt. Petersen, Steward, invested with the badge of office, wished to be excused from a speech. F. W. Hewes, Assistant Steward, would try to fulfill the duties of his office to the best of his ability. He was invested with the pruning hook as a badge of office, and was admonished by Mr. Flint that he would be expected with it to haul many new members into the fold. Mrs. Stone, Chaplain, responded that it was her intention to discharge her duties in the fear of God. Chas. A. Storey, Treasurer, couldn't tell how the finances would stand at the end of the year, but would guarantee to keep all he could get hold of [laughter]. Harvey J. Lewelling, Secretary, presented by the installing officer as one known to be capable and faithful, an expression Mr. Flint heartily approved. Mr. Lewelling responded to the usual call that he should endeavor to discharge his obligations to the best of his ability. Mrs. John C. Weinberger, Pomona, was crowned with a wreath of fruits and presented with a sprig of almond blossoms. Mrs. Peterson, Ceres, crowned with a wreath of grain and given the sickle of the harvest, returned thanks for the honor, and would endeavor to discharge her duties to the best of her ability. Miss Fannie Stone, Flora, crowned with wreath of flowers, and on excusing herself from remarks, Mr. Flint said he hoped she would not prove an instance of the flower that was "born to blush unseen" or "waste its sweetness on the desert air." Mrs. Castner, Lady Assistant Steward, was invested with a staff of office. She declined a speech, but promised a song by and by, which was gracefully fulfilled at the close of the ceremony, Mrs. C. being the talented organist and chorister of the Grange.

This ended the public ceremonies and the reporter, with other visitors, took his departure to give opportunity for the closed meeting which followed. Owing to a misunderstanding of time the attendance was not so large as it should have been and some expected remarks from Mr. Flint were on that account deferred to a more favorable time.—*St. Helena Star.*

Old and New.

I tell you what
The farmer's lot
Was anything but funny;
His daily toil
Was in the soil
In quest of ready money.

And if he did not keep his eye peeled on a parallel with his plow, spade and hoe, and all of them abundantly busy in the dirt, the chances were that his finances got crooked and took a tumble, because in agriculture fortune don't often happen to favor the lazy fellow.

At early dawn
With weary yawn
He rued the night was over,
Then hied away
To eke the day
Mid fields of grain and clover.

Of course, while striding in the furrow, he felt grout, and grumbled at the hum-drum and woeful bondage of his life, but never looked a nose length into the practical problems of the plow—just grubbed away, and growled away, and wondered how many more kinks it would take to make final wreck of his poor old spine.

The good wife, too,
Went sadly through
A world of weary trouble;
No time for rest
But work her best
To make the fortune double.

It was all work, no play, and Jack a very dull boy. Crops to be raised, money to be scrimped, squeezed and stowed away in the stocking, and the eye of the mind kept bent to a lowly squint down into the same old rut very far below the progressive mark of the nineteenth century.

But now apace
Another race
Of farming wights is coming;
With level brains
They take the reins
And modern tunes are humming.

The Grange has mustered its forces and marched into the world, with a "thinking-cap" on its practical head, and is rooting around among the old fossils for room to plant new ideas. It has found out that men's minds need cultivating as well as their farms; that the tug, toil and grinding worry of the old bondage need toning down into better methods, and that labor is very far from being rightly rounded out, when the lion's share of its recompense sifts slyly down into the wrong pocket.

The middle man
Should sweat and tan
Just like his honest neighbor,
For those who hold
The shining gold
Must be the men who labor.

When right prevails permanently between man and man, and the scales of justice are in exact equipoise between work and wealth, this grave old world will skip along gaily in its orbit, with a bland glow of mellow sunshine in every nook and cranny of its animated crust, and the good work of the Grange will be written down plump and square right in the center of the broadest page of modern history.

Then he who plows
And milks the cows,
Or plans the yearly tillage,
Will be the peer
Of any seer
Who struts a Yankee village.

—*T. K., in Grange Bulletin.*

Meetings and Elections.

Montezuma Grange, Solano county.—Thos. T. Hooper, M.; John Gapin, O.; Sister Gapin, L.; J. Bird, C.; D. Cushman, S.; J. Galbreath, A. S.; G. M. Daniels, T.; Sister A. F. Parker, S.; C. Nelsen, G. K.; Mrs. L. Galbreath, P.; Mrs. A. Daniels, C.; Mrs. G. Unger, F.; Mrs. F. F. Hooper, L. A. S.

Sutter Mill Grange, El Dorado county.—Wm. Stearns, M.; Robt. McKay, O.; F. Vierkamp, Sr., L.; Wm. Vierkamp, S.; Jas. Crocker, A. S.; Joshua Barnes, C.; Geo. W. Ramsey, T.; Jas. W. Quirk, S.; E. M. Smith, G. K.; Sister A. Mahler, P.; and L. Rasmusson, F.; Sarah McKay, C.; L. Chalmers, L. A. S.

Mattole Grange, Humboldt county.—Stephen Goff, M.; C. S. Cook, O.; Jacob Miner, E.; M. J. Conklin, S.; Theodore Aldrich, A. S.; Mrs. S. E. Marshall, C.; Chas. A. Doe, T.; Colman Wilkes, S.; Wm. Roberts, G. K.; A. E. Cook, C.; Mrs. H. S. Doe, P.; Mrs. E. Roberts, F.; Mrs. A. A. Benton, L. A. S.

Grange News.

We gather the following items from the *Patron:*

The Executive Committee's semi-annual meeting will be held in this city, on the first Tuesday in April, at which the Worthy Master and Lecturer of the State Grange are expected to be present, when, it is hoped, that arrangements will be made for active work, in which every District Lecturer in the State, in conjunction with Bros. Flint and Davis, will take part.

Worthy Master Flint says that, whenever a regular or union Grange meeting is held at any convenient distance from Sacramento, he will, if notified of the fact, endeavor to be present.

J. H. Bullard and wife, for some years belonging to Elmira Grange, and living 16 miles distant therefrom, have not missed attending the Grange every two weeks (with the exception of three times) since the Grange was organized. The Brother who has such a continuity of purpose, with a wife who willingly leaves her housework every other Saturday, and travels 32 miles to attend Grange, will do to tie to in rough weather.

The report of the Treasurer of the National Grange makes the aggregate funds in the National Grange treasury $54,808.55. Deducting approximate expenses of last session of National Grange, as compared with previous session's expenses, $11,176, leaves a net balance in National Grange treasury at the close of its last session of $43,626.50.

Agricultural Notes.

CALIFORNIA.

ALAMEDA.

Beet Contracts.—*Reporter:* The Standard Sugar Refinery offers to make contracts for beets for the coming season at $4.25 to $4.50 per ton, according to quality grown in different locations, judged by the crops of former years. The increased capacity of the machiney will permit the working of a larger quantity than has been worked any season yet, and the advance of 25 cents and 50 cents per ton will doubtless secure all that will be desired.

The Season.—Although so little water has fallen so far this year, there is no cause for fear of drought. Grain does not lack moisture yet, and there is nearly a certainty that there will be plenty of rain to make good crops in this part of the State. A little water judiciously distributed is as good as a flood, of which a great portion runs off.

COLUSA.

Editors Press:—The heaviest rain of the season in this vicinity commenced on the night of the 23d inst., continuing all night and the greater part of the next day. Last night, 25th, it commenced raining about 9 P. M. and rained almost continuously till about 7 o'clock this morning. At the present writing angry clouds are hanging over the Sierras, while here it is as bright as noonday. The snowstorm two weeks ago was very acceptable, but this last storm has sunken deeper into the ground and consequently will be more beneficial in case another north wind sets in. I had given up sowing for some time past, but on the strength of this last shower I think I can venture to sow barley on good rich bottom land as late as the middle of March, and later if favorable showers continue. The white willow is already in leaf and the black willow is covered with catkins, and soon all nature will look gay again. In California we don't have to wait for the seasons, but when spring time comes we have spring.—L. D. J., Olimpo, Feb. 26.

Steam Wagons.—*Sun:* Capt. Roberts was in town on Thursday last, says the Orland *Times*, on his way across the creek to negotiate with the farmers for the right of way for his steam wagon. He intends running it again the coming season, on about the same line as last season, but is going to make some improvements in the road. If he finds all satisfactory, he will put some forces to work on it within a week. He tells us that he will have a new machine—one that will be more practicable. He feels very confident that this one will be a success. The boilers will be different, and the machine constructed differently in many particulars. This company have expended a great deal of money and time on these steam wagons, and we hope they will make a success of them. Last year their machine worked much better than the previous one, but still it was at fault. They have now changed the machine so as to overcome all these difficulties. The Captain thinks that with the machine they are building now they can haul from 60 to 80 tons without any trouble.

Value of Straw.—It costs next to nothing for a farmer to put up all his straw in such shape that will keep for years. Every few years it is so dry in some parts of the State that stock can be bought for almost nothing. This winter sheep have been sold for 25 cents a head in the southern part of the State. Now if the farmers down there had made a practice of putting up their straw every year when they had straw, every one of those sheep could have been saved. If our Colusa county farmers had put up straw they could have taken advantage of the low price of sheep. Even in this county the cold dry weather has caused the loss of thousands of sheep, which a few tons of straw would have saved. As dry seasons usually go by pairs, we may have a dryer season next year than this, and we hope to see every farmer in the county put up all the straw he can.

Crop Prospects.—With our present rain, we may say that the crop prospects of Colusa county are good. The grain was looking well before the rain, even on the poorer quality of land; in fact, the frost and cold weather did not seem to affect the alkali land as much as the higher and better quality. Of course we need some more rain for good crops, but Colusa will have wheat to sell.

EL DORADO.

The Peach Promise.—*Republican:* We have seen peach trees in blossom here in Placerville in the month of February, and the roads as dry as in summer, but the snow blossom has so generally prevailed this year that the peach blossom has not yet began to think of making its appearance, and we opine it is all the better for the peach. The general opinion now is, throughout this county, that we shall have a most bountiful harvest this year, including fruit of all kinds.

Insect Treatment.—Lieutenant Paul Vignaut, who has a fine orchard in the northern suburbs of Placerville, has met with fine success in the use of a mixture of ashes and slacked lime, half and half, in bulk, of each—as a codlin moth exterminator. He stirs up the ground for several feet around each tree, and works in this mixture, and also, after scraping the loose and rough bark from the trees, gives the trunk and limbs a thorough dusting with it. This latter course is pursued in dry weather, when rain is indicated, that the water may dissolve the mixture and carry it into any interstices that might escape the dry powder and in which the little pests may be hidden. He has found this treatment very effectual.

LOS ANGELES.

A Mammoth Yield of Oranges.—Riverside *Press:* A. B. Clark, postmaster at Orange, will this season gather 1,600 boxes of oranges—about 256,000 oranges—from six acres of orchard planted six years ago last summer to trees budded with the Wilson's Best. This, so far as we know, is the best yield of fruit ever reported in this State—age of trees considered. If the fruit is sold at $2.50 per box it will net Mr. Clark about $500 per acre, which is certainly good enough, although some people might grumble and say an orange orchard don't pay.

Winter Irrigation.—Anaheim *Gazette:* A few practical facts in regard to the results of winter irrigation will not come amiss just now. As we have already stated in these columns, more irrigation has been done this winter in this vicinity than in any former year. The absence of rain has stimulated the farmers, and there are now four ditches bringing down a vast amount of water and putting it where it will accomplish the most good. The district which has received the most thorough irrigation (outside of Anaheim proper) is Orangethorpe. The farmers of that place buy their water from the Anaheim Co., and convey it to their lands through a branch ditch. Mr. D. E. Miles has made some rough calculations as to the probable result of this winter's irrigation. He estimates that 1,000 acres of land in the district referred to has been thoroughly irrigated. The land will yield at the very lowest estimate, 10 sacks of grain to the acre, worth at harvest time $1 per sack, or if kept until October it will be worth $1.50 per sack. Thus, the gross income from this land will be from $10,000 to $15,000, possibly $25,000; whereas, if it had not been irrigated, it would not have produced a ton of hay or a sack of grain. This result is brought about by the expenditure of about $500 for water and the cost of making their ditch, which probably did not exceed $1,000, and which will, after being cleaned, be ready for next winter's irrigation. The farming district west of town is also being irrigated extensively, and the lands lying under the Cajon ditch have received bounteous irrigation. On all the land so irrigated good crops will be made.

Notes.—*Express*, Feb. 25: A delightful rain set in again last evening at about 5:30, and continued steadily until after nine. After that occasional showers fell till midnight. Things were thoroughly wet down this morning, and to say that our people were happy, would fail to express it. The country is safe now. The big farmers are assured of good crops, and the sheep feed will grow apace.

Wine and Brandy.—The wineries of Mr. L. J. Rose contain, as the result of the year's work at both distilleries, 560,000 gallons of wine and brandy.

MENDOCINO.

Mortality Among the Sheep.—Ukiah *Dispatch:* We learn that the sheep on Mr. M. W. Fairbanks' ranch, in Anderson valley, are dying off very rapidly, the mortality being caused by a worm in the liver. The principal loss is said to be among yearlings. The worm which is killing Mr. Fairbanks' sheep is from 4 to 7 inches in length, from three-eighths to half an inch wide, flat and jointed like a tape-worm, and, on being stretched out, will break into pieces, coming apart at the joints. The livers of all the sheep which have been examined were found to be infested with these worms. Out of a flock of 600 sheep, about 200 have already died, and the mortality continues at the rate of from 5 to 20 per day. Mr. J. W. McAbee has promised to procure us several specimens of the worms for examination.

MONTEREY.

Fruit.—*Democrat*, Feb. 25: That we have not had established, long since, orchards sufficient to meet all domestic requirements seems difficult of explanation. At last, however, we can report that a beginning is made in the direction indicated, and an example set which we believe will be followed systematically. The parties referred to, Messrs. A. W. Mabury and Paul Romie, are old nurserymen and orchardists, and having looked over a good deal of ground and examined many localities, they have, entirely independent of each other, pitched upon a portion of the Nacional rancho as best suited to their purposes. They say that the whole of the rancho this side of the slough which passes through the tracts of Robson and Bidache is as good as that selected by them. Mr. Mabury has 12 acres adjoining the Salinas town plat on the southwest, all of which is given to an orchard of fruit trees, with the exception of a narrow strip on their eastern border allotted to

blackberry vines. The enterprise has no feature of a nursery, Mr. Mabury's intention being to sell only fruit. Paul Romie, for some years in charge of the Saucito orchard, near Monterey, and more lately employed in a similar enterprise on the Ranchito, opposite Soledad, has planted his stakes permanently on a tract of 17 acres which he bought of Childers, lying on the Monterey road, a short distance beyond the narrow-gauge track. His opinion of the suitableness of the ground coincides with that of Mr. Mabury, and he proposes to carry on a nursery in conjunction with an orchard, devoted almost entirely to apple trees of winter varieties.

NAPA.

BEES AT WORK.—EDITORS PRESS: Almonds in bloom, bees working lively. Weather pleasant and warm; had a good rain past 24 hours.—J. D. ENAS, Napa.

SAN BERNARDINO.

RIVERSIDE WATER RATES.—*Press*, Feb. 24: An adjourned meeting of the Board of Supervisors was held last Monday. On motion of Mr. Hisom, the rates of the Riverside Canal Co. for water charges were fixed as follows for 1882: Day and night water 7½ cents per inch, day water 5 cents per inch, and night water 3 cents per inch. This motion was carried by the whole Board, excepting B. B. Handy, not voting.

WORK.—*Index*, Feb. 24: Several persons who have been out in the country since the rain, say they never saw the farmers as busy as they are now. They are plowing and putting in grain, and are confident of as good a crop as if it had rained earlier in the season. They say if we have any way near as much rain in March and April as we usually do, it will be better for the grain than if there had been so much rain earlier and been followed by a month or so of dry weather before the spring rains came, as is frequently the case. There are also more vines and trees planted this spring than common. This and the putting in of the grain crop all coming together, as they do this season, makes this a busy time.

SANTA CLARA.

SEED GROWING.—Santa Clara *Journal*, Feb. 25: The seed raising business is developing into large proportions. Several farmers near town have planted for seed—mostly onions—while close by we have three seed ranches where nothing else is raised. That of Messrs. Morse & Kellogg is the oldest. They are cultivating this season 140 acres, mostly leased of McLaughlin. The varieties raised are chiefly onions, lettuce, beets and carrots. On the McLaughlin lands, also, Mr. J. M. Kimberlin and Wm. Meggatt are engaged extensively in seed raising, the former having about 150 acres in to various kinds, and the latter about 130 acres. If all this seed growing thrives, the chances are that the market will be a little crowded, and that prices will be low.

PAJARO VALLEY.—Watsonville *Transcript:* Throughout this whole valley, and from the surrounding foot-hill farms, the cheering news comes that a full crop this fall is assured. Orchards are doing well, vineyards are progressing finely, the young grain of every variety gives evidence of a healthy and vigorous condition, the ground has absorbed sufficient moisture to carry all things along until the April showers come to give them the finishing touches, and our farmers feel jolly over the prospect. Never before were the indications for a bounteous and prosperous year better than at present in the never failing Pajaro valley.

SANTA CRUZ.

EDITORS PRESS:—As I have not said anything about our glorious Santa Cruz for a good while, I don't see how I can refrain any longer, and I hope you will forgive me just for once, if I tell you now how we have fared through the winter. Now I don't want to make any damaging comparisons between Santa Cruz and other parts of the State at all, but just to tell you how nicely we get along through the seasons, without any worry about not having rain enough, or too much rain, or freezing to kill the young grain or fruit. These things do not happen to us; but we have had more cold weather than ever before, and yet on Washington's birthday our wheat and barley looks well, our pastures are green, our gardens are keeping up a good stock of flowers, some of our farmers have sent new potatoes to market, the fruit trees of all varieties are full of healthy fruit buds that will surely bloom out and make fruit, for they always have done so, never having been killed with frost yet, and so we have no fear of drouth or freezing. Do you ask if we have had grass, green pasture all winter, in passing through an open field to-day (I mean one that is exposed to all the weather without any shelter), a field that is not pastured, but mowed for hay every year, I pulled up wild oats and other wild grass that measured 15 to 25 inches in length, and it was green and growing well. With green pastures all winter, good crops of grain, hay and fruit in the summer, and sunshine for months, without uncomfortable heat or drouth, plenty of wood, water, and the best of timber for lumber, and a pure and healthy atmosphere, who would not like to live in Santa Cruz. We can't afford to enjoy all this, and not let "suffering" humanity know that there is a place where people can enjoy life if they will. M. P. OWEN.

Santa Cruz, Feb. 22.

SAN MATEO.

PESCADERO FARMS.—Cor. Redwood *Times;* Farmers are getting along finely with their plowing and seeding. Very little flax will be seeded this season and less grain than usual. A large portion of each of the following-named ranches are being pastured by their owners, either for dairy or stock raising, namely: That part of the Tom Moore ranch east of the stage road now owned by Mr. R. H. Brown. The Orrin Brown ranch now owned by Mr. Bradley. A large part of Alex. Moore's ranch. About half of the widow Green ranch. Nearly all of the John Green ranch, now owned by James Reed. Most of T. V. Hollinshead's ranch, owned by the Thompsons. The best part of M. H. Pinkham's and nearly the whole of L. Chandler Hill's ranch on the San Gregorio. Mr. J. Quentin's large ranch is being pastured. The owners of ranches in this part of the county are waking up to the fact that this is properly a cattle raising and dairying section, and very sensibly are acting accordingly. A. P. Thompson has on hand a lot of Russian oats for seed, which he lets farmers have who wish it, they to give him one-fourth of the crop raised therefrom. John Cherry has imported a quantity of Russian white oats for seed, which he will sow on the Coburn ranch, giving one-sixteenth for rent. Several other farmers are experimenting with new kinds of wheat, more especially with Odessa and white Australian. E. Shaw has sown a large tract of both. It is looking well and he will try besides Italian and English rye grass, orchard grass and German clover. R. H. Brown has a very nice patch of alfalfa on the ranch which he lately bought from T. M. Moore. He is proving that alfalfa will grow well in this section when it gets a fair chance.

SONOMA.

RAIN.—Santa Rosa *Republican:* Judging from the records of seven years, the chances are at least 6 to 1 in favor of plenty more rain. With such a large probability in its favor, we think there is nothing discouraging in the outlook. Enough rain has fallen to ensure a moderate crop. Four or five inches more, through March and April, will be plenty.

ACTIVITY.—St. Helena *Star*, Feb. 24: We are in the midst of another copious rain, and any doubts as to a sufficiency of that article must be now dispelled. Plowing has already made good progress for vineyard work, in some cases being done the second time, and in one case at least that we know of the vines have been planted. The boom in vineyards knows no cessation and bids fair to keep on until all the valley and foothills are covered.

YOLO.

EDITORS PRESS:—The readers of your excellent paper need not flatter themselves that old Stoaks has passed away, but, on the contrary, never felt better. It has been several months since I've written a letter to the PRESS. Often in reading the correspondence in your valuable paper, I resolved to clear the fence with one bound and land among your contributors. I will add a few words to assure you that it is not for the lack of interest I write so seldom. I find, contrary to my ideas 15 or 20 years ago, that it takes fully as much time to keep the domestic machine in running order as it did when I was a little shaver. I shall tell you of a short journey I recently took through Solano and Yolo counties. The prospects for a fine crop of cereals was never better; and the fruit is equally as promising, though the fruit trees are at least two weeks later in blooming than last season. Should the weather be favorable from this on there will be a fine crop of fruit. The trees and vines are all set, the late rains have settled the dirt well around the roots, and we may expect to see great changes in this section within a few years. There should be a box factory or an agency established in this vicinity, and necessity will compel us to have a cannery established where we can furnish fruit of a better quality and at more reasonable figures. But I am digressing; I started to tell you what I saw. I never saw nor heard so much grumbling, with as little faith, in all my born days. There was too much or too little wind; it was too warm or too cold, too dry or too wet. There was scarcely a man but had the blues; it had become an epidemic. Why, dear Editor, you would think every man had the dyspepsia, even though many took daily a fine tonic, made from old Kentucky corn. But what a change has taken place since the late warm rains. See Mr. Jones as he jumps from his buggy, his face beaming with joy; while Mr. Smith has so far recovered he no longer needs his daily tonic. It is really a pleasing sight to see those same farmers returning from town, with a neat package in their hand or under their arm. I think I hear some one say: "Ah, that's their 'backer." No, no, dear Editor, that's a new dress for their wife. These warm rains have worked miracles; even the merchant smiles once more, the blacksmith's anvil rings from early dawn till the dark shades of night draw on. All branches of trade have revived. The little lambs skip with joy over the green hills and even Mrs. Parting's hens begin to lay. Should we have a few more warm showers we may expect the bark to peel all the year round. JIM STOAKS.

Winters, Feb. 25, 1882.

YUBA.

PURE WATER ONCE MORE.—Marysville *Appeal:* George S. Baker, the veteran fisherman, caught a trout in the Feather river yesterday morning, about a hundred yards above the Fifth street bridge. The fish was about 13 inches long and weighed about 12 ounces. It was of the kind called mountain trout, the true *salmo iridia* of the Pacific Coast, as its pink sides showed. Mr. Baker says that he has been fishing in the Feather river for the last seven years but had never caught a trout in that stream before. His fishing has been confined to that portion of the river near the mouth of the Yuba, and his catch has hitherto been limited to suckers, sturgeon and pike. There have always been trout in the headwaters of the Feather and the Yuba, but hydraulic mining drove the trout from the lower portions of those streams. In the early days trout and salmon abounded in all portions of the Yuba and Feather. The significance of the capture of a trout in the Feather near this city is that the water has become almost clear, in consequence of the stoppage of work in the principal hydraulic mines on that river. Last spring the water of that stream was red with mining debris; now it is almost colorless, and the bottom can be seen at a considerable depth. Such fish as pike and suckers are not particular as to the quality of the water they inhabit, but the trout is a stickler for pure water, and is as strongly opposed to hydraulic mining as any farmer can be. The return of trout to the lower portion of the Feather is proof of the comparative purity of that stream. It is also strong evidence of the power of the rivers to purge themselves of mining debris by what may be called "the first intention of nature," as surgeons speak of the healing of a wound. Below the confluence of the Yuba the Feather is still a turbid stream. The waters of the Yuba continue to be charged with the debris from the hydraulic mines. The contrast of color at the meeting of the waters is very strongly marked just now.

ARIZONA.

SHEEP DISTRICTS.—*Arizonian:* The mutton from Arizona grasses is noted for its fine flavor and tenderness. The wool is of a prime quality, commanding the highest price paid for the Pacific coast product. A superior breed has been introduced within the past three years, and the yield has correspondingly increased. The high rates of freight have been the great drawbacks to successful sheep-raising, but the railroads have done away with all this, and the sheep industry of Arizona is one of the most lucrative branches of business in the Territory. All over northern Arizona the short, sweet grasses that grow on the mesas and mountain sides make an excellent feed for the animal, and in many of the valleys the alfileria, or wild clover, has been introduced by sheep driven from California, and is attaining a strong and thrifty growth. Sheep are sheared twice a year, the average yield per head being about six pounds. The grazing grounds of Yavapai county are among the richest in the Territory. The snowfall of winter and the rains of summer cover the whole region with a heavy growth of fine, nutritious grasses, which keep stock in prime condition. The whole of the great Colorado plateau, in Yavapai and Apache counties, affords one of the very best stock ranges to be found in the western country. The great table lands and spurs of the Mogollon ranges are at all times covered with a heavy growth of gramma and other grasses, while the climate is especially salubrious, being removed from the oppressive heats of summer and the heavy snow storms of winter.

The El Sobrante Decision.

The actual settlers on the Sobrante rancho, in Contra Costa county, have at last secured a final decision in their favor from the Secretary of the Interior, and thus the greedy graspers for the land are balked. It is a decision which will meet the approval of the public, and will remove the barriers to development which have long afflicted a productive region. U. S. Surveyor-General Wagner has prepared a map of the ceded section, embracing about 20,000 acres, the lines of which were designed from the description as given in the dispatch from Washington. The El Sobrante claimants, of which Carpentier was the principal, sought a title to about 80,000 acres of land. The greater portion of it has been settled upon and improved, and the region now gives every promise of becoming one of the most successful producing regions in the State. The dwellers upon the 20,000 acres ceded to the claimants are mostly all secured by title from the successful parties in the case, and are secure; but there are a few, who, relying upon the insufficiency of the title of Carpentier and his associates, will be looked upon as squatters. There are many other settlers, whose property lies outside the boundary of the 20,000-acre grant, who also hold Sobrante titles, and who will doubtless suffer some annoyance by reason of the decision. The case has been in litigation for 20 years, notwithstanding that the issues could have been decided certainly within a year. The decision of the Secretary of the Interior is final, but there may be some litigation yet as to the final confirmation of the survey. There are a great many settlers, whose property lies outside the Carpentier grant as now fixed, who, rather than subject themselves to the annoyance of litigation, paid to Carpentier the sum demanded for property to which, it has been decided, he had no shadow of title.

H. H. H.—Our readers will find in our advertising columns this week a new announcement of the well-known panacea for equine woes, the "H. H. H." horse liniment. It will be seen that great usefulness is claimed for this medicine, and what we have heard of it from our readers would lead us to believe that its claims are well founded. We have heard many leading farmers remark that they would not be without it in their stables. It is a great alleviator of pain and curative.

News in Brief.

A DELEGATION of Zuni Indians from New Mexico has gone to Washington.

ONE hundred and fifty persons are reported to have been killed by an explosion in a coal mine at Leoben, Styria.

THE House Committee on Invalid Pensions on Friday received a petition asking that the widow of ex-President Polk be put on the pension rolls.

LIEUT. DANENHOWER has been forbidden to start for St. Petersburg until the weather gets warmer. The remainder of the survivors of the *Jeannette* will start without him.

SENATOR MILLER introduced a bill on Friday appropriating $175,000 for construction of steam vessels for the revenue marine, adapted for service in the waters of the North Pacific.

THE English iron masters of Middlesborough have adopted the resolution of the Scotch iron masters at Glasgow, to prolong the six months' agreement restricting the manufacture of iron.

THE Stanislaus *Wheat Grower* says that most of the telegraph poles between Oakdale and Stockton have been honeycombed by woodpeckers.

A DISPATCH from Constantinople says: The mobilization of 150,000 troops is projected, in view of the probable complications in Bulgaria, which make necessary the occupation of the Balkans.

A PARTY of 150 English tourists, en route to the National Park, Montana, will reach the end of the Northern Pacific track early in the summer. They have contracted to pay $30,000 for transportation between that point and the park.

A MEMBER of the Horticultural Commission states that the orchards of Alameda county are more extensively infested with destructive insects than the orchards in any other county in the State. This statement rouses considerable opposition.

THE work on the Atlantic & Pacific railroad eastward from Mohave is going forward as rapidly as circumstances will admit. It is reported at railroad headquarters, that the rails are all laid for a distance of 4,200 ft. The construction gang is eight miles out, grading and preparing the roadbed, and runners and surveyors are ahead of the graders.

THE tunnel to tap Eagle lake is now in 200 ft., and the present force is pushing it at the rate of about 35 ft. per week. The entire distance to be pierced is about a mile and a half, and the work will probably be completed by next fall, when the now barren wastes of sagebrush land of Honey Lake valley will be covered with water and made to produce in abundance.

A New Settlement.

As an instance of the steady and prosperous growth of Los Angeles county, we may instance the development of the Sierra Madre tract, that Mr. N. C. Carter has subdivided and placed on the market. This tract is a part of the Santa Anita property, formerly the property of E. J. Baldwin, and adjoins that famous property on the north. The water has been carried in pipes to the tract, passing through one tunnel of over 100 ft. and another of 50 ft., through solid rock.

The following parties have purchased portions of the tract, and active work is going on as rapidly as teams can be obtained to do the business: W. A. Spalding, C. E. Cook, C. W. Clement, N. H. Hosmer, Mr. Trussel, A. Gregory, A. J. Freeman, Geo. P. McLain, C. Brewster, John E. Richardson, Wm. Burlingame, J. W. Goodwin, Mrs. C. B. Jones, Miss Fannie H. Hawks, Ami Hawks, W. S. Andrews, Mrs. Smith, of Cambridge, Mass., E. T. Pierce, Mr. White, W. W. Scamans, Mr. Davis, of Concord, Mass., Dr. E. H. Packer, Lowell, Mass., and C. S. Hastings, of San Francisco.

A hotel of 11 rooms is being built by Mr. John E. Richardson. A school has been opened by Prof. Pierce, formerly Superintendent of the High School at Belleville, N. J. Mr. Reed of the Sierra Madre Villa, has purchased half of the Bailey tract, adjoining, and will build a fine residence. A hundred thousand grape vines are being planted, and a large number of fruit and ornamental trees. Plowing and planting are going forward actively, and the settlement is moving forward without let or hindrance.

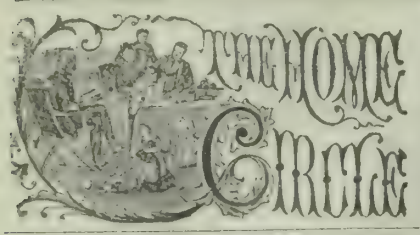
It should be borne in mind that a year ago this tract was unoccupied, except by coyotes and jack-rabbits, and now it is a busy settlement with a schoolhouse and a partly completed hotel. The situation is elevated and beautiful, and the outlook extensive and delightful. Such is one of the charming new settlements at the base of our grand Sierra Madres. Many more will follow.—*Los Angeles Commercial, Feb. 22.*

Volunteer Testimonials of Those Who Have Used Booth's Exterminator.

PORT HARFORD, June 7, 1881.

MR. A. R. BOOTH, San Luis Obispo—*Dear Sir:* The Squirrel Poison sent to me I have received. I have tried three pounds with perfect success, and think it the best preparation ever discovered for killing squirrels. It should, by all means, be used by everybody that is troubled with rats or squirrels. Following is the number of squirrels found dead after the use of each one-pound can: 1st, 27; 2d, 40; 3d, 24. Total, 91. Respectfully yours,

F. G. HARFORD.



What the Years Bring.

Two sunny-haired and clear-voiced children stood
Among the flowers all careless; sunshine played
About their golden heads; and in the wood
The birds rejoiced, and pleasant music made.
Ah! Life's fresh morning is so gay and sweet,
They cared not for the flowers beneath their feet.

A youth and maiden in the summer noon
Wandered, and looked into each other's eyes,
And thought that love was such a priceless boon,
That having it, no little cloud could rise
Upon their sky—so radiant, when we love,
Grows earth around us, and the sky above.

Two happy lives close welded into one;
Bright children playing 'round them, and the light
Of love and home, like to the blessed sun
Shining about them, while the calm years' flight
Brings only happiness, for home and love
Are dear as heaven and the saints above.

One widowed heart, whose life-pulse beats alone;
Children all fatherless, and hope all fled.
What matter that she makes such bitter moan,
Or shrouds in fruitless woe her golden head?
The world goes by all careless of her woe;
Cold world, which ever treats our sorrow so!

A grave, where tender maidens come to weep,
Bringing fresh garlands, when the old are dead.
What matters it? Their love breaks not the sleep
Of the quiet ears which hear no more their tread
Such are our little lives; but heaven is ours,
When faded are our hopes, our loves and flowers.

Sam Sperry's Pension.

For more than two years it was the joke of Bloomington Center—that bright hope, that idle dream, that fond delusive fancy, known as "Sam Sperry's pension."

The wits who congregated in the bar-room and grocery of the Bloomington Center post-office sometimes had only a sad consciousness of futility in their best efforts; the column of facetiæ in the local newspaper frequently palled on the senses; but Sam Sperry's lank and stooping figure as he descended faithfully, twice every week, from his lone home on the distant mountain, to "learn the news from Washington," bore with it an aroma of never failing interest and diversion.

"Any 'ficial dokkerments arrived for me?" Sam was accustomed to inquire, on entering the postoffice, with an air of ill-concealed consequence; and on being answered in the negative, the look of sudden surprise and incredulity which overspread his features was always as fresh and real as it had been during the first six months he had undergone the blow. His recovery was as complete and instantaneous, when seated on the counter with the "boys," he derided the very existence of his proud nation's capital in terms of the most reckless sarcasm, or, in softer mood, induced by certain grateful potations, palliated the weakness of official judges with a forbearance which his listeners found even more irresistibly entertaining.

"They think they're comin' it over me, down there to Washington," Sam observed on one occasion, rolling his eyes upon his near neighbor on the counter with a look which was dark without menace, and at the same time forcibly introducing the sharp point of his elbow to that gentleman's ribs—"they think they're comin' it over me, down there to Washington. And all the time they're hangin' off about my pension, what's accumulatin'?—what's accumulatin'?" Here Sam's companion was actually obliged to move an inch or two away in order to escape the too severe emphasis of that emaciated elbow. "Back pay!" chuckled Sam; "that's what's accumulatin'—back pay. Let 'em hold off ten or a dozen years longer, and I'll be swimmin' in back pay—I'll be fairly wallerin' in it."

With which the deeply confidential aspect of Sam's face changed to a triumphant simper, and, turning to nudge another companion (as he supposed) on his right, he inadvertently thrust his elbow through the wrappings of a large parcel of sugar, the contents of which were scattered over the grocery floor.

Sam's expression of dismay was pitiful.

"Have it charged to your back pay, Sam," cried an uproarious though cheerful voice.

Sam took up the cue, and ever after that his descent from the West Mountain, which had before been significant of a small invoice of skunks' fur, blueberries, and the like, at the Bloomington grocery, missed the hampering weight of those hardly acquired products, and Sam's business transactions at the counter—the understanding being good between the grocer and those jolly Bloomington boys—were rounded by a regally careless, "Charge it to pension, Ned—reg'lar pension or back pay, I don't care which."

Rarely, very rarely, Sam really did find a document waiting for him at the postoffice, marked with the mysterious seal of the Department of the Interior, and opened it with fingers of trembling expectation, only to find a printed sheet of painfully-worded statistics, to the effect that "besides the two hundred and ninety thousand filed claims, others were constantly being entered, but that in due time each would receive careful consideration." His first heat of desperate indignation yielded later to tears of unaffected sentiment, as he murmured: "Pension! I guess so, boys!—the grass'll be growing over my grave before I see any pension," and later still to smiles and hope again.

The gunshot wound in his right hand upon which Sam had based his claim on the national bounty, was of small account compared with the harm which he had suffered, both in body and soul, from the soldiers' camp life, the Southern marshes—above all, the Southern prisons.

"I don't know what Sam might 'a been, or what he might not 'a been," said Judge Holcomb, a prosperous citizen of Bloomington, who had been incarcerated with Sam at Andersonville. "'Pon my honor, boys, he began uncommon bright, though he wa'nt never what ye'd call petrick'ler tough or long-winded. But I can tell ye one thing, Sam Sperry wa'n't never the same man after he come out o' that prison."

Even after this asservation, I do not know that any of the frequenters of the Bloomington bazar remarked that the boyish head on Sam's bent shoulders, with its rings of close-curling light hair, was of Byronic cast, or that his eyes, when not filmy from the effects of ague or rum, were of such a perfect and heavenly blue as is seldom seen even in the undimmed orbs of children. Sam was their Punch, their by-word, their theatre comique; they would have paid twice the price of his lordly, though prudent, negotiations at the counter rather than miss the zest afforded by his semi-weekly appearance. With a touch of real pity, too, perhaps, for their old comrade, they cajoled with him in his forlorn hope, encouraged in him at all times the freest expression of his sentiments, flattered him, and regaled him. And often, alas! the feet which had come shuffling down the mountain awkwardly enough and loosely enough, retraced their steps in a still more desultory and uncertain manner, and chance passers-by have told how Sam, pausing at length by some wayside fence, frequently nudged the post with his elbow, as though having just committed to it some gravely confidential or facetious remark.

There was one person whom Sam's weaknesses and derelictions failed to inspire with appreciative mirth. In the neighborhood of Sam's house on the mountain there were two other homes. One was possessed by Isaac Travers with his beligerent wife and numerous small children; in the other, Mary Ellsworth dwelt alone with her mother.

Years ago, Sam and Mary had gone down, hand in hand, to the school kept in the little hamlet at the foot of the mountain. Mary still keeps the green-covered "speller" in which she and Sam studied their lessons together. And they were at the head of the class always, the mountain boy and girl—always at the head of the class, and always first and most imperious in play; Mary, small, brown-eyed, sharp-witted, and Sam, handsome and tall, with his cherubic curls and saucy, red lips.

Then Sam's parents died, and he went over to help John Ellsworth in his mill, and the work prospered under his strong blithe hand. And as the days passed by, Sam and Mary shrank coyly away from the affectionate intimacy of their childhood, and ended by falling as deeply in love with each other as though they had now for the first time exchanged glances across the rapturous bounds of manhood and maidenhood. Their love, having such tender root in the past, sent out bright branches of hope for the future, and was as strong as life with them both. Mary would have borne anything for Sam; and Sam, who was of a quick and impetuous nature, found his equilibrium in the sweet firmness of Mary's character, and adored her for the loving sarcasm with which she rebuked his pet faults—such bright and captivating faults as Sam's were then.

Sam and Mary were engaged when the war broke out; and the two men of John Ellsworth's household went away, and the two women waited in their solitary home on the mountain, cheered by letters at first; afterward their only hope lay in some chance returning figure along the road that came winding up from the villages below. John Ellsworth never came back along that dear familiar road; and when Sam returned one day, weak, ague-shaken, demented, but still fondly, foolishly faithful, Mary, called of God to endure this greater sorrow than any death could bring, spent the solitude of one black night in terrible rebellion, and, when the morning dawned, laid her broken heart at the foot of the cross and rose with a calm "I will—for evermore."

Sam went back wonderingly to occupy the long-deserted home of his childhood; but it was Mary's hand that brought him bread and meat, that made his bed, and swept his floor, and furnished his poor home with every comfort.

Sam knew that it was all changed somehow. The tongue, once so winningly sarcastic, was now ever too thoughtfully kind, the once laughing eyes too deeply compassionate. He sorrowed over it with the vague sorrow of a child. But he trusted Mary. She knew; she would set it all right in time. The light, the hope, the promise of his youth, so helplessly, so mysteriously lost—they were all kept waiting for him somewhere in Mary's great dark eyes.

But when Sam came tottering up the hill on his return home, he had brought with him a parcel the contents of which he had not revealed to any eye. It contained his wedding clothes, new and sleek, of the finest black broadcloth. In the pathetic loneliness of his home he acquired a habit of fondling these, of gloating over them, even of trying them on before the glass; and then, as he stood in his best mood, with his bonny hair curled, one never saw so sweet and weak a face. Sam longed, yet ever hesitated, to appear before Mary in these splendid habiliments. That strange trouble on his mind deterred him. He was never so shy, so simple, so conscious of his lost estate, as when in "Miss Mary's" presence—never withal so strangely happy and content. One evening as he sat before her, the wedding garments he had left at home filled all his thought.

"I—I never cared for any girl but you, Mary," he exclaimed abruptly, with a spark of the old fire in his eyes. "I—I never could."

"No, Sam," Mary answered, gently, "I don't believe you ever could."

"You—promised to marry me once," said Sam, that brief fire changing, for another instant, to a look of solemn wonder and reproach.

A deathly palor crept over Mary's face. Then she came close to Sam, and laid her hand on his, and looked into his eyes with all the beautiful tenderness and pity of her deeply-tried soul.

"I shall always be true to you, Sam," she said. "There are some things we can't understand. We must be patient. But that—what we hoped for once—now—in this world—that, dear Sam, must never be!"

"Yes, Mary," Sam answered, sweetly obedient, thrilled through and through by the touch of her dear hand, "that must never be." And he repeated the words simply all the way home, "that must never be." It was all right, somehow. "Mary knew." But he folded the wedding clothes and put them away that night as one who should never need to take them out again.

After this, the ruined life clung still closer to that strong and patient one, and the little services which Sam was accustomed to perform for Mary, when not suffering with the ague, or following after the fond hallucination of his "pension"—the fetching of wood and drawing of water—these lost to his poor adoring mind every base and menial quality, and were like the offering of a devotee laid tremblingly at the feet of an angel.

And the time passed all too swiftly for the work of Mary's hands. Besides her ministrations to Sam and her mother, her generous thought for the wretched Travers family, the name of Mary Ellsworth, for the gracious help and sympathy which is implied, was known and loved in all the villages below, and in times of sickness, or sorrow, or added care, the journey up the mountain side was cheap which could procure a day of those coveted services.

It was the affliction of unexpected company which had overtaken Judge Holcomb's wifeless home and refractory servants. Mary, with rare firmness, established there in a day her universal rule of peace. Among the other guests was a young actress from New York, the Judge's niece, blonde, handsome, magnificent. At evening, as Mary stood, before her return home, waiting an instant in the hall, so quiet and demure, with her dark hair parted in an old, old fashion, and her sad, lustrous eyes, and her face breathing that ineffable refinement which the calm endurance of some hidden and exalted sorrow alone can give, the dashing young actress advanced upon her suddenly, and folded her with an impetuous gesture in her strong white arms. "I love you!" she whispered. "I love you desperately!"

The Judge's own wooing was less impassioned, when, some weeks afterward, he left his smart horse and buggy at Mary's gate, and entered the house.

"I formed a very fav'rable opinion of you Mary," said this grandiose personage, "a good many years ago, and I've never had any cause to alter that opinion. In fact I come in here to say that I should like to have you come down to my house in the capacity of a wife."

There was a grace, a perfect self-reliance, in Mary's old-fashioned manner, which relieved it from any imputation of stiffness, as she answered, in much the same words that she had used in addressing Sam some time before, but with such a different tone in the ring of her clear voice: "I thank you, but that can never be." And the Judge drove away, amazed and disappointed, but most of all sorry for Mary.

Sam was the next caller. He had seen the smart buggy at Mary's gate. He entered, timid and hesitating, and sat for some time shifting uneasily about in his chair. At length he said: "I—I never cared for any girl but you, Mary. I—I never could," he repeated, earnestly.

And Mary answered, as she had done before: "No, Sam, I don't believe you ever could."

Sam drew his sleeve quickly across his eyes.

"You—you ain't goin' to leave the mountain, are you, Mary?" he gasped. "You ain't goin' to leave the mountain, Mary?"

"Never!" answered Mary, and as before, her tone quieted and consoled him.

After what seemed a long time, though, the tears were still standing in Sam's blue eyes:

"I forgot, Mary," he said, meekly. "I came to say—you're young yet, and handsome, Mary,—and if you had a better chance—I don't know what I—what we should do without you—but if you had a better chance—you—you mustn't—you know—Mary—"

There he paused. Mary did not smile, but her heart yearned over Sam as a mother's might over a child who has tried in vain to be good, and brave, and unselfish. And Sam went away comforted.

It was the third bleak winter since Sam's return to the mountain, and he meanwhile growing weaker and sillier with each successive season, but ever faithful in his inquiries after his pension at the Bloomington postoffice. The Bloomington boys thought it a rare joke to impress upon his mind that the only reason why Miss Mary deferred giving him her hand in marriage was his continued inability to obtain his pension.

"Just wait till you get your pension, Sam," said Ned Hemingway, the store-keeper, delicately hinting on this point, "and then you'll see."

And Sam doubted utterly at first—away down in his heart doubted always; but as he lent himself more and more to the erratic fancy, it fired and consumed his brain.

One night, from the alternate chills and fevers which shook his frame, Sam fell asleep. Instead of his lone, dark room, the road winding from the mountain to the village rose before his eyes. That road, usually so tortuous and long, was straight, and bathed in light. He traversed it. At the end a palace gate, and at the gate a white-winged angel stood, his pension in her shining hand. Sam gazed. Above those peaceful wings was Mary's face. She smiled as she had smiled upon him long ago. He awoke, and slept no more that night.

With the morning he put on his wedding clothes. No doubt or hesitation possessed him now. There was a terrible exultation in his eyes. This time he did not stop, as was his wont, at Miss Mary's house. The road down the mountain side was tortuous and long. There was no palace gate at the end; no pension. Those who watched Sam's face in this last instance of his ever-recurring disappointment, say that a look came over it which had never been there before. He rested on the counter, and drowsed, and almost fainted, but he would not drink. This provoked unbounded astonishment. Sam's dying flesh craved the cup with an awful thirst, but Mary's eyes were stronger, and Mary's eyes seemed to be upon him, and he would not drink.

"It would choke me, boys," he tried to say, turning weakly away.

He manifested a desire to make his will. It was a rare occasion at the Bloomington grocery.

"Its all to go to Mary," he exclaimed, excitedly, "pension, back pay and all." The last flame of the fever was flickering and wasting in his eyes. He rested and dozed again. At noon he started for home; at four o'clock he had traversed only half of the lonely winter road; at the foot of the mountain—it was sunset—he staggered and fell down. We shrink from the records of fates so sad. We need not fear. One greater than we, and more compassionate by far, comforts the death of His lambs when they fall in the desolate places. The pain in Sam's body ceased. Across his mind flitted a brief trouble.

"I wish Mary could know," he said, "that I wouldn't touch it—for her sake." And later and more solemnly: "I wish Mary could know—that I seem now—to understand. I seem—now—to see—"

An old story tells of the prodigal who wandered, and who came back to his father's house; of the purpose, running through all the weakness and sin, of the wonder and suffering of our human lives, to make us hungry and to bring us home. So over Sam's wasting face there crept first the infinite, unbearable hunger of the soul, and then the quiet look of one whom God leads home; and the blue eyes, piercing now beyond the light of sun or moon, met unshrinkingly the shadows of the deepening night, and unshrinkingly the clear gaze of the solemn stars.

And Mary knew. When they brought Sam home to her in his wedding garments, she looked upon his face, and she knew that the bridegroom had indeed come back, clothed and joyful, to the bride; the lost spirit to the strength and beauty of its first estate. And she kissed the dead lips in that last act of perfect love and consecration, and knelt and thanked God.

A few days after Sam's death, Ned Hemingway entered Mary's house, either from curiosity or worthier motives, with a stammered apology, and the words: "Of course it ain't o' no account, but I thought ye might like to keep it," handed Mary the will in which Sam had devised to her his pension. As he did this, the mirthful grocer cast down his eyes and blushed to the roots of his hair. Mary took the little parchment, read it quietly, and just the shadow of a smile played about the beautiful tenderness of her lips. Then she turned to the grocer, and unconsciously transfixed him with her clear, thoughtful, half-inattentive gaze.

"I think Sam owed you something," she said.

"Oh, no, no," stammered the grocer. "That's all right. The boys will see to that."

"I should prefer to have you give me the bill," Mary said; and still transfixed by that courteously compelling gaze, the abashed and reluctant grocer complied.

Mary keeps the will in which Sam gave her his pension, with a lock of hair that was al-

ways golden and boyish, and the green-covered spelling-book. Sometimes in the pauses of her toil, she can smile her tender smile over these; she can weep blessed tears over them.

But if any one should say that hers had been a famished heart—famished for all the joyful possibilities, the wifehood, the motherhood that might have been—the thought would pale before the tranquil glory of her eyes. There has come to the life of this lone watcher on the mountain, a fullness such as few may know. The autumn winds that speak with their low wail of death to the dwellers in the valley land below, bring to her clearer sense, sweet messages of home.—*Harper's Monthly.*

Woman as a Free Agent.

[Written for the RURAL PRESS by JEWELL.]

Some years ago in conversing with a conservative man upon the subject of woman as man's equal, he brought forward the oft-repeated remark that women do not lead in fine arts, poetry, music, science, literature, or inventions, a statement quite true literally. They do not *lead*, perhaps, but from the fact of women to-day taking prominent places in every department of art, and inventions even, is proved their capability of leading had they the opportunity. And the power of appreciating all of man's highest productions, is still further proof of her equal capacity to do. Again, is she not man's inspiration to all of his highest and best works and thoughts, proving that in her spiritual nature or growth she is his superior. Were women free agents of their highest and best abilities, be it in fine arts or motherhood, her god-like duty of creation would not so often prove a curse to herself and mankind, and the higher æsthetic nature of nations would be the result. That she is not a free agent in any way whatever is proven by her social position, which tells her what to do, what to wear, where to go, what to say, and who to go with.

In marriage she gives up her name, and is bound to her husband and lover, who has control of the home and the purse, as well as her duties and actions, and even her pleasures all center in him and for him. In motherhood, if life be spared her, she enters upon a sacred, but rigid round of duties, cares and responsibilities that no heart or hand can take away, though they may be lightened. Sleepless nights in sickness, anxieties and cares by day, entire self abnegation, and self control on the one hand, or fretful repinings and weakness on the other.

Old age, the prime of her womanhood and glory of her life, might redeem her and make her free, but for one obstacle that universally attends our women of 60 and upwards—failing health, and diseased constitution. Worn out with the many duties and burdens of her life, she is usually a wreck in mind and body, a child herself to be cared for. Fortunate she, if willing and kind hands perform their duty.

Such is the round of life to the masses, and with but few exceptions are they better. No wonder then that we boast of but few great artists, authors, poets or musicians among the mothers of the land. Few are situated so as to be relieved of their burdens, that they may study or think; and they, many of them, become the peers of our great men.

Already do we see a brighter day dawning for women, when she shall stand by the side of man, as his equal, in politics and home; when her duties *at home*, shall be recognized as equivalent to his at his trade or profession, and her opinion be *needed*, upon all questions of church and state. Woman as a free agent will prove that reform means improvement, that politics need not degrade or demoralize its workers, while intemperance is always a crime against humanity; immorality is always a vice in man or woman; and that woman herself is the stronger and purer for being free to do, and be her own self, instead of the slave to circumstances and the sovereignty of man.

Deer Ridge Farm.

FARMING IN MINIATURE.—The New York *Tribune* says: Mrs. L. Braint, in charge of the Kindergarten Department of the Children's Aid Society's Industrial School at No. 211 West Eighteenth-street, this city, has developed from Miss Emily Huntington's unique idea of the kitchen garden a most interesting and useful system of object lessons in agriculture. A *Tribune* reporter was present at a recent exhibition, and writes as follows of what he saw: "A shallow box, three ft. broad and about eight ft. long, filled with earth, stood at one side of the room. This represented a field ready for planting spring wheat. In another box green wheat was growing. One of the boys took the part of the farmer, and directed three or four others in the farm work. They plowed the ground and harrowed it with miniature implements; then sowed the wheat and harrowed it in. The box with growing wheat was abandoned to the cattle by the young farmer's direction, as it is a hopeless crop from flies, worms, thistles, daisies, and other enemies of wheat. The wheat from the 'west lot' was then threshed with flails and taken to the mill, where graham flour and white flour were ground from it. The mill was a coffee-grinder. Then the farmer's wife (one of the little girls) went through the process of bread-making, explaining every step and giving the different ingredients used and their proportions. At intervals little choruses sang songs in praise of farm life.

YOUNG FOLKS' COLUMN.

Pin Shops.

"O Dot!" screamed Daisy, rushing out of the little, dark "play closet," and upsetting her tiny dinner table in her haste to reach her sister, who had just come from school. Dot's boots were very "sloshy," but her cheeks looked like two red roses, and her eyes were very blue and bright.

"I've got such a secret, Dot! Come in here quick! We'll have a pin shop! Aunt Maria told mother to-day about the girls in Wilton havin' 'em!"

"What's pin shops?" asked Dot, taking off a fat doll's blue cotton sash, and tying on a red one.

"O, they make dolls and things and sell 'em for pins, and then sell the pins for money. You know mother's goin' to have a birthday week after next; she told Aunt Maria so to-day, and we can buy her a present! Won't it be splendid!"

"What would we buy? A blue satin tie like Aunt Maria's?"

"No, we couldn't get enough money. We'll get a white apron; her old one's most worn to pieces."

"Who'll we sell the pins to?"

"O, I guess Cousin Prue'll buy 'em, 'cause she's got a store, and we'll buy some white peeky for an apron from her!"

"But, Daisy! we ain't got nothin' to sell!"

"Why Dot, we'll make things out o' worsted 'n' cardboard. We've got dolls, too, and mother'll help us I guess. Let's take our trash out'n ask her."

"Where'll we have it?" queried Dot, clutching at a pile of Doll rags.

"In our play shed back o' the barn. Tomorrow's Saturday—no school—Oh what fun! Ben'll tell Sue Jones 'n Ned to-night, 'n they'll let the rest know."

Mrs. Mills was feather-stitching Daisy's pink gingham apron when the children burst out upon her, with laps full of odds and ends of silk ribbon, muslin and lace.

"Mother! is there anything we've got fit to have a pin shop with in our play house to-morrow?" cried Dot, out of breath.

"Here's a nice little doll that's fit to sell," said the mother, laying aside her work, and sorting the heap of rubbish. "It's worth four pins."

"Dot made that. O mother, sew some truly hair on it!" cried Daisy, snipping off a lock from her curly head with her mother's shears. Mother's eyes looked reproof; but she sewed on the hair, and planned little saleable articles with them, while they worked with all their might.

"How much will this hat be, mother? It's got a live hen's feather!"

"Three pins, I should say. And this marker will be three more. I will make you some paper dolls and little bags, and I have two or three small pictures which you may sell; so I think that with your stock of dolls and dresses and hats, you will have quite a nice pin shop."

Daisy's night-capped head popped between the curtain and window early next morning.

How they worked! They scarcely ate any breakfast, they were so eager. Their pin shop looked beautiful at nine o'clock: all their goods placed neatly on old boxes covered with newspapers, awaiting customers. Dot had a long strip of pink paper in her hand. "I'll stick the pins, and you can wait upon the people," she said to Daisy. Mother brought out a plate of crisp doughnuts which she said they might sell for six pins apiece.

Hope Rooney came first to buy.

"Got anything for one pin?" she asked in her gruff voice, taking a huge bent one from the waist of her blue homespun dress.

"O yes, here's a paper doll," said Daisy: and trade had fairly begun, for half a dozen boys and girls came rushing in to admire and buy too.

Hal Greene had two dozen brand new pins, which he soon exchanged for four of Mrs. Mills' nice doughnuts. Tim Brown bought the truly haired dolly for his sick sister, and Jennie Lee gave three very crooked pins for a pretty picture for her little brother. Business was very brisk, and Dot and Daisy were quite beside themselves, and thought nothing so splendid as a pin shop. But just then Dot heard Jim Tucker tell Rushie Sykes that he had stolen his pins from his mother's drawer, and so, when he came to buy a doughnut, Dot gave him a very severe look and said: "I shouldn't think you'd be a thief, Jim Tucker!" But Jim only said, "I don't care for you!" and made a dash at the plate of doughnuts, while his sister Kate pulled Rushie away, crying, "Come away from old Mills' pin shop! We won't be called thieves! We'll let 'em know we'll have jest as good a one as theirs!" And two or three joined them, and set up an opposition store, which, however, did no harm to Dot and Daisy, who had their mother's kind help.

The sisters did so well that day, that they sewed all the next week for the next holiday, and found when they came to count their gains that they had 12 dozen pins, big and little, crooked and straight, black and white, old and new, on their long pink paper. On the day before the birthday they asked permission to go and visit Cousin Prue a little while, and with their treasures safe in Dot's pocket, hurried up the stairs to the stuffy little shop, under the eaves, almost. Cousin Prue looked awfully at them from over her glasses, Dot thought.

"Please buy our pins, Cousin Prue!" said Daisy.

"We want to buy some white peeky for mother's birthday apron," whispered Dot, tremblingly.

Cousin Prue looked at the motley collection of pins.

"I'll give yer 10 cents fur these, 'n that's too much."

"Well," they both said, quite satisfied. Ten cents was a wonderful sum. 'Twould buy slates and books and toys; of course it would buy aprons!

"My *pique* is 20 cents a yard," said Cousin Prue grimly, before they gave up their pins.

How their hearts beat and how red their faces grew! They both winked hard to keep back the tears! And Prue looked like a great owl glaring at them.

But the spare room door was open near by, and Cousin Prue's boarder, the school mistress, had heard and seen all. She knew about the pin shops, and she loved the little girls. Out she came, purse in hand, crying, "I want some pins ever so much. I'll give you 25 cents for yours!" What grateful smiles chased away the tears as they joyfully delivered up the collection. And they went skipping away with a crisp white roll under Dot's cloak, which roll was placed on mother's plate the next morning.

THE "RURAL PRESS Science Club" may be found on another page.

GOOD HEALTH.

Dressing for Warmth.

EDITORS PRESS:—I noticed an article in your last week's issue relating to the manner in which women dress. Now, I do not entirely agree with your correspondent, as I have noticed lately that here in San Francisco working-women dress much more sensibly than formerly. Anyone who has spent a year in this city knows that we have hardly ever more than one day at a time when a woman can with any safety leave off her flannels; but it is only very recently that working-women, those who are obliged to stand behind the counter all day with the wind from an open door blowing upon them; women who are obliged to sew in a room, one moment heated to suffocation and the next extremely cold, and all women obliged to toil for their daily bread—it is only recently that they have realized that good warm underclothing is needful to preserve their health. I know a number of shop girls who now wear red woolens from head to foot, and one who wears a chamois-skin vest besides. I do not think that the time is very far off when we will see a reform in the matter of women's dressing, and we will see more money spent on good warm underclothing and less on gew-gaws and fancy jewelry.

But what attracts my attention is the cruel way little girls are dressed. I have seen them come to school on cold mornings with a little thin dress of some flimsy material, scarcely reaching their knees, thin white cotton skirts, and miserably thin stockings, barely covering their knees, and thin-soled kid shoes. Their little noses and fingers are blue with the cold, and they must stand 10 or 15 minutes over a hot register before they feel anyways comfortable, yet these children were sent out by mothers who are unable to stir a foot from their own doorway without being completely wrapped in sealskin. What mode of reasoning does a mother adopt who thus clothes her child? In a class of 10 little girls, all under eight years, but one wears flannel drawers and one woolen stockings, the remaining eight are clothed in the above-wretched style. Where is the woman who would dare expose herself outside of her own warm dressing-room with skirts above the ankle? And yet these same women expect their little girls to go with no flannels and short skirts. I think the first reform should commence with the children, and then look to the older ones.

MRS. G.

San Francisco, Feb. 22, 1882.

THE COLOR-BLIND PROBLEM.—The Pennsylvania railroad has solved the difficult problem of testing the color-blindness of over 35,000 employes, with due justice to the men and due regard to the safety of the public, by adopting an apparatus invented by Dr. William Thompson, of Philadelphia, in which the primary colors—red and green—are mounted, and the "confusion colors" strung by their side and alternated with red and green, the latter being numbered odd and the former even, an order which can be reversed. In the examination, which can be made with safety and success by any division superintendent, the man under a test is asked to select 10 colors by numbers, and a register of his selection at once determines the character of his eyesight. If he picks both odd and even numbers, or the wrong set of alternates, he is color-blind. So far under the tests made by this system 4% are reported as defective, the average of defective eyesights recorded by scientific observers. The plan has been adopted and is in full operation—a notable instance, when compared with the row over the same subject raised in Connecticut, of how much easier a railroad can legislate than a State legislature.

DOMESTIC ECONOMY.

SURPRISE PUDDING.—Ingredients: 4 ozs. best rice, 1 pint of milk, 4 eggs, 10 ozs. sugar, a little grated nutmeg, 1 lb. of apples, half lb. raspberry jam and a few drops of cochineal. How to use them: Well wash and pick the rice; throw into boiling water and boil until tender; then drain it on a sieve; boil the milk and sugar together; beat up the eggs in a basin, stir in the boiling milk; add a little nutmeg and the rice; stir well together and pour into a well-buttered pudding mold; cover with buttered paper; place the mold in a stewpan, with sufficient water to steam the pudding, and let cook one hour; peel the apples and take out the cores; place them in a stewpan with four ozs. sugar and cook to a pulp; when the pudding is cooked, turn out in a hot dish; cut off a slice about half an inch thick from the top of the pudding, lay it on a plate; then with a sharp knife cut out a hole in the center of the pudding and fill it with the raspberry jam; lay on the slice cut from the top to hide the jam, and pour the apple pulp over it; serve very hot.

WINTER SALADS.—(1.) Slice a cold boiled or baked beet root; arrange it in slices overlapping each other; pour a mixture over made with cream, a very little vinegar, pepper and salt; garnish the dish with horse-radish and hard-boiled eggs, whites and yelks separate. (2.) Slice some cold boiled carrots; arrange them in a dish with a dressing made with cream and lemon juice, or oil and vinegar, with pepper and salt; garnish the dish with hard-boiled eggs shredded, with minced parsley and capers and chopped olives. (3.) Pick the flower from one or two cold boiled cauliflowers; dispose them in a dish, and pour over them some dressing made with cream and lemon juice, or oil and vinegar, with pepper and salt to taste; garnish with minced parsley, powdered sweet herbs and capers.

MUTTON PIE.—Two pounds of the neck or loin of mutton, weighed after being boned; two kidneys, pepper and salt to taste, two teacups of gravy or water, two tablespoonfuls of minced parsley; when liked a little minced onion; puff crust. Bone mutton, and cut the meat into steaks all of the same thickness and leave but very little fat. Cut up the kidneys, and arrange these with the meat neatly in a pie dish; sprinkle over them the minced parsley and a seasoning of pepper and salt; pour in the gravy and cover with a tolerably good puff crust. Bake for one and a half hours, or rather longer, should the pie be very large, and let the oven be rather brisk. A well-made suet crust may be used instead of puff crust, and will be found exceedingly good.

GOOD ROLLS.—Mix the salt with the flour. make a deap hole in the middle of the flour; stir the warm water into the yeast and pour it into the hole. Stir with a spoon just enough to make a thin batter and sprinkle some flour over the top. Cover the pan and set it in a warm place for several hours. When it is light add half a pint more of lukewarm water, and make it with a little more flour into a dough. Knead it well for ten minutes; then divide it into small pieces and knead each piece separately. Make them into round cakes or rolls. Cover and set them to rise about an hour and a half; then bake, and when done let them remain in the oven, without the lid, for about ten minutes.

ROAST LEG OF PORK.—Make a sage-and-onion stuffing; choose a small tender leg of pork, and score the skin in stripes with a sharp knife; cut an opening in the knuckle, loosen the skin and fill with the sage-and-onion stuffing; spread the whole leg with a thin coating of fresh butter, and put it before a clear fire, but not too near; baste well while cooking, and when nearly done draw a little nearer the fire to brown; thicken the dipping with a little flour, add boiling water, season with salt and pepper, boil up at once, and serve in a gravy tureen.

LIVER CHEESE.—This is an excellent thing to have ready for an emergency when something extra is desired for breakfast. Boil a beef's liver, heart and tongue; remove all the hard and sinewy parts and chop the remainder fine; add to this half a pound of boiled pork also chopped fine; season with sweet herbs, some grated nutmeg, a bay leaf, the flavor of an onion, pepper and salt; put it in a pan and press upon it a heavy weight. In a few hours turn it out in a solid cake for the table on a Wedgwood platter, accompanied by a silver-bladed knife to slice it with.

POTATO SALAD.—Potatoes boiled in the "jacket" and peeled while warm, cut evenly into fine slices, and when cold mix with fine olive oil. After having drawn with this for a little while, add salt, pepper, chopped onion, and mix all this by shaking it up, as using a spoon would break the potatoes and make them unsightly. Add good vinegar.

INDIAN MEAL CAKE.—Take as much meal as may be required, scald it partially; then take some drippings of lard and warm water—melt the fat with it, then take the meal and mix it with milk to the proper consistency; add a little salt and a beaten egg, or the egg may be omitted; bake on the griddle, and you will have an excellent cake.

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TABLE OF CONTENTS.

EDITORIALS.—An Ice Locked Ship; Timothy Hay; Rust-Proof Wheat, 145. The Week; Shipping Dairy Products; Potatoes, 152. How Plants Grow, 153.
ILLUSTRATIONS.—The Arctic Exploring Ship "Corwin," in a nip off Cape Romanzoff, 135. Section of Tree Magnified to show cellular Growth, 153.
PATRONS OF HUSBANDRY.—Appointment of District Lecturers; The W. M at St. Helena Grange; Old and New; Grange Notes, 148.
AGRICULTURAL NOTES, from the various Counties of California, Arizona, 148-9.
QUERIES AND REPLIES.—Broom Corn; Smut or Bunt, 152.
THE STABLE.—Horse Breeding in California, 146.
THE APIARY.—Transferring in Winter, 146.
HORTICULTURE.—Concerning Figs, 146-7. Olive Culture, 147.
THE DAIRY.—Feeding Oat Straw, 147.
THE FIELD.—Cotton Growing in Kern County, 147
ARBORICULTURE—Catalpa and Black Wattle, 147
THE STOCK YARD.—Experiments in Cattle Feeding, 147.
HOME CIRCLE.—What the Years Bring (poetry); Sam Sperry's Pension, 150. Woman as a Free Agent; Farming in Miniature, 151.
YOUNG FOLKS' COLUMN.—Pin Shops, 151.
GOOD HEALTH.—Dressing for Warmth; The Color-Blind Problem, 151.
DOMESTIC ECONOMY.—Surprise Pudding; Winter Salads; Mutton Pie; Good Rolls; Roast Leg of Pork; Liver Cheese; Potato Salad; Indian Meal Cake, 151.
MISCELLANEOUS.—Renewing Old Orchards; Science Club.—No. 4; Naturalists' Directory, 154. Regulations for Horticultural Fairs; Counterfeit Butter, 157. Bluestoning Wheat, 158.
SHEEP AND WOOL.—Notes on Vermont Sheep, 154.
SERICULTURE.—Meeting of the State Horticultural Society; Women's Silk Culture Exhibition, 156.
CORRESPONDENCE.—The Standard Præparturiens, 158.
AGRICULTURAL ENGINEER.—Farm Engineering, 158.
NEWS IN BRIEF on page 149 and other pages

Business Announcements.

Agricultural Implements, Jackson & Truman, S. F.
Averill Mixed Paint, O. S. Orrick, S. F.
Harvesting Machinery, Geo. A. Davis, S. F.
Agricultural Machinery, Marcus C. Hawley, S. F.
The Pacific Mutual Life Insurance Co., S. F.
"Eureka" Windmill, F. W. Krogh & Co., S. F.
Cheap Cash Groceries, Nueman's, S. F.
Studebaker Wagons, John Caine, Stocton, Cal.
Egg Food, B. F. Wellington, S. F.
U. S. Land Warrant for sale, "Land Warrant," S. F.
The Packers' Exchange of California, S. F.
The Keiffer Pear, J. Winchester, Columbia, Cal.
Commission Merchants, Moore, Ferguson & Co., S. F.
Iron Stone Sewer Pipe, Gladding, McBean & Co., S. F.

The Week.

Another week of showers and gentle air has brought activity to the plant and comfort to all. The needed growth in the pastures is now springing forward rapidly, and the air is still full of promise of abundant moisture. A more joyous feeling is discernible everywhere.

The week has been rendered a notable one in public affairs by the formal tribute paid to the memory of President Garfield by the people of the United States, through their representatives in Congress assembled. The eulogy by ex-Senator Blaine was a calm analysis of the life and eminent services of the murdered President, supplemented by a glowing tribute to his memory, which will find echoes in the hearts of fifty millions of people, who delight to honor his name.

Shipping Dairy Products.

All talk freely of the exports of grain, fresh and dried fruits, honey and other California farm products, but there is seldom any mention of shipping butter and cheese. So far as we are aware, but little is being done to develop dairy production by the securing of an outside demand for the produce, and thus securing an import of money for the comfort of the large class of our population engaged in dairying. As it is, the butter is sent to San Francisco, and local consumers are trusted to eat it up, and the result is, that as soon as the production increases a little by the occurrence of weather favoring the growth of feed, the price drops so that the city consumer has to pay but little more per pound for his butter than for his sirloin steak, and the producer barely gets enough money to pay his expenses. This is the legitimate result of depending wholly upon local consumption for an article. It was not long ago that the experience of the fruit grower was similar to that of the butter maker at present, but the growth of the canning and drying demand and the export of fruit in a fresh state, has lifted the fruit grower out of his old troubles. Why the dairy should not endeavor to advance itself by securing outlets we cannot imagine, except that there is no union of effort on the part of the producers and no dealers enterprising or adventurous enough to test the development of new markets.

And this quiescent state of the dairy industry exists in the face of the fullest evidence that dairy products are quite exportable in their character, and are so concentrated in value that transportation adds but a small percentage to their cost at distant selling points. Every one who knows anything about dairying, knows that the great dairy regions of the States east of the Rocky Mountains draw their wealth from distant shipments, that Canada has learned to enjoy the same advantage, that the dairy enterprises of Denmark and adjacent countries gain their returns from below the tropics—in short, that the great growth of dairying the world over, during the last score of years, has been rendered possible by the chance to ship the produce to remote non-producing regions. In the face of these bright examples, the dairy regions of the Pacific coast, than which we believe the world has no better, are allowed to lie comparatively idle, because there is nothing but a limited local demand to minister to. It is difficult to calculate the extent to which our dairy production could be increased if there were only an adequate market; and if such were found, the State would be relieved from the prospective loss from planting fruit trees in wrong places and from endeavoring to grow vineyards and orchards on lands which should resound with the lowing of the kine and be clad with the beautiful green which is the garb of a prosperous dairy region.

It seems to us plain that there is a lack of enterprise in this direction. The dairy is allowed to advance by luck and chance more than any other branch of our agriculture. There is some growth, it is true, as the records of the last few years will show. The receipts of butter and cheese in this city during the last five years have been as follows:

	Butter, lbs.	Cheese, lbs
1881	12,398,600	5,905,700
1880	8,840,800	3,892,900
1879	10,438,500	4,639,400
1878	8,885,690	4,041,600
1877	11,109,800	4,321,375

This shows a gradual progression. The increase in production throughout the State has been rather greater, because new dairies are ministering to local markets, which usually drew supplies from the city. At the extreme south of the State, in Los Angeles and San Bernardino counties, there has been a notable advance to meet the Arizona demand, and this trade is just beginning. If there were proper outlets, the whole coast tier of counties, the elevated regions of the interior, and here and there in the alfalfa districts, there would be a dairy boom which would add much to the productive capacity of the State, by using in profitable dairying many lands which now yield a scanty revenue.

We have written before about the possibility of shipping dairy produce to the southeast, and as the road has just been opened to New Orleans, it is possible that something can be done in that trade this Spring, before the hot weather makes the carriage dangerous to the quality of the goods. We find in the New Orleans *Price Current*, for February 18th, the following notes and prices for dairy goods:

BUTTER—Scarce and in request. We quote: Western Creamery, Fresh and Fancy, 55c; Western Creamery, Fine, 44@ ; Western Creamery, Choice, 40 @ 41c; Western Dairy, Choice, 40c @ ; Western Dairy, Prime, 30c @ ; Western Dairy, Good, 17 @ 18c; Western Dairy, Fair, 16 @ 17c; Western Dairy, Interior, 13 @ 14c ℔ lb.

OLEOMARGARINE—Good supply, limited demand. We quote: Solid packed, 15 @ 16c; rolls, 16 @ 17c ℔ lb.

CHEESE—Good supply; fair demand for choice grades; low grades dull. We quote: Ohio Flats, 13c; Choice Illinois, part Skims, 9 @ 10c; Prime Illinois, part Skims, 8 @ 8½c; Inferior, 1 @ 2c; New York Cream, 16c; English Dairy, 17c ℔ lb.

Thus it appears that the chance lies in butter if anywhere. Butter stood at 55 cents for choicest creamery about the middle of February. The butter described is as good as can be found at the East—a strictly fancy article packed in wooden pails. It is last summer's make, and must grow scarcer henceforward until the opening of the spring production. They make butter through the winter to a limited extent, but the choicest fresh is taken by the nearer markets. Before the new spring butter can be shipped, say by next May, there would seem to be a period when a good deal of California butter could be profitably placed on that market, for as soon as the grass starts with the present warm weather, the price of butter in this market will probably recede rapidly. This is the theoretical view of the question. It remains to be tested by experience, and this should be done.

Shipping dairy produce to distant parts is, as we remarked above, a well-tested business. Constantly other regions are endeavoring to gain a share of this profitable commerce. We read in this week's advices from Australia, that, encouraged by the success which has attended the exportation of Australian meat to England, an attempt is about to be made to place Victorian butter on the English market, and open up a trade for that article. Hon. W. Clarke and the Hon. Philip Russell, some time ago offered a prize of $500 and $250 respectively for the best sample of butter for exportation. Mr. D. Wilson, of Mount Egerton, Ballarat, who obtained the Hon. P. Russell's prize of $250, and the National Agricultural Society's premium of $125 for a sample of fresh butter, is competing for Messrs. Clarke and Russell's prizes, and at the same time, through the agency of Messrs. McCaw, McIlwrick & Co., of Queen street, is about to try the experiment of a sample of his dairy produce by the steamship *Protos*, with a view of establishing a new and profitable trade between England and Victoria. Mr. Wilson has packed a consignment of about 400 pounds of butter, prepared in two different styles, which will be placed in a compartment adjoining the ice chamber of the *Protos*, in which the temperature will not exceed from 70° to 80°. He is of opinion that at this temperature it will be in better condition for immediate use on arrival in London than if it were frozen. Half the consignment is made up in 1 lb. pats and packed in bulk in small casks, and the other half in glass jars, each holding 2 lbs. and hermetically fastened with screw capsuled tops. This latter shipment is packed in cases. He is very sanguine of success, as he has succeeded in preserving his butter during the hottest summer months without any difficulties, for sending into the interior of Australia.

It would be well for the dairy interest of this State if some such disposition to experiment and investigate prevailed here. We do not need to ship to England; there are nearer countries to be shipped to. There would be failures at first, no doubt, but if those interested in dairying should combine to share the expense of experiments and of pushing forward the inquiry into how and whence our surplus dairy manufacture can be profitably exported, the ultimate results would no doubt be very satisfactory. It is evident that the dairymen of California should not allow those engaged in other special branches of agriculture to monopolize the spirit of enterprise and investigation.

Potatoes.

This winter's experience will excite the potato producers to action again, for such prices mean rich rewards if one only had the roots to sell. There will be increased planting in the old potato districts, where there has been a disposition of late to retire from the culture. Some of these old fields are well worn, and should have a longer rest from potatoes; but the market inducement will be irresistible, and in will go the potatoes as soon as the frost danger is past in the exposed regions. Perhaps some readers would like to have a review of some experiments made by Dr. Lawes, the famous English experimenter, with the idea of restoring potato land which had become "out of condition." Dr. Lawes lately wrote on this subject to the *Rural New Yorker*, and we shall condense therefrom. He started with land which had produced wheat 19 years consecutively without manure, and six years ago he treated it with various manures and planted potatoes. Part of the land received no manure; part received 14 tons of farmyard manure; and part various artificial manures.

During the first year the increase of potatoes due to this source, only amounted to 8 cwt. per acre, as the unmanured crop gave 3 tons, 17 cwt., and the crop which received 14 tons of manure, only 4 tons, 5 cwt. During the next five years the difference in the produce of the unmanured land and that which received manure, has been getting larger and larger until last season, when the crop grown upon the manured land exceeded the unmanured crop by six tons per acre; the produce of one being two tons and of the other eight tons per acre.

In a lecture which he gave at Haddington upon the connection between "the manures made upon the farm and artificial manures," Dr. Lawes pointed out how the general use of farmyard manure for the potato crop was to be explained by the close connection between the composition of farmyard manure and that of potatoes; inasmuch as one ton of manure and one ton of potatoes contain almost the same amount of potash and phosphoric acid, while the amount of nitrogen in each did not differ materially. The following was the table given by way of illustration:

	Potash. lbs.	Phos. Acid or Phos. of Lime. lbs.	Nitrogen. lbs.
1 ton of Manure	11	8	12
1 ton of Potatoes	12	8	8

It is evident that in the first year we applied as much of these ingredients as would have grown from thirteen to fourteen tons of potatoes, and yet the whole produce actually obtained was but little over four tons. During the six years they applied 84 tons of manure, and carried off 31 tons of potatoes; assuming that the soil yielded nothing, this leaves to be accounted for ingredients competent to produce about 50 tons.

It is quite certain that the small effect of the manure, when first applied, was entirely due to the insoluble state of its ingredients; for when the potash, phophates, and nitrogen were applied as soluble salts, the very first crop yielded in one case over eight tons, and in another nearly nine tons of potatoes to the acre.

The crop grown during the season of 1881 with alkaline salts containing 150 lbs. of potash, superphosphate, and a large amount of salts of ammonia, or nitrate of soda, yielded in one case 10 tons, and in the other 10 tons and 16 cwts. of potatoes to the acre. This crop, including the haulm, could not have taken up much less than 140 lbs. of potash, which leaves only 10 lbs. of the whole supply unaccounted for. We see quite clearly from these results that the farmyard manure and the artificial fertilizers furnish the same ingredients to the potatoes; but with this material difference, that the farmyard manure acts slowly, while the artificial manures produce their result at once.

In Dr. Lawes' experiments on this land, up to the present time, the artificial fertilizers have grown 16 tons more potatoes than the manure; and out of the 84 tons of manure applied, we have not accounted for more than 31 tons in the crops removed. If all further applications were stopped, this residue of manure, or condition, would be gradually converted into potatoes; and, after a considerable number of years, the land would eventually return to its original state.

The chemical ingredients which form the value of manures can be had much more cheaply in the form of farmyard manure than in that of artificial manures, but by using them in the latter form they are far more rapidly converted into produce. By the use of farmyard and slowly-soluble manures, condition is accumulated in the soil, in the form of unexhausted fertility, while by the use of artificial manures, it assumes the form of growth—there is more corn, more straw, larger crops of roots.

QUERIES AND REPLIES.

Broom Corn.

EDS. PRESS:—Will broom corn do well in Alameda county? What is the usual yield to the acre? Where can the best seed be obtained? How much seed to the acre? Does it produce ears as Indian corn? At what stage of growth should it be cut? How must it be prepared for market? Answers to these questions and any further information on the subject, will be thankfully received.—A. M. H., Oakland.

As a rule broom corn succeeds where maize does well. The best results are obtained on a rich alluvial soil. The sowing should be done with regularity, and care should be taken to plant all at an equal depth, else second cutting may be necessary. The number of seed to a hill may be three or four, and the distance apart three ft. This is, however, only a general rule, to which circumstances may make an exception. The nature of the soil must necessarily be taken into consideration. If planted too close on some soil the brush will be too small, and if too far apart on other soils, the brush will be too coarse. As soon as the germ sprouts, and for a month later the soil should be diligently cultivated or hoed, unless the land is free from weeds. It should be cut while still green, and while, at slight pressure, milk exudes from the seed. It is common to bend down the brush and allow it to partly dry before cutting it from the stem. For marketing the stems are left 8 or 10 inches below the brush and the material put in small bales secured by ropes, the brush all pointing one way and the butts neatly trimmed.

Broom corn is a sorghum and bears its seed on a panicle. It has, of course, no ears like Indian corn. The seed can be had of the seedsmen. Probably a pint and a half would suffice for an acre.

Smut or Bunt.

My attention having been called to this subject some years since, when I was in a position where I could investigate, I have thought that the result of my experiments would not be uninteresting to the readers of the RURAL PRESS. Smut and bunt are different fungus growths—one attacking oats, corn, barley, and sometimes wheat, but always on the outside of the head or stalk; the other can only be found on the inside of wheat grain, excluded from the air. The first is smut; the latter is bunt, a foreign word, which means to strut. Under the microscope, bunt (called by our farmers smut), has the appearance of fish eggs, and differs widely from smut, both in its mode of propagation and appearance. Bunt sown with the wheat is taken by the sap into the circulation of the young plant, and changes the color of the plant to a very dark green; and when the plant begins to make starch in the grain forms, bunt finds its best conditions and multiplies very rapidly, strutting out the hull of the grain; hence the name "bunt." It is now mature, and ready to be sown for another crop. Bunt is an annual, and will not grow in the Eastern or Southern States after the first year. It is tender, and can be destroyed by bluestone or strong salt water.—N. W. MOTHERAL, Hanford, Cal.

How Plants Grow.

As the swelling buds and shooting leaves betoken the approaching of another season of activity in our trees and plants, it will be timely to review the subject of plant growth, in order that all may be better able to trace the processes of nature, which culminate in the ripened fruit or the stalwart timber. To do this, we select paragraphs from a famous essay by Col. W. S. Clark, recently President of Amherst Agricultural College in Massachusetts, borrowing both text and engraving from this source. An understanding of the parts of the tree or plant and the functions of each lies at the bottom of all intelligent tree culture—planting, cultivating, pruning, and, in fact, all operations of the tree grower should minister to the success of the tree, and certainly, when we understand the patient, our "treatment" is most likely to produce happy results. It is because of its practical bearings that we have chosen the subject of plant growth for presentation at this time:

The young willow, under kindly influences, will increase in size and weight daily until the chilling winds of autumn breathe upon it. Then the leaves fall, growth ceases, and the plant enters upon a period of repose, similar in many respects to the hibernation of animals. This annual cessation of the vital action in plants appears to be essential to the health of most species, though a few, like the orange and lemon, do not require it. In cold climates, the absence of heat in winter, and in warm latitudes, the want of water during the periodical dry season, are the principal causes which operate upon vegetation to enforce this law of nature.

The distinction between deciduous and evergreen species is, that the former lose their foliage at the end of the growing season, while the latter retain each perfected leaf, one, two, or more years. Nevertheless, evergreens usually have their time of rest no less than deciduous plants, and those which are deciduous in one climate, may become evergreens in another. Thus the apple and plum tree have become evergreens in Madeira.

Prof. Hoffman made a series of experiments from 1863 to 1870, to determine whether this annular period of rest was really necessary for ordinary plants. He found that when the lilac and other similar species were forced under glass to grow continuously by the constant pressure of heat, light, moisture and proper soil, they ceased to bloom after the first year, and died on the second or third. Hence the importance, so well known to skillful gardeners, of giving alternations of heat and cold, moisture and drouth, to plants cultivated under glass, during their proper seasons of activity and repose. Persons ignorant of these facts, water them alike at all seasons of the year. The plants, having no opportunity to ripen their tissues, can never be in a condition to blossom (or bear fruit).

After the fall of the leaves, and the ripening of the wood and buds, the stem and branches of most trees and shrubs will be found, upon examination, to be unusually dry and free from sap, and it has been said that this was an indication of hardiness. That most of our indigenous species assume this condition during about one-half of the year is doubtless true, but the presence or absence of sap cannot be considered as conclusive evidence of tenderness or hardiness. The grapevine appears quite porous and free from sap in December, but is often winter killed. On the other hand the sugar and silver-leaved maples are usually full of sap on some days of every month in the year, and yet are perfectly hardy.

Plant Tissues

When ordinary cells are united into a more or less extended structure, they constitute what is known as cellular tissue. This may be soft and pulpy, as in the flesh of an apple, loose and tender as in the pith of an elder, firm and tough as in birch bark, or hard and brittle as in the shell of a hickory nut, or the stone of a peach.

The tissue of the inner bark, consisting of very long and narrow cells overlapping each other at the ends, is called bast; and that of the stem, in which the cells are similar, but shorter, is called woody fiber. The tubes which are formed are styled ducts or vessels, and, as they are mingled with woody fiber in the annual growth of timber, the ordinary combination of these is named fibro-vascular tissue.

When these elongated cells and ducts are straight and parallel, as in the chestnut, the wood of which they are the warp splits easily, but when they are interlaced and blended irregularly, the longitudinal grain of the wood will resemble that of elm.

Every seed and every young plant consists wholly of cellular tissue, but with the development of leaves is combined the growth of fibro-vascular tissue.

The Progress of Growth.

The first vessels to appear in the plantlet are arranged in a circle around a column of tissue, which remains loose and soft, and after the first season dries up and dies. This is called the pith, and seems essential to the life of every woody branch and stem during its infancy, although its special function is unknown. Between the vessels around the pith may be seen the rays of cellular tissue, which ultimately become hard and firm, and which unite in bonds, never broken except by some external force, the inside of the stem with the inside of the bark. These rays make up the woof, and have much to do with the distinctive peculiarities of different sorts of timber.

Immediately outside the vessels inclosing the pith grows a layer of woody fiber, upon which, in a more or less developed state, according to season, is a layer of organizable material, called cambium, which may be regarded as the seat of life of the plant. Next to the cambium, and united to the wood by the rays from the pith, is the bark, consisting of three layers.

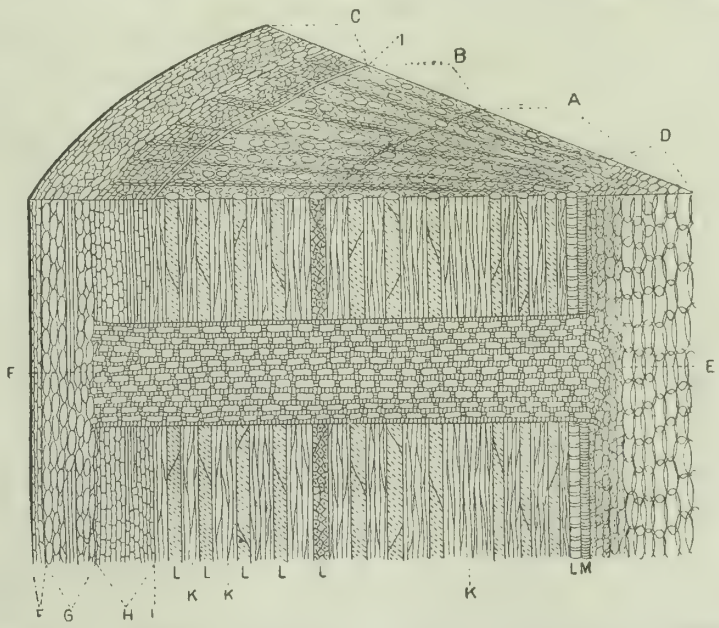
The inner, or fibrous layer, is formed by bast cells and firm cellular tissue. Surrounding the inner bark is a layer of cellular tissue, in which the rays from the pith terminate, and which is named the green layer, because it often exhibits this color in young shoots, and then performs the same function with the green tissues of the leaf. Outside of all this is the corky layer, consisting of dry, dead cellular tissue, and developed annually from the green layer. This is not usually of much thickness or consequence, but sometimes, as in the cork oak of Spain, it becomes an important article of commerce.

The growth of our trees goes on in the cambium layer, from which is produced annually a layer of wood and a layer of bark, each formed of longitudinal fibro-vascular tissue and horizontal cellular tissue.

As the trunk expands, the outer bark cracks and falls off, as in the shag-bark hickory, or distends and envelops it with a somewhat smooth covering, as in the beech and birch. In these latter cases, the annual cortical layers are quite thin, and the outer layer very gradually wastes away under the influence of winds and storms. In the cork oak, the outer layer is specially thickened, and if removed every eighth year, may be obtained in stout, elastic sheets, which would crack and fall to the ground in the process of time, if not harvested.

The Engraving

On this page represents a section, both vertical and horizontal, of a branch of a sugar maple



SECTION OF TREE MAGNIFIED TO SHOW CELLULAR GROWTH.

two years old, as it appears in December. The portion included in the lines marked A is of the first year's growth; those marked B indicate the wood of the second year; while those marked C inclose the three layers of the bark. D represents the pith of loose cellular tissue; E, the pith rays or silver grain of hard cellular tissue connecting the pith with the green or middle layer of bark, which also consists wholly of cellular tissue; F marks the outer or corky layer of the bark, which is composed of dry, dead cells, which are formed of consecutive layers from the outer portion of the living green layer; G is the green layer of cellular tissue; H shows the liber or inner bark, made up of cellular tissue, penetrated by long bast cells, arranged parallel with the axis of growth; I represents the place of the cambium or growing layer of organizable material which descends from the leaves between the liber and the sap wood during the period of growth; K is woody fiber which gives strength to the stem, and through which the crude sap rises; L indicates the vessels or ducts, with various markings, such as dots, rings and spirals, which are formed abundantly in the spring, and usually contain no fluid. They convey gases and aqueous vapors, and it may be that a large proportion of all the water ascending from the roots to the leaves passes through them as vapor. M is the layer of spiral vessels or ducts which always inclose the pith, and in the young shoot extend into the leaves and unite them to the pith during its life, which ceases with the first season.

The Growth of the Root.

The structure of the root is not unlike that of the stem, except that the pith is usually wanting, as well as the green layer of the bark, which could not be formed, nor be of any use in the dark earth where the root makes its home.

This part of the plant develops an annual layer of wood and bark, with rays of cellular tissue like the stem. The number and extent of root branches in the soil depend much upon its fertility and adaptation to the plant. As the vigor of vegetable growth depends chiefly on the action of the roots, the importance of thorough tillage is apparent.

The striking peculiarity in the structure of the root is the absorbent power of the young rootlets, which are either covered with a thick, spongy layer of cellular tissue, or furnished, as is commonly the case, with exceeding minute but innumerable hairs, which penetrate the crevices of the earth in every direction in search of food. The extreme tips of the rootlets, about one-sixth of an inch in length, are not clothed with hairs, nor capable of absorption, but serve as entering wedges for the advancing root, which lengthens only near the extremity.

The bark of the larger roots becomes thick and impervious, like that of the trunk and its older branches, and the inner portion of the wood, both above and below ground, gradually solidifies, and becomes unfitted for the free transmission of fluids. It is then called heart-wood, in distinction from the sapwood, through which fluids are transmitted freely. The farther any layer of wood or bark is removed from the living cambium, the less vitality does it retain, and consequently the less useful is it in the economy of the plant.

The Leaves.

The leaf has been said, with some propriety, to be an extension of the bark, and consists of a framework of fibro-vascular tissue forming the stalk and veins, with a double layer of loose cellular tissue covered with a distinct epidermis or skin. The vessels in the leaf stalk and the veins, which are its branches, are also in two layers, the upper connecting the leaf with the vessels surrounding the pith, which are called spiral on account of their peculiar markings, and the lower which are united to the cambium layer through the tissue of the inner bark.

The distinctive features of the leaf is the presence of stomata or breathing pores, which are usually more numerous on the under side. These stomata are furnished with openings, so constructed as to close in very dry air and open in that which is moist, but they always remain shut except under the stimulus of light. As the chief function of the rootlets is to absorb the liquid food of the plant from the earth, so it is the special work of the stomata to transpire the surplus water of the crude sap, which has been employed as a carrier of food from one extremity of the countless series of cells which build up the plant, to the other, in some cases as distance of 500 ft., through imperforate membranes, and against the force of gravitation.

In regard to the size of vegetable cells, it is difficult to obtain a correct conception, unless one is familiar with the use of a compound microscope. In every cubic inch of maple-wood there are probably not less than 100,000,000 cells of the venous tissues. The average diameter of ordinary plant-cells is less than one four-hundredth of an inch. And even the ducts or continous tubes are not usually much larger, and are often smaller than this. Prof. Gray informs us that sap must pass through 2,000 partitions in every inch of bass-wood through which it rises.

The Food of Plants.

Plants produce all the food and all the vital air which are indispensable to animals. Every growing plant may be regarded as a machine for converting mineral water into cellulose, gum, starch, sugar, and the various albumenoids by the digestion and assimilation of which animals live and grow. Every thriving plant is also exhaling continually under the stimulus of sunlight from its myriads of stomata, pure vapor of water and oxygen gas; and we have often wished that once at least in every summer, these inestimable blessings might become visible as they rise in beautiful though unseen forms and mingle with our atmosphere.

The chemical elements of plants and animals are of course identical. Three are very common in all organic tissues—carbon, oxygen and hydrogen—and three more are found wherever there is life, though usually in very small quantity—nitrogen, phosphorus and sulphur. Besides these there are a few metals which are essential to the growth of healthy and perfect plants. Thus iron in very minute proportions is found in the green coloring matter, or chlorophyl of every plant; and chlorophyl may be regarded as analogous to the gastric juice of animals, since without it plants are incapable of digesting carbonic acid, or elaborating cambium, or other organizable matter. Potassa, lime and magnesia are also necessary ingredients in the food of all plants; and though they are scarcely to be regarded as constituent parts of any vegetable tissue or product, they are absorbed by the roots, circulate in the sap, and are probably deposited in all cells, since a greater or less quantity of incombustible ash remains wherever they are burned. Their presence doubtless aids in the formation of vegetable acids and other compounds, and assists in the transference of elaborated or assimilable material, from one part of the plant to another.

It is a fact worthy of special notice that the amount and kind of mineral matters absorbed by a growing plant may be caused to vary greatly by artificial treatment. The ash of the wild beet contains more soda than potassa, but the best and sweetest sugar beets now contain at least three times as much potassa as soda. As a soda plant, therefore, it was worthless, having scarcely a trace of sugar, but the physiological changes produced by artificial treatment have made it one of the most valuable of agricultural plants, yielding a juice with from 12% to 15% of cane sugar. There is every reason to believe that the flavor of fruits and the most desirable qualities of all the vegetable products of the farm and the garden may be thus improved and controlled by the intelligent use of fertilizers. And this consideration adds practical importance to the study of vegetable physiology. We all know that whenever a hive of bees find themselves without a queen, or royal eggs, they at once proceed to develop a common egg into a royal larva, by feeding it with a peculiar food. Is it unreasonable to hope that we may learn how to modify as radically the nature and qualities of plants by a similar process?

The food of plants consists chiefly of carbonic acid gas, and is absorbed from the air by the green parts, which, like the leaves and young bark, contain chlorophyl, and are furnished with stomata. More than half the weight of ordinary dry vegetable matter is thus derived from the atmosphere. Water is the most important of the remaining constituents of plant-food, and in the liquid form is wholly absorbed by the rootlets, though aqueous vapor must, under some circumstances, be imbibed by other vegetable organs. The elements of water, hydrogen and oxygen are united with carbon in the same proportion in which they exist in this fluid in the living cells, principally of the leaf, to form the common material of vegetable tissues called cellulose, and several other substances having nearly or precisely the same composition, but different properties and uses. These are mainly starch, gum, and several varieties of sugar, which, by the vital action of plants, are transformed, one into the other, or into cellulose, according to the requirements of the vegetable economy. Only a small portion, however, of the water taken up by the roots is assimilated, much the largest being exhaled by the leaves. It performs, nevertheless, most valuable service as a common carrier throughout the various parts of the plants, both of those nitrogenous and other substances absorbed in very dilute solution from the soil, and of these organic compounds formed within the plant and essential to its growth in the several stages of its development.

The vital fluid corresponding to the blood of animals, and existing in every young and growing vegetable cell, is called protoplasm, and is a somewhat viscid substance, containing, in addition to carbon, oxygen, and hydrogen, nitrogen, sulphur and phosphorus.

Circulation of Saps.

In consideration of the subject of the circulation of saps in the entire plant, two topics are involved about which there have been much controversy and speculation, and too little observation and true philosophy. The first relates to the ascent of what is styled the crude sap, which enters at the root and rises against the force of gravitation to the topmost leaf of even the tallest tree. The other has reference to the return of the so-called elaborated sap from the leaf to the root, so as to complete a tree's circulation. Many have said there is no such thing as a general circulation of sap; but no one doubts the fact of an upward flow from the roots, and a vast exhalation of water from the foliage during the period when the vital forces of the plant are active. It is universally admitted that the cells containing chlorophyl are the organs in which the elements of the carbo-hydrates are combined, and from which, therefore, they must pass by some channel to all other parts of the plant, where either growth occurs, or amyloid substances are stored for future uses. (Whether the albuminoids are formed also in the cells of the leaf, or are the result of combinations occurring in the cambium between the soluble carbo-hydrates and the ingredients of the crude ascending sap, is not certain, and has no necessary connection with the question.)

Investigation seems to demonstrate that the cambium layer is the seat of life, and that whenever the direct communication between the root and the foliage is cut off in this layer during one entire season of growth, the whole plant perishes. It has also been determined by experiment that if several rings of bark be removed from a growing shoot in such a manner that on one of the isolated sections of bark there be no leaf, while leaves remain on others

above and below this, then the leafless section will fail to make any growth in any part. All other sections, if furnished with one or more healthy leaves, will increase in thickness by the formation of new leaves, of wood and bark. This seems to prove that the material for growth is elaborated by the leaves, and is transmitted only through the cambium and has no power of penetrating the tissues of the wood.

The peculiar vital and organic power of the cambium is remarkably illustrated in the structure and growth of grafted trees. Every person is aware that pear trees are grown upon quince roots, and that they often bear finer fruit than when cultivated as standards. This is doubtless owing to the fact that quince roots, being diminutive, furnish less water to the leaves, which thus elaborate a richer sap, and produce more perfectly developed wood and fruit.

The apricot may be grafted on the plum, and the peach on the apricot, and the almond on the peach, and thus we may produce a tree with plum roots and almond leaves. The wood, however, of the stem, will consist of four distinct varieties, though formed from one continuous cambium layer. Below the almond wood and bark we shall have perfect peach wood and bark, then perfect apricot wood and bark, and at the bottom perfect plum wood and bark. In this curious instance we see the intimate correspondence between the bark and the leaf, for if we should remove the almond branches we might cause the several sorts of wood to develop buds and leafy twigs, each of its own kind. Each section of the compound stem has its seat of life in the cambium, and the cambium of each reproduces cells of its own species out of a common nutrient fluid. Thus there is seen to be a flow of sap upward in the wood and a flow of organizable material, essential to the life of the plant, proceeding from the leaf to the root, through the bark and cambium layer. From this perfected sap the growth of the season is formed, and provision for the beginning of the next season's growth is also stored up, commonly in the root.

As the fact of a rootward flow of elaborated sap is very generally denied at the present time, it may be well to quote a single line from the edition published in 1870 of the admirable textbook on botany, by the late Prof. Henfrey, of London, which has been carefully revised by Dr. Masters. In reference to the subject he says: "The evidence of a descent of elaborated sap is overwhelming."

Renewing Old Orchards.

There has been something done in this State in renewing old and neglected orchards, and excellent results have been attained in some cases. Mr. Jessup, of Haywards, has done something notable in that direction, and there are others, whose names do not occur to us at this moment. Those who have such works in contemplation, or in progress, will be interested in an account to the New York *Tribune* by J. F. Wade, as follows: "In the winter of 1862, I rented a farm near Lockport, N. Y., that had been leased for 25 years continuously, with an 'old orchard' on it of from two to three acres. The real plight it was in would take pages to describe. It looked as though fruit would be scarce 'off' or 'on' years. A number of the trees were so near dead the owner said I never could save them. I began to trim trees every day I could bear the cold in winter, and worked every hour of spare time trimming until July. I scraped the limbs and trunks of the trees with the help of a hired man and two small boys every time a rain would come, so the old bark and filth could readily be removed. In the course of the season I plowed the ground five times in that orchard before the fruit began to fall, and dragged it as thoroughly in proportion. I manured nearly all of it once, with from two to three extra doses at different times around the sickly trees till they were waked into life. The result was: That fall, the 'bearing' year, I sold 208 barrels for 63 cents per barrel for the fruit. Many came to see and admire the beautiful crop. Even the purchaser pronounced all beautiful, but added: 'I have bought fruit here for 25 years, but never such Roxbury Russets as these!' Twenty-two covered a barrel-head, by actual count. Now for the 'off year.' Friends and parishioners would say: 'Elder, you have a beautiful, large crop of apples this year, but don't expect any next year—it is the off year.' The next year, I picked and sold over 360 barrels of apples from the same orchard, and received $1.94 for the fruit per barrel. Over one-third of the cash receipts for 1863 from that 100-acre farm were from that 'poor old orchard.' For more than three years after, another tenant could not use it so mean and cruel, but it still showed the good effects of good treatment for two years. There are varieties that are inclined to overbear one year and rest the next, the Baldwin and Greening especially so. But keep the dirt whirling, feed your trees high, and give them plenty of 'soft-soap,' and you will be almost secure from knotty, wormy apples, and your trees can no more help bearing every year, if the elements permit, than a high-fed colt can help playing."

SEEDS, BULBS AND TOOLS.—J. C. Vaughn, of Chicago, Ill., sends us a very neat catalogue of seeds, bulbs, florists' and gardeners' supplies, etc.

SHEEP AND WOOL.

Notes on Vermont Sheep.

EDITORS PRESS:—Some weeks since I crossed the Sierra Nevadas and journeyed east to New York, from thence to Vermont, the little State so justly celebrated as the central home of the Spanish-American Merino sheep. As this happens to be my native State, where my early years were passed, and where I received my first impressions of the value of thoroughbred stock and first lessons in the art of breeding and manipulating fine sheep; and, as most of the fine flocks in California originated from sheep imported from there, I feel interested in giving your readers a few facts and descriptions of the curious doings in the sheep business in that remote section of the country.

Middlebury is the county seat of Addison county, centrally located and containing a greater number of registered flocks of sheep than all the balance of the State. In 1879 there were shipped from this station to points East, West and South, 4,000 head; in 1880, 5,965 head. During the past year there were shipped 71 carloads—6,777 head. Of these, 2,287 went to Ohio; 268 to Missouri; 1,230 to Michigan; 1,725 to Texas; 668 to Kansas; 56 to Illinois; 134 to Colorado; 106 to Maine. After the 1st of January, 1882, up to the time I left, on the 31st, 15 carloads were purchased and shipped from there to different points in the West.

Sheep Prices in Vermont.

Three hundred and fifty dollars per head was paid for some of these sheep. Mr. Woods, of Michigan, paid $112.50 per head for a party of ewe lambs. Another Michigan man paid $100 per head for 20 head, and $350 for a ram lamb. Very choice sheep command much higher figures than the above. Mr. Hammond, well known to many of your readers, showed us ewes he sold for $200 per head. R. J. Jones, another famous breeder, informed us that he had a standing offer of $2 500 for one-half interest in his stock ram, "Standard." "Banker," owned by V. Rich, and "Rip Van Winkle," owned by Mr. Brookins, are valued as high or even higher, and bring their owners an income annually of from $1,000 to $3,000, outside of their own flocks, which are generally small. One thousand dollars is a very modest price for a choice ram lamb, and, in one instance, we were refused the privilege of taking one for $1,500. In some few cases the owners of these best sheep will shed tears if pressed to price a favorite animal. They will talk about California wine growing, mining, Central Pacific Railroad monopoly, anything rather than selling their best sheep.

To illustrate this fact more fully we will quote a letter received in reply to one we wrote the gentleman concerning a sheep we expected to purchase for about $250.

——, Vt., Jan. 9, 1882.

E. W. Peet—DEAR SIR:—Your note of the 4th received. You inquire if I would sell my ram, Gen. Wool, for a reasonable price. If so, to state price and give general description. I have never yet priced the General, though often invited to do so. I do not say that I would not dispose of him, yet he ought not to leave Vermont. I do not know how I could make a better or safer investment of $2,500. You are a stranger, and this may be deemed fabulous; if so, all right, it will not affect the General or his future. Concerning his good points, I would rather not amplify upon his merits, but would, with or without thought of selling him, invite you to visit me and him and then no word or thought of mine would mislead you.—Respectfully, J. S. BENEDICT.

The Sheep for Australia.

During the month of December Mr. Markham, of New York, received an order for 25 head, from parties in Australia, which he filled in Addison county, Vermont, at an average cost of $400 per head. Add to this the freight and they will land in their new home at a cost of $500 per head. To many of your readers the foregoing prices may appear extremely high, and beyond the limits of profitable returns for the investments; but it is not so. Wisdom comes of experience, and experience teaches every practical man that he can buy a choice sheep, or even a fast horse, much cheaper than he can breed one—and oftener he can buy what he could never obtain any other way, because his talent never would press him in the right channel. For 40 years some of the ablest men in Vermont have been struggling to produce in sheep what horse men call marvelous in a horse that can trot a mile in 2:10, 2:12 or 2:14. Year after year, little upon little has been added to the form of the animal, and to the beauty and quantity of its fleece, until the jeweled crown of perfection seems well nigh complete. So near, in fact, that now Vermont can challenge Australia with her 70,000,000 fine sheep; yes, and the entire world, to produce a fleece of wool from a single sheep, one year's growth, of the same quality that will *cleanse* as many pounds. Australia was badly beaten by Vermont at the Centennial in 1876, and all Europe at the Paris exhibition in 1878, L. Clark, of Addison county, Vermont, receiving the gold medal for a cleansed fleece weighing 10 lbs. 11 ounces.

These facts explain very readily why Australian breeders, and those in remote sections of the United States, go so far and pay so much for a few choice sheep for breeding purposes. But it must not be inferred from the foregoing facts that the East is the only place where good sheep are raised and sold for long figures. Last September, at a public sale in Melbourne, Australia, 100 head of Merino rams sold at an average price of $350 per head; the highest price paid being $2,500. Messrs. Haggin & Tevis have recently imported from there several high-priced rams for the improvement of their extensive flocks in this State. Germany and France also produce some excellent Merino sheep which have always commanded high prices. But none have ever been exhibited in this country that will compare with the thoroughbred Merinos of Vermont. The question very naturally arises, and often we are asked how this comes to be the fact. Some may think it is owing to soil and climate being more favorable. But this really is not the case. It comes from study, painstaking and *care*. Careful selections, carefully noted results, and constant attention for a succession of years has produced the wonderful results.

The State of Vermont has one Sheep Breeders' Association with 730 members. It has another with less members. Their annual meetings in January we attended. The relations of these two thoroughbred associations to one another and to the general wool growing industry of the country—together with our observations and their application to the wool growing interest of the Pacific coast, with which we have been and hope for many years to be identified, we reserve for another letter which we will intrude upon your favor at an early date.

E. W. PEET.

Laurel Ranch, Haywards, Cal.

MISCELLANEOUS.

Science Club.—No. 4.

[All communications for this department should be addressed "RURAL PRESS Science Club," Berkeley, Cal.]

As this column is open to all the "finds," questions, etc., of our readers, we present the following

Interesting Letter.

Rural Press Science Club:—Your letter requesting me to give some of my experience received to day. I find land shells (snails) here mostly under decaying logs and sticks in the woods, and sometimes in the grass, among the weeds or under anything that has been on the ground for some time. They prefer low, damp places, but not where the water has stood for any length of time. Some species are found on higher ground where it is dryer; I have found one or two species in my woodpile. the genus Succinea (small land snails) is usually found on grass, reeds or rushes of damp meadows or marshes; other genera are found around the roots. The physa, limneae, valvata, and other air-breathing water-snails are to be found in stagnant ponds or sluggish places in streams, sometimes floating on the water with the shell down, or attached to any vegetable substance that may be in it; sometimes on the under side of lily leaves. The melanthe, vivipara, etc., inhabit muddy places in ponds or streams. The unionidæ (fresh-water clams) are found in the beds of streams and ponds. Where the streams are sandy or muddy I find a garden rake very handy to collect them, but it will not answer in stony places. The sphærium and pisidium are mostly found in the mud on the bottom of ponds, or among the roots of grass growing on the bank. At Rockford, Illinois, I have found the pupa in damp places under most any kind of rubbish that very high freshets have scattered over the ground. At Cedar Keys, Florida, I found them on an island under pieces of shell, wood, dead plants and palm leaves, just above high-tide mark. It requires a sharp eye, some practice and much patience to find the rare and small species. When you are in the woods or fields, turn over all the old boards, chips, stones, sticks, rotten leaves, decayed logs, bits of bark or stumps, that you can, and then get down and look close to the ground, as if you were looking for a grain of gold. It is a good idea to take a pocket microscope with you. Do not expect to find them under the *first* thing you come to; you must have patience. When you find any shells, notice the peculiarities of the land—whether high or low, wet or dry. Then search in similar spots, when you again want to find the same species. This rule generally holds good. A good way to obtain the small fresh-water shells on mosses or weeds is to take them home and dip them into a basin of hot water; the shells will then fall off. This is also a good way to collect small marine shells, only use fresh instead of hot water. When collecting, it is best to carry two or three bottles or boxes of different sizes, in which to put the shells; small ones by themselves and the frail ones separate from the others. I shall be glad to obtain any live shells, viz., those that have the animal in when collected, you have to spare. I received a box of nice shells from Dr. Yates, of Centerville, Alameda county, some of them quite rare. Respectfully, A. A. HINKLEY, Du Bois, Ill.

Remarks.

Both land and fresh-water shells are found in similar situations here, but land shells are less plentiful in this State; in fact, as a general rule, very difficult to find.

We will give in another number some of the localities around San Francisco bay where those shells have been found. Cannot some of our coast readers give us the benefit of their experience?

Azel H. Fish, room 26, Nevada Block, San Francisco, offers a large number of species of Californian shells in good condition, for California Eastern and foreign shells. Please send list of duplicates first.

Two hundred classified specimens for exchange with collectors of shells, address J. S. Arnheim, 248 Oak St., San Francisco.

W. J. Raymond, P. O. box 193, Oakland, Cal., offers several species of shells for rare Californian, Eastern and foreign shells. Mr. Raymond has attained considerable proficiency in conchology and deserves promotion for his researches on the seaside. We shall hear of him again some day.

Miss Alice Hearn, Point Arena, sends us some cement, etc. How well we remember that toilsome but pleasurable walk, up and down those precipitous hills to sketch that cement ledge. And again in memory appear the cliffs and waves and shells of rare old Galloway beach.

Naturalists' Directory.

Collectors in the various departments of natural history find that they can aid each other greatly by exchange of material. One who is interested in the work, asks the PRESS to copy from Casino's Directory a list of the names of California collectors, not claiming that it is complete, but stating that those mentioned are willing to correspond and exchange material with others in the same line of study. We publish the list to facilitate correspondence and exchange, and thus serve our readers who have leaning toward studies in natural history:

California Collectors Who Will Exchange.

Geo W. Warren, Ferndale, Humboldt Co., botany, ferns, etc.

Mary E. P. Ames, Auburn, botany.

Rev. F. H. Wales, Dutch Flat, Placer Co., mineralogy.

Charles L. Anderson, M. D., Santa Cruz, botany, algæ.

Melville Atwood, Saucelito, geology Special branch, inclosing, or wall rocks of metalliferous veins. Exchanges in specialty.

Mrs. R. F. Bingham, Santa Barbara, botany

Frank E. Blaisdell, Poway, San Diego Co, entomology (local) Exchanges in oology and coleoptera

Mrs S G Blaisdell, Poway, San Diego Co, ferns

S Bluthner, Lockeford, San Joaquin Co, coleoptera.

S. D. Brastow, care Wells, Fargo & Co., S. F., paleontology, mineralogy

Elisha Brooks, 1725 Sutter St., S. F., ferns.

Mrs. A. E. Bush, Curator State Normal School Museum, San Jose, conchology, mineralogy, algæ

Miss Jennie R Bush, San Jose, entomology

George D. Butler, Fort Jones, Siskiyou Co., botany.

J. W. Calkins, Santa Barbara, conchology, algæ

A W Crawford, Oakland, botany, paleontology, geology, mineralogy

Andrew T. McCreery, 519 Jones St., S. F., coleoptera.

Roscoe P Chandler, Riverside, San Bernardino Co., oology

Miss Kate O Sessions, 1425 7th Ave., East Oakland, ferns, mineralogy, entomology, mollusks

Daniel Cleveland, San Diego, botany, ferns, marine algæ

Mrs Elwood Cooper, Santa Barbara, botany

J. A. Edman, Meadow Valley, Plumas Co., geology, mineralogy, meteorites.

Gustav Eisen, Fresno, annelida oligochæta Exchanges types of oligochæta

William C. Flint, 210 Sansome St., S. F., mineralogy, shells, ornithology, oology Exchanges in oology

H. C. Ford, Santa Barbara, ferns, algæ, paleontology, archeology, conchology

F. G. Hall, Greenville, Plumas Co., chemistry, mineralogy, geology.

D. W. Hambly, Spanish Ranch, Plumas Co., geology, mineralogy, meteorites, general biology.

Laura J. F. Hecox, Santa Cruz, conchology California shells in exchange for land and fresh water shells, fossils, etc.

E K. Hill, Brownsville, Yuba Co., botany, ornithology, entomology

A. W Jackson, University of California, Berkeley, mineralogy, microscopy, lithology.

G. Walter Johnston, Sacramento, botany, glumaceous plants, fungi

Prof Josiah Keep, Alameda, conchology. Fine Pacific in exchange for Atlantic and foreign shells.

Prof George R Kleeberger, San Diego, botany, zoology, embryology, arachnida

Edgar L. Ricksecker, P. O. box 2211, S. F, coleoptera.

S. B. P. Knox, A. M, M. D., Santa Barbara, algæ, microscopy, entomology.

Miss H ten Leuwebacker, Santa Cruz, algæ

George W Michael Jr, Moro Bay, San Luis Obispo, geology, mineralogy

S. M. Mouser, M. D., 235 Kearny St., S. F., microscopy, general botany, vertebrate embryology.

William Norris, 516 California St., S. F., microscopy.

Mary E. B. Norton, San Jose, botany.

Carrie A. Wheelan, 311 Fourth St., Oakland, coleoptera

John H. Orcutt, San Diego, conchology, oology.

George H Peck, El Monte, Los Angeles Co., lepidoptera.

Miss Emily O. Pelton, Brownsville, phænogamic botany, ferns

W. S. Phelps, Ferndale, Humboldt Co., botany.

J B. Pownall, Berkeley, coleoptera

George H. Ready, Santa Cruz, oology.

J. Edward Reed, Wright's Station, Santa Clara Co, mineralogy, mound builders and Indian relics.

O N Sanford, San Diego, general natural history (local) Exchanges in coleoptera and conchology (general)

Frank M Stone, 216 Sansome St, S F, shells, ornithology, oology

F. L. Button, 859 Broadway, Oakland, conchology, mollusks.

James A. Hall, Watsonville, Santa Cruz Co, general exchange.

Ferdinand McCann, Santa Cruz, oology. Exchanges eggs in sets.

Miss Emma Swain, 1354 8th Ave., East Oakland minerals, mollusks.

Miss Cornelia Walker, San Jose, marine zoology.

Miss Mary E. Wilson, ferns, algæ

Chas. T. Winslow, S. F., conchology, ornithology, oology Exchanges shells, birds, skins, nests and eggs.

Mrs. Lizzie Wright, Monterey, ferns.

W. G Wright, San Bernardino, botany, palms, cacti, ferns, seeds, etc. Exchanges for rare ferns.

Dr. Lorenzo G. Yates, Centerville, Alameda Co, conchology, geology, mineralogy. Many specimens for exchange Send list.

Lucien A Blochman, San Diego, conchology, algæ Offers all specimens found in San Diego.

Philip Sidney Carlton, corner 19th and Brush Sts., Oakland, coleoptera.

Laura G. Feely, Patchen, Santa Clara Co., shells and curiosities.

Moses L. Frick, San Diego, conchology

Prof Milo H Gates, Green Valley, El Dorado Co, botany

John H. Russell, San Jose, Santa Clara Co., exchanges Pacific coast shells for those from any part of the world.

James E. Wallham, San Diego, conchology, algæ Offers all specimens found in San Diego or northern part of Lower California.

F. V. Hopkins, M. D., East Lake, Lake Co., mineralogy, geology

Lewis Locke, 926 Jackson St., S. F, ornithology.

AN APPRECIATIVE FRIEND.—Dr. L. N. Dimmick, of Santa Barbara, an old friend of the RURAL and whose good opinion is valuable, writes:

I send draft for $6 for the RURAL PRESS for two years in advance. The time for which I had previously paid, expires to-morrow. It has been an excellent paper, and yet I find you are improving it.

Such letters give us much strength and courage and will lead us to work the harder that the good opinions shall be maintained.

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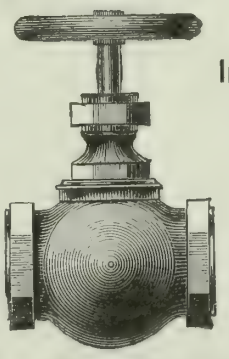

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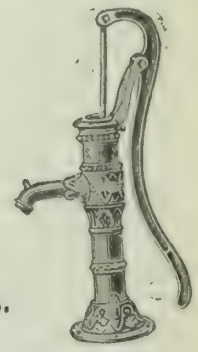

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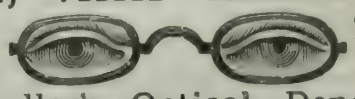
1863  1882

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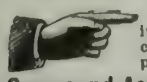

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SERICULTURE.

Meeting of the State Horticultural Society.

The regular monthly meeting of the State Horticultural Society was held in this city on Friday afternoon, February 24th. Although the day was inclement there was a fair attendance, including a group of ladies of the Silk Culture Association, who were present by special invitation to their society. The chair was occupied by the Vice-President, J. V. Webster. For lack of a quorum of voting members, the election of new members was laid aside until the next meeting.

Rules for Horticultural Fairs.

The secretary remarked that he had communicated to the managers of the Mechanics' Institute the decision of the Society that at least $2,000 should be offered in premiums, but that he had been unable to communicate with members to ascertain their disposition with reference to exhibiting, because the committee appointed to draft rules had found it impossible to report their report early enough to admit of its being sent along with an invitation to exhibit. Although the members of the Rule Committee, Messrs. Dwinelle, Jessup and E. Meyer, had consulted about the recommendations to be made in their report, they had missed a final meeting to sign the document. However, the report was read, with the name of the chairman attached, and then remanded for discussion at the March meeting. So that all members may get an acquaintance with the proposed rules and thus be ready to discuss them at the next meeting, we print the report as read, in another column.

Mulberry Growing.

The regular subject, the growth of the mulberry, was opened with an address by Rev. C. A. Buckbee, D. D., who appeared on the part of the Silk Culture Association. Rev. Dr. Buckbee spoke as follows:

Lamartine says: "From a plowed field there is springing up not wheat only, but the entire civilization of a country." There is truth in this saying, and on this truth we base our plea for the cultivation of the mulberry tree. Of all the trees of a field, there is none more useful. It is ornamental, useful, and is a source of wealth to those who will avail themselves of its bounty. It yields wealth to the farmer and to the trader. It is an important factor in industrial enterprise; it promotes the peace of familes by giving to old or young pleasing employment, and pays large reward for the work; it enriches the community and promotes the independence of the nation.

Other nations are adding millions to their annual revenues from the cultivation and proper use of the mulberry tree. The tens of thousands of silk looms in France, Italy, Prussia, Austria, Hungary, Poland, Switzerland, Russia, Turkey and China owe their existence to this tree. In its cultivation millions of their peoples have for generations found their chief employment and main support. It is, to-day, one of the principal resources for their daily bread with millions in China and Japan.

When the secret for producing silk from the leaf of the mulberry was discovered in China, it was guarded for ages. When the knowledge was finally brought to Europe, its value was appreciated by kings and princes everywhere; patents of nobility were granted by European monarchs to those who became eminent in producing raw silk from the mulberry leaf. Even now it is not an uncommon thing to see princes in royal families, with their ladies, gathering leaves from this wonderful tree, feeding them with their own hands to the silkworms in their royal cocooneries, and rejoicing at the end of their labor in the possession of bales of raw silk, secured by their own industry.

Uses and Values of the Mulberry.

There is a bit of history in connection with the Mennonites, that shows the value of the mulberry tree. A correspondent of the Chicago *Times*, living near one of their colonies in Nebraska, says, that about 80 years ago, when they announced that they could not consistently with their religion serve in the army, the German government ordered them either to serve in the army or leave the country. The Czar of Russia offered them a tract of land and exemption from miltary duty, which they accepted. The Czar introduced, with them, the mulberry tree, for the purposes of silk culture, and also to facilitate the fall of rain. The enterprise was a success. Silk culture thrived, and the wood proved to be desirable for fuel and fence posts of a durable quality, and also for cabinet wood.

A little over seven years ago, several colonies came to the United States, bringing with them the seed of mulberry and other trees. They planted more of the mulberry than of all other seeds combined. Seeds planted seven years ago have now produced trees 20 ft. high, and large enough for fence posts. The tree frequently grows from 50 to 60 ft. high, and has a body from 3 to 5 ft. in diameter. It is hardy, and has some of the habits of the apple tree. It commences bearing often when two years old. It yields a luscious fruit of jet black and reddish-white color, the flavor rising from sub-acid to sweet. Cows feed upon the fruit, and yield milk of a richer quality and increased quantity. Sheep and other domestic animals thrive upon the fruit of this tree. Bees make from it abundance of honey. In dry seasons in Europe, the leaves and fruit of the mulberry are fed by farmers to their stock. It has often saved their animals from death, when grass failed in their fields.

In some places in Europe it is sown and harvested as a substitute for hay. The Mennonites use the trees for hedging. It stands shearing and trimming admirably, and makes a beautiful hedge

In Nebraska the Mennonite colonists also cultivate the mulberry for the sake of feeding the leaves to the silk worm, and have already produced some very excellent cocoons for the use of our Eastern silk manufacturers.

In Europe this tree is frequently planted along the highways. Mile upon mile of the mulberry affords its grateful shade along the thoroughfares of Germany, France, Switzerland and Italy. The women and children of poor families are permitted to gather the leaves for feeding the silk worm in their humble houses, and to many families this provides a chief means for their support through the year.

It will thus be seen that this tree ranks among the most important in the world. Its uses are many; its value is inestimable. It facilitates the fall of rain, gives food to bees and cattle and other stock; is a substitute for hay, is admirable for fencing, for fuel and for cabinet wood, and, finally, is the source of great wealth to many nations who cultivate it for raising silk.

Our railroads would do well to plant such a tree as this along their routes of travel. Our rich men who have immense tracts of land for immigrants from European silk-growing countries, should plant a few acres of these trees as an inducement to purchasers. A single acre planted with less than 500 trees would in two years be sufficiently grown to enable the purchaser in the first six weeks in May or June to raise raw silk enough to support his family during the rest of the year. If, to every 100 acres, our large land owners were to plant but one acre with the mulberry they would be doing an immense service for the future welfare of the State.

What has been Done.

Among the varieties of the mulberry the *Alba* or white is preferable for silk culture; the Moss rose and Japonica are in great favor, and all have their place in the production of rich silk. A few trees planted to begin with will soon furnish abundant cuttings from which to add immensely to the number.

It is a fact which will surprise many, that one acre of trees, properly planted, will in two or three years be sufficiently grown to yield food enough to feed 1,000,000 silk worms. If only one-tenth of the number grow and make their cocoons, enough will be produced to realize by their sale from $1,000 to $3,000, according to the condition of the market. Two thousand dollars is by no means an unreasonable return for an acre. How does this compare with the product of wheat from that much ground? The labor is no greater; the work is all done in about six weeks, and the labor can mostly be performed by women and children. The statement seems incredible, but it is within the truth, and will not surprise any one who has given attention to this great industry, or is familiar with acknowledged authorities on the subject.

Careful analysis of the mulberry leaf shows that it is composed of solid or fibrous coloring matter, water, saccharine and resinous or silky matter. The first three elements are not absolutely necessary to the life of the silk worm. The saccharine nourishes the insect; the resinous matter is accumulated and purified by its peculiar organization, and forms the silky filament of the cocoon. The yield of silk depends upon the amount of saccharine in the leaf. Good soil is therefore necessary to produce a full cocoon and the best quality of silk. Experienced culturists are careful to enrich the soil when it becomes hard or impoverished by long use.

Leaves from the white mulberry, when grown upon elevated situations, and exposed to a dry atmosphere, produce abundant silk, pure, strong and of the finest quality.

Propagation of the Mulberry.

The trees may be propagated from seed, cuttings or layers. Those propagated from seed are hardier and live longer, but are not reliable as to variety. From 100 trees of the same seed not more than 20 may be of the same variety. As the white mulberry is most desirable for the best silk, propagation from cuttings and by grafting becomes important. An intelligent, active man can set 250 to 300 grafts a day.

The white mulberry succeeds admirably from cuttings. The ground should be plowed deep and well harrowed. The cuttings, six to eight inches long, should be set in rows, three or four ft. apart, the ground pressed firmly around the lower end, the upper end covered from one inch to one-half an inch with mellow earth. Deep plowing is necessary in order to open a way for the roots to go down to the moisture in the earth, and enable the trees to withstand the long rainless season in southern California. Such propagation will repay a hundred fold by more rapid growth and larger yield of leaf and fruit. It will be a legacy better than golden to future generations.

When the trees are to be grown from seed, the ground should be carefully prepared in beds about three ft. wide, space being left between the beds for a person to pass while attending to them. To assist germination, the seed should be put in water about 24 hours, then mixed with dry sand (one-third sand to two-third seed) and then sown broadcast over the beds, the earth carefully raked over it and gently patted down with the back of a spade. When the soil is hard, if straw is sprinkled over it, it will, in a measure, remedy this evil. If the season is cold and excessively wet and rainy, a canvas or blanket placed over the beds, elevated slightly above the surface by pegs, will protect the seed from frost and heavy rain. If there be no rain, the seed must be watered. Weeds must not be allowed to grow. The soil should be light, sandy loam, the ground elevated where possible, and have an exposure to the southern sun.

Educate the Young.

We are spending about $80,000,000 a year to educate the children of the United States in our public schools. Three years ago California spent $3,000,000 for public school education. Not a dollar too much! We owe it to our children to give them an educational outfit for the battle of life. Knowledge is power. The boy or girl who has the widest knowledge that can be utilized, is the best able to struggle with the duties of life successfully. Our national training schools at West Point and Annapolis require the boys to do more than study books. If it be asked, "What are we going to do with *them*" the answer is, "Make soldiers for the army and seamen for the navy." For this purpose they are educated in tents and on ships; they are taught to handle firearms, to make powder, to take long marches; they are drilled in the duties of their future work, on land or sea.

We hear the question often asked, "What shall be done with our boys and girls?" Men lecture about it, preachers talk about it, parents are anxious concerning it. We give them a book education, and send them forth from our schools, 10,000 a year, with the question still unanswered. Hon. Chancellor Hartson and other patriotic men lately rung out the unsolved problem. You, gentlemen of this Society, can help to put this question at rest. Your questions relate to the trees and flowers of the Golden State. What shall we plant and cultivate? What trees will best enrich, beautify and improve this Eden of our country?

I ask you to consider whether useful trees and flowers should not be planted around every schoolhouse in the rural regions of California, and in the squares and along the streets of our cities. Among them let the mulberry take its place. Why should not the school children of California be taken by their teachers, as is done in Germany and other European countries, out of the school-room to learn lessons from the trees and flowers of their school gardens. In European schools they are taught to make perfumes and essences from flowers; they are taught how to tend the silk worm, and watch with wonder the production of silk. It is to them an exciting recreation. They gain knowledge which they carry to their homes, and when they are grown, they put their knowledge thus gained to a use that helps them to provide for the wants of life.

In the production and reeling of silk and its manufacture, there is work for thousands of woman and children, who are to-day unemployed. The work can be done in sorrowing city homes as well as in the country. A mother and daughter can reel a pound of silk in a day, which in France sells for $6 to $7. After paying for the cocoons, they will have earned from $3 to $5.

Plant the mulberry tree. Let children be taught its value. Let teachers in our schools be encouraged to foster this part of a practical education. Let our highways be adorned with these trees of life to the people. Let our railways beautify their desolate roadways with leaves from this tree whose value is above price.

California yields gold and silver for the world; its wheat finds markets everywhere; its wines rival those of France; its fruits are the desire of all nations; its climate is equally favorable to the production of the finest silk; let it also soon be said that its production of silk from the mulberry is equal in quantity and quality to the wants of the idle looms of the world, that stand ready to repay us for the product of our generous soil with gold for those whose hands supply it.

Discussion.

A lady member of the Silk Culture Association said that silk equal to the best Italian article, worth $9 per pound, has been raised in this city. The Association furnishes mulberry seed and a small amount of silk worm eggs free, upon application to the secretary.

Dr. Gibbons, of Alameda, said in reference to the statement contained in the paper read, that in order to have good mulberry tree leaves the culturists must have clean trees, and clean trees only result from proper cultivation. The silk worm requires strong, succulent, healthy leaves, and it is not to be supposed that this result can be attained without constant care and cultivation. The presence of scale bugs on nearly all kinds of fruit trees, means that the same pest will affect the mulberry tree, and that means that the tree cannot be successfully cultivated without being carefully and intelligently cultivated. Dr. Gibbons showed a branch of a mulberry which was infested with several kinds of scale bugs. He remarked farther that it will not do for purposes of growing silk worm food to simply plant the seedling or slip and then expect nature to do the rest and furnish a supply of healthy leaves. Dr. Gibbons thought the multicaulis as good as any other tree for silk culture purposes.

Judge Blackwood, of Haywards, related the experience of a Frenchman named Goves, a practical silk culturist, and the son of a silk weaver, who made a determined experiment in silk culture with Judge Packard, in Santa Barbara. As the result of his experience, having lost all the money he invested in it, Mr. Goves said to the speaker: "Silk culture will not and cannot succeed on this coast within the range of the influences of the coast climate. The coast fog and damp winds produce a disease among the worms that is fatal to the industry." The speaker added, as his own conclusions, that even in those parts of California where it is possible to cultivate the silk worm, the industry will not succeed until those parts of the State have a dense population. "For," the speaker said, "in no part of the world is the culture pursued successfully as a speculation; it must be made a domestic industry, as it is in France. Let every farmer's wife have one or two, or three trees, as the case may be, and as many silk worms as those trees will feed. Then, with that as an incidental industry to her other domestic duties, having only a tree or two, and only a few cocoons, thoroughly understanding the requirements of both tree and worm, she will be able to succeed perfectly, for she will give to her little industry the minute and intelligent care and attention without which it can never succeed. In France, there are hundreds of thousands of peasant wives, who, in this way, add to the family's income; and when the combined product of all those is brought together, the result is a mighty mass of raw silk, which the weavers work into a grand income for the nation."

To this several ladies replied that the best evidence that the industry could succeed even in the coast counties is that it has succeeded there. They stated that it was the special aim of the Silk Culture Association that the culture should not be entered into as a speculation, but as a domestic industry, to be cared for by the farmers' wives and daughters, as the last speaker had suggested. The discussion proceeded under the cautioning suggestions of Messrs. Gibbons and Blackwood and J. Shinn, of Niles, and the enthusiastic answer to all doubts by the ladies.

Dr. Gibbons finally closed the discussion, which disclosed a great amount of interest in and knowledge of the subject on both sides, by gallantly offering the following:

Resolved, That the thanks of the Society be extended to the ladies of the California Silk Culture Association for their presence, and that hearty endorsement be given to their praiseworthy efforts in the encouragement of silk culture in this State.

This was unanimously adopted.

The subject of hardy shrubs was introduced by W. G. Klee, of Berkeley, who exhibited and briefly characterized a number of shrubs growing on the State University grounds. He commended especially several species of the genus *pittosporum*. Mr. Wolleb, who was also to speak upon this subject, will present his views at the next meeting.

C. H. Cooley, of Cloverdale, remarked that his special mission at this meeting of the Society was to gain the experience of members in grafting over old fruit trees with more desirable fruits. On motion, this was made one of the subjects for discussion at the next meeting.

James Shinn exhibited several fine-looking seedling lemons, which had grown in the open air on his grounds at Niles, Alameda county.

Women's Silk Culture Exhibition.

The Philadelphia *Ledger* has an account of the exhibition of the Women's Silk Culture Association which was held in that city week before last. The exhibition was largely attended and the greatest interest was manifested in the rare articles to be seen. A full band of music was in attendance every afternoon and evening. The Rev. O. H. Tiffany, who has lately returned from Europe, and who was present at the silk culture exhibition at Milan, pronounced the display in Philadelphia superior to the Milan exhibition in every respect.

Among the leading features of the present Exhibition, was the pattern of the silk dress to be presented to Mrs. Lucretia R. Garfield, and which will be paid for by subscription. A silk reel was worked day and evening. It was run by electricity and the silk was reeled from the cocoons at the rate of 250 revolutions per minute. It is claimed that there is nothing like it in the world. Then there was a magnificent blue silk dress and train ornamented with pearl beads, also some superb specimens of painting and embroidering on silk. A Jacquard loom was in operation making silk goods; a number of rich silk handkerchiefs were shown of American make, from the egg of the silk worm to the handkerchiefs themselves.

At the main table there was an immense variety of silk articles, all of American manufacture. A lady's dress of myrtle-colored velvet and embroidered silk, with pink satin skirt, attracted great attention, the material costing $15 per yard. There were 26 competitive jars of cocoons, each jar containing one pound of cocoons. Silk was shown through a microscope of such power that a single thread looked like a piece of rope. There were also cases showing how silk worms are raised and how they make cocoons. A loom for making plush goods attrcted attention, and there were some choice specimens of writing on silk done by a sewing machine. Hundreds of other interesting objects in the silk line were on exhibition.

THE Treasury will have $33,000,000 to disburse during the first half of March, on account of interest.

Regulations for Horticultural Fairs.

At the last meeting of the California State Horticultural Society, the following was read and laid aside for discussion at the March meeting:

Report of Committee on Rules for Exhibitions.

To the Members of California State Horticultural Society:—The undersigned, having been appointed a committee to consider what rules should be adopted for the government of horticultural exhibitions in California, respectfully report as follows:

We find the accessible rules of horticultural organizations in this and other States so imperfect as to be merely suggestive of what should be aimed at. In the limited time at our command we have not been able to secure the rules of some of the most noted and successful societies at a distance.

We cannot, therefore, offer a complete scheme for such exhibitions, but suggest what, after a good deal of deliberation, seem to us most necessary to remedy evils heretofore complained of.

1. A general horticultural exhibition to secure the attendance of a large number of exhibitors should be limited to a few days. One week, including a day or a day and a half for preparation, would be the best for a trial.

It might be found feasible to keep open for two weeks, by changing the classes shown at the end of the first week. Potted plants could then be returned to conservatories before being injured, and their places filled by those of another class.

Experience has shown serious objections to continuing exhibitions for a month or more. Plants taken from conservatories to the unfavorable conditions, as to light and temperature, of exhibition buildings have been seriously injured, and in many instances ruined. Valuable collections of palms, oranges, etc., have thus been destroyed. Few persons wish to expose their choicest specimens to such a fate. Exhibits of cut flowers have to be renewed many times and at heavy expense. The same may be said of fresh fruits, and as these must come mainly from a distance, the cost of transportation becomes so heavy as to deter many from exhibiting.

These objections, as a matter of course, do not hold in regard to nuts and fruit that is dried, canned, or otherwise preserved. It is very desirable that these products should be fully represented at all of our fairs, and that their merits should be passed upon by impartial and competent juries, who should, in their reports, give reasons for their awards. The exhibitions would thus become truly educational to exhibitors, and we might hope to see a rapid improvement in the general character of our preserved fruits.

2. Horticultural exhibitions should be conducted in such a way as to make them in the highest degree educational, in that which relates to the science and art of horticulture, and inculcating a love for that which is most beautiful and best in garden and orchard. They should in no sense be pecuniary speculations. The receipts should be considered of importance only as they are needed in paying necessary expenditures and providing for liberal premiums.

3. Applications for space and specifications as to tables, etc., needed, should be sent in so as to give ample time to have the carpenters finish their work and leave before the opening of the exhibition.

No noisy work by mechanics in fitting up stands should be allowed during exhibition hours.

4. All trees, shrubs and potted plants must have been owned by the exhibitor for three months previous.

Fruits and flowers must be from trees, shrubs or other plants owned by the exhibitor.

5. All articles exhibited must be properly named; any mistake in this respect shall disqualify for a premium.

6. All plants and fruits must be free from insects noxious to horticulture.

7. All exhibits must be in order for the inspection of the jurors several hours before the doors are opened to the public.

8. Exhibitors must not be present while jurors are examining or making awards on exhibits.

9. Articles exhibited must not, at the time of the jurors' visits, be so marked as to indicate who are the exhibitors or owners, numbered cards, only, being attached previously.

10. An entry clerk, or other officer in charge of the general exhibition, must be present at the time of the jurors' visit, to give any needed information to the jury; but in no case must he reveal the ownership of the articles shown.

11. Jurors must be in attendance in a room provided for their use, promptly at — o'clock on the day of opening. They shall have until— o'clock for the inspection of articles, and must announce their decisions to the secretary by—— of the same day. They must not return to the exhibition rooms after these have been open to the public, unless they have announced their decisions to the secretary. The secretary shall place appropriate cards on successful exhibits, showing premiums awarded, by 7 P. M. of the opening day.

12. Brief statements, needed by the juries to pass intelligently on the merits of articles shown, may be furnished to the secretary, or entry clerk, and by him handed to the appropriate juries. Such communications must not be in the handwriting of the exhibitor, nor signed by him, nor containing any mention of facts which would lead to the identification of the exhibitor by the jury.

13. Each person acting as a juror should be presented with a season ticket to the exhibition, so soon as he has discharged the duties imposed upon him.

14. A gardener, foreman or manager exhibiting by the consent of his employer, shall be entitled to all cash prizes awarded for the exhibit so made, while any medals or diplomas awarded in such cases shall go to the owner of the articles exhibited, provided, that no such exhibit shall be collected from more than one owner or firm.

15. Great care should be exercised in drawing up premium lists, and fixing classes, so as to offer attractions alike to the professional florist, nurseryman, gardener, orchardist and amateur.

The best of everything horticultural should be drawn out if possible, even though the owner may have but a single plant grown in a pot by the window.

16. To do justice to the horticultural products of central California, three exhibitions should be held, namely: in June, August and October.

All of which is respectfully submitted for your consideration.—C. H. DWINELLE, of the Committee.

The above will come up for discussion at the next meeting of the Society. [Emil Meyer, a member of the committee, has, since the meeting, signified to us his approval of the report as above printed.]

Counterfeit Butter.

In one of the great dairy States stringent enactments were secured from the last Legislature against its being placed upon the market without being distinctly labeled, and a leading journal in the same State, in a late issue, heads an article of warning with the startling words, "Wake Up." It goes on to say: "The manufacture of surene (the proper name of the article) seems to be on the increase." It proceeds to give testimony from the commission houses. One says: "The majority of the smaller grocers say they prefer to handle hog butter, as it gives better satisfaction than the majority of butter shipped in from the country." Another house testifies: "A number of the grocers claim that the bogus article sells better and gives satisfaction. It is sweet and of even color, while genuine butter is often sour and generally streaked." The same papers say that 75,000 lbs. a week of hog butter are turned out by the manufacturers in the city of Cleveland. The Governor of New York, another great dairy State, refers emphatically, in his late message to the legislature, to the necessity of legislative protection for the dairy interest against this dangerous rival. That wide-awake paper, the PACIFIC RURAL PRESS, has been making discoveries also in respect to the rapid increase in the use of bogus butter. It finds that in the East "the false article has generally been introduced in the place of the lower grades of butter, and that all the hotels and restaurants of the common sort are using it. Beyond this, the extent of the manufacture can be seen from the fact that more than 700,000 pounds were exported from New York to European ports. The intrusion of such a mass of fraudulent butter, which is so acceptable that people eat it unsuspectingly, or with a relish, must have a grievous effect upon the production of the genuine article." The same sheet congratulates its readers "that in this State we are free from the contact, except perhaps in occasional cases. The general quality of California butter is too high (save the mark) and too generally known by all classes of our population to allow a chance of the wide introduction of oleomargarine." The best way, then, for the creameries of New York and Ohio to avert the danger from their butter market is to import some butter-makers from California to teach them how to manufacture an article that shall drive out the bogus intruder. If it is as good as represented and can be purchased at about half the price which the consumer is compelled to pay for dairy butter, it will come as sure as water finds its level. If it is a "vile compound," that fact should be known and that should effectually exclude it from the market. But to call it so, without the proof, is merely begging the question, and will never convince people who have the evidence of their senses that it is a good article of diet.—*H. E. W., in Mendocino Beacon.*

[We are glad to see this subject discussed in the local journals of the dairy counties. There is no doubt but the average quality of California butter is higher than at the East. The Eastern butter dairymen could not remedy their troubles by securing California butter-makers. The chief advantage here lies in the clear dry air and cool nights which are a safeguard against taints such as are propagated in the hot muggy summers at the East.—EDS. PRESS.]

THE ACME HARROW.—The manufacturers of the "Acme Pulverizing Harrow, Clod-crusher and Leveler," (Nash & Bro., 22 College place, New York), have sent us a neatly printed pamphlet containing more than 100 pages of closely printed testimonials to the value of this implement. What a mass of favorable evidence it is, to be sure. California is well represented in the letters.

About Patents and Inventions.

Patents Are Virtually Contracts

Between inventors and the public. The consideration flowing from both parties to the contract is expressly fixed by statute. The Government requires the following consideration in every case: First, that an applicant for a patent shall disclose a new and useful improvement, of which he is the first and original inventor. Second, that the invention has not been patented, or published in a printed publication, prior to the date of his *invention*. Third, that the invention has not been in public use, or on sale, more than two years prior to his application for a patent. Fourth, that the invention shall be properly described and claimed in the specification forming a part of the patent. Provided an inventor complies strictly with these conditions, the Government guarantees that the inventor shall have the exclusive right to make, use and sell the thing invented for the term of 17 years.

The Patent Law provides that in case a patent, which is the evidence of the contract, is not executed in compliance with the requirements of the law, it may be annulled and rendered void. Hence, it is of the greatest importance to every inventor that his patent or contract be skillfully and accurately drafted, that it may afford him complete protection for his invention during the life of his patent.

Secure a Good Patent.

An inventor should first ascertain whether or not his improvement has been patented to another. This requires an exhaustive search among all the patents in the class to which the invention relates. This question can often be answered gratuitously by us immediately on receiving full information of the invention, by reason of our long and extensive practice as patent solicitors and editors and publishers of first-class scientific and industrial journals during the past 20 years and over. When the question of priority of invention is not so readily to be determined, it is generally best to make what is termed a "preliminary examination," by searching through the patent office reports among the patents in the class to which the invention relates, and referring to our extensive patent library, containing compilations of special classes of American and foreign inventions, mechanical dictionaries, scientific encyclopedias, files of scientific and mechanical newspapers, and an immense number of patent applications by inventors of the Pacific coast, carefully filed by this office since 1860.

If, by this "preliminary examination," the improvement is found to have been previously invented, our client will receive for the small fee of $5 for the examination a verbal or written report showing definitely whereby his invention has been anticipated, thereby saving him further expense, and perhaps much time, useless delay, anxiety, etc. When the invention is found to be patentable, the fee for preliminary examination is applied toward the payment of the remaining fees, so that a preliminary examination by us really costs the inventor nothing extra if an application for a patent is finally made.

To avoid all unnecessary delay, however, in securing patents at the earliest moment practicable, inventors will do well to forward a model, drawing, or sketch, with a plain, full and comprehensive description of their invention (stating distinctly what the particular points of improvement are), with $15 as a first installment of fees. A preliminary examination will then be immediately made, and if the invention is found in an earlier patent, we will return $10 to the inventor, and retain $5 for services. If, on the other hand, the improvement is deemed to be novel and patentable, the necessary papers for an application for a patent will be prepared immediately, and forwarded to the inventor for his signature. When the inventor receives the application and finds it duly prepaid, he will carefully sign and return the same plainly addressed to us, with postal money order or express receipt for the balance ($25 or upwards) of our own and the first fee of the Government. The case will then be promptly filed by us in the Patent Office, and vigorously prosecuted to secure the best patent possible [This course is the most expeditious and satisfactory, as no time is lost in transmitting correspondence relative to the preliminary steps to be taken.] When the patent is allowed, the inventor will be duly notified, and on sending the final Government fee of $20 to us, we will order the issue of the patent, and forward the same as soon as it is secured from the Patent Office.

When the invention consists of a new article of manufacture, or a new composition, samples of the separate ingredients sufficient to make the experiment, and also of the manufactured article itself must be furnished.

Models and Drawings.

Models are now seldom required by the Commissioner of Patents, and generally only in intricate cases. Perfect drawings of practical working machines are considered more satisfactory to the Patent Office than the old and more cumbersome system of storing up an immense bulk of almost numberless models.

Drawings or sketches sufficient to illustrate clearly the invention, with a sufficient description to enable us to make a full set of perfect drawings for the Patent Office is all that we require. A model will answer our purpose as well, however, in cases where the inventor can more easily furnish it for our use.

The value and even the validity of a patent often depends on the character, clearness and sufficiency of its drawings. There are thousands of existing patents in which the improvements are but partially or very poorly illustrated in the drawings. When an attempt is made to dispose of such patents, the vagueness and defects of the drawings often prejudice capitalists and manufacturers against the invention, while in reality it may be of great value, and would meet with ready sales had the invention been fully portrayed by artistic and skillfully executed drawings. Again, when patents of this character are brought into court, the uncertainty and ambiguity of the drawings enable the opposing experts to mystify the judges as to the construction or combination of parts intended to be covered by the patentee. In all cases prepared by us, the drawings are made under our personal supervision, by skilled draftsmen in our constant employ, and every precaution is taken that the invention is fully and clearly shown by different views, so that the improvement will be readily understood by the Examiners in the Patent Office, and comprehended by the public when the patent is granted.

In the Patent Office

The application is assigned to the Examiner having charge of the class to which the invention relates. The case must then take its turn with others in the order of filing, and in due time is carefully examined to test the novelty of the invention. If the Examiner fails to find anything that anticipates the invention, a patent is immediately allowed, provided the specification and claims are drafted in proper form. Should the Examiner find a prior patent which, in his opinion, anticipates one or more of the claims the application, a letter of rejection is sent to the attorney in charge of the case; and if the attorney coincides with the views of the Examiner, the claims rejected are erased. In preparing applications for patents, an attorney should be careful to familiarize himself with the class of inventions to which the application pertains, so that the specification and claims may be drafted as nearly perfect in the first instance as is possible. This course saves much time in prosecuting the application to a patent.

When claims are improperly rejected on patents which do not anticipate the spirit or wording of the claims, proper steps are immediately taken to convince the Examiner of his error. This is done, in most part, by personal arguments, as the differences in construction, operation, function and results are more readily discovered and appreciated by an oral presentation of the facts than can possibly be done by relying solely on written arguments. In order that the Patent Office record of the patent shall be complete, an oral argument is generally supplemented by a manuscript brief, that others, in examining the files at any future time, may clearly comprehend the position taken by the Examiner and attorney in prosecuting the case to patent.

In addition to our own personal attention to the interests of our clients here, we have, for over 12 years past, had constantly in association with us in Washington, one of the soundest legal counselors and ablest of practitioners in patent business in this country, who carefully attends in person to our business at the Patent Office and has attained success in a most marked degree.

Perfect Claims.

The value and force of a patent are dependent on its claims. A patent may disclose to the public the most important and valuable invention, and yet the claim be of such meager scope that the patent is actually worthless. When the claims of a patent are so loosely drafted that infringers can flood the market with improvements, differing from the improvement disclosed by the patent only in slight changes in construction and arrangements of parts, such a patent is valueless to the owner, as it fails to afford him that exclusive and complete protection guaranteed by the Patent Law. Hence it is that the greatest care, skill and perseverance are required, first in properly drafting the claims in the first instance, and, second, in prosecuting the application before the Patent Office, and maintaining the rights of the inventor to claims as broad and sweeping as the invention will warrant. This latter is no easy task. The Examiners of the Patent Office serve in the capacity of attorneys guarding the interests of the public. It is their sworn duty to exercise the greatest care and watchfulness, that patentees do not secure claims of greater scope than they are justly entitled to. It is but natural that Examiners are sometimes in error as to just what scope should be accredited an invention. Although the Examiners act under honest convictions in cases where they refuse an inventor his just rights, yet it is the duty of the attorney to maintain the claims of his client, if he is convinced that they are just and proper. To succeed in this requires the display of tact, firmness and ability; and when the Examiner is made to see that the inventor is honestly and fairly entitled to the claims which have been rejected, he will almost invariably recede from his former action, and allow the case.

Advantages to Inventors on the Pacific Coast.

The firm of DEWEY & CO., (continuously editors and publishers of the MINING AND SCIENTIFIC PRESS, nearly from its early commencement in 1860), offer comparatively far better facilities to the local inventors of the Pacific States and Territories, than are possessed by any other agents in America. Members of the firm give personal attention to the applications entrusted to their care. They have been longer in practice in patent soliciting than most agents who are still personally engaged in the business. They have secured more U. S. and foreign patents in the past 20 years (with very few exceptions) than any other firm still existing. Their practice has been so successful and long continued that the great majority of inventions on this side of the American continent have been patented through their agency, thus affording them great and valuable experience, by thorough information of the true principles and points of novelty in the inventions, whether general in character or peculiarly local to this coast.

The extensive business combination and experience of this firm is undoubtedly one of the most fortunate in existence for affording inventors prompt and reliable advice and the best possible facilities for securing their full patent rights with safety and dispatch at uniformly reasonable rates.

Every patentee of a worthy invention is guaranteed the gratuitous publication of a clearly-stated and correct description of his invention in one or more of our influential and reliable newspapers, affording just the circulation that is best calculated to widely inform the class of readers most specially interested in the subject of his invention.

Saving of Time, Etc.

Inventors on this coast will find that owing to our familiarity with inventions and local affairs of this coast, we can more readily and fully comprehend their wants, and thus save much of the time ordinarily consumed in preliminary writing back and forth when distant agencies are employed.

Caveats.

A Caveat is a confidential communication made to the Patent Office, and is therefore filed within its secret archives. The privilege secured under a caveat is, that it entitles the caveator to receive notice, for a period of one year, of any application for a patent subsequently filed, and which is adjudged to be novel, and is likely to interfere with the invention described in the caveat, and the caveator is then required to complete his application for a patent within three months from the date of said notice. Caveat papers should be very carefully prepared. Our fee for the service varies from $10 to $20. The Government fee is $10 additional.

To enable us to prepare caveat papers, we only require a sketch and description of the invention.

Rejected Applications.

Inventors who have rejected cases (prepared either by themselves, or for them by other agents), who desire to ascertain their prospects of success by further efforts, are invited to avail themselves of our unrivaled facilities for securing favorable results. We have been successful in securing Letters Patent in many previously abandoned cases. Our terms are always reasonable.

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GEO. H. STRONG. W. B. EWER. A. T. DEWEY.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

The Standard Prœparturiens.

EDITORS PRESS:—In reply to an article of mine on the Juglans Prœparturiens, well-known in France as having been "originated" by the eminent pomologist, Andre Leroy, of Angers, Mr. John Rock, the Santa Clara nurseryman, alluded to in my letter, was kind enough in a late issue of the PRESS, to tell us how he came to apply Leroy's name of Prœparturiens to his little dwarf pot-walnut; and to prove his point he quoted Downing, of New York, Hogg, of London, and Rock, of San Jose. Mr. Rock, by producing such authorities, proved conclusively to the readers of the PRESS that, as far as the wrong use of that name, Prœparturiens, is concerned, he could not be held responsible. That was all right. But in trying to prove too much, the Santa Clara county nurseryman got badly mired. After quoting the above authorities, he says: "It is really needless to add anything in the way of comment to the authorities above-mentioned." But you are mistaken, Mr. Rock, for I think it is very needful to comment on the authorities referred to by you; and do not think that I am getting too inquisitive for asking you where, and when, and by whom that name of Prœparturiens was given to that dwarf species, originated, it seems, in America? That is very needful, mind you. But, while in search of authorities, if Mr. Rock, after crossing the Atlantic to hunt up Mr. Hogg in London, had just crossed over the British channel—only a three hours' trip—he had landed in France, the very country where the word Prœparturiens was applied to a walnut for the first time. By whom, when and where? Well, by Mr. Andre Leroy, of Angers, a pomologist of the highest authority and fame, and who, in 1837, produced, originated and propagated, with more or less success, the early-bearing, precocious, fertile, hardy walnut, to which he himself gave the name of "Juglans Prœparturiens." Now, if not satisfied with the details given to him by Mr. Leroy's sons, the eminent pomologist having died three years ago, Mr. Rock would be at liberty to consult any French works on pomology, in regard to that variety of walnut, like the "Bon Jardinier," a standard work, edited by some of the most renowned horticulturists of France, among them Vilmorin, Naudin, Decaisne, Pepin; or "Le Noyer" (the walnut), by Huard du Plessis; or "Fruit and Fruit Trees" by L. de Bavay, etc.; and last, if not first, the "Dictionary of Pomology," by Andre Leroy, of Angers, the most complete work of that kind ever published, a work in six volumes, grand 8vo., giving the description and history of 1,755 varieties of fruit, with 7,000 synonyms, with a cut for each variety; a work that took Mr. Leroy 17 years of constant labor to compose. If, having done that, and consulted French authorities as well as American and English ones, Mr. Rock would have been convinced that some unscrupulous parties in the United States had tampered on the name of Prœparturiens and made of Andre Leroy's standard prolific walnut a little bit of a shrub fit to keep in a flower pot, a sad joke on the eminent French pomologist.

The authorities mentioned above are not, however, the only authorities I can show on my side, for I have trees of all sizes and ages, and *in bearing*. And as everybody is welcomed to my place, I hereby invite any of the readers of the PRESS, including Mr. Rock himself, whenever they may be called to this part of the country, by business or some other cause, to call on me, and I will be very glad to receive them and show them, not a lonely Prœparturiens, as the facetious Santa Clara nurseryman would have them to believe, but several thousand of trees, of all sizes; some from Andre Leroy's place, some from somewhere else, but the bulk from my own raising, from nuts grown upon my trees; in a word, California-grown Prœparturiens; and I will not, either, quote to them Downing, Hogg or Rock, but simply show them the trees with their crops of nuts on, which is yet the best kind of authority to show.

I know that it is rather provoking for owners of large and popular nurseries to be compelled to tell their customers that they do not have certain kinds of fruit that can be had in a little mountain nursery. But I cannot help it, and as far as "the" Prœparturiens is concerned (I mean Leroy's standard Prœparturiens, introduced by me in this country over 11 years ago), I will wait patiently, for probably in a very few years people who have procured such trees will be able to tell for themselves, and tell the public, whether the description I give of Leroy's Prœparturiens is correct or not.

I will now close this letter by publicly thanking Mr. John Rock for having called my attention to the spurious Prœparturiens, originated, nobody seems to know where, and neither by whom or when, and I will certainly call the attention of French pomologists and Mr. Leroy's sons to the fraud committed on the illustrious pomologist whose loss was regarded in France as a blow to French horticultural interests.

FELIX GILLET.

Nevada City, Feb. 26, 1882.

THE RURAL PRESS has a beautiful picture of Portland, Or., with the Willamette river in the middle ground and Mt. Hood in the back ground. The PRESS is full of lively letters from live men.—*Oakland Tribune.*

AGRICULTURAL ENGINEER.

Farm Engineering.

[Written for the RURAL PRESS by ELDRO.]

Possibly the title of this article will not bear the test of analysis; probably it is presumption for a new contributor to the RURAL to coin a term, and in order to evade the charge of egotism or something worse—if anything can be worse—I came near putting the caption in quotations. But it is the only term that occurs to me which affords a text in just two words for a brief discourse to farmers on the subject of farm improvements and topics of similar import. Under this queer heading a hundred things requiring system to accomplish may be grouped. But it shall be my aim to mention but a few of the most important.

The settlement of a new farm calls for the exercise of the engineering capacity of the pioneer. He must know where to build his house, his barn, his fences; where to dig his well, to place his chicken-house, his pig-sty, and understand the arrangement of every other detail in order to render his premises attractive. The purchase of a farm previously settled and improved may call for the talent of the farm engineer to set things to rights. The pig-sty may be in the front yard, the chicken-house between the dwelling-house and the public road, the barn stand askew and the doors look askance at the rest of the world. The farmer must "engineer" things so as to make everything harmonize; he must tear down the hen-house or put it on wheels, and move it where it will not be the first object observed by the passer-by; he must locate the pig-sty in a less prominent place; he must put the barn "square with the world;" and indeed, he must overhaul the premises throughout, and do it deftly and quickly, too, lest other work suffer by his attention to this matter of farm engineering.

But not only does the arrangement of a new home or the re-arrangement of an old farm demand the most consummate skill, tact and industry, but the every day affairs of the farm call for a knowledge of mechanics, that would surprise those who are accustomed to regard the farmer as a mere "clod-hopper," whose knowledge of men and things is measured by his acquaintance with his nearest neighbors, and a reasonably correct understanding of the market price of his products. But give those individuals who imagine that it requires no skill to farm an opportunity to test their talents and see how they would succeed in farm engineering.

I would not take one of these brilliant critics (who has attained sufficient knowledge of domestic farm animals to tell a horse from a cow) to a large ranch to test his engineering capacities, for here all he has to do is to go to the barn, a few hours after midnight, wake up the horses, comb them, feed them and after an early breakfast take the team to the field and wait until daylight, so that he can see to drive. Then, if he is philosopher enough to understand the mechanism of a gang plow or cultivator or square harrow, he will manage to get along on a large ranch until his strength fails him. After he is tired of the ranch I want him to come with me to a small farm where I can show him how to make home beautiful, and to arrange the houses, barns, fences and all other buildings; how to make roads, walks, etc., convenient without being displeasing to the eye.

Here is a hill to climb; let us build a grade which shall be convenient, substantial and so constructed as not to interfere with the general harmony of the premises. There is an unsightly ditch cut away by the overflow of turbulent waters; let us devise a means to cheaply, effectively and quickly restore the place to its wonted beauty and bring the water under control. There are a hundred inexpensive ways to make the rural home beautiful, and there are thousands of farmers who are engineers—master farm engineers, as truly as the civil engineer is or should be master of his profession. It costs no more to place buildings in their proper positions than to arrange them as if this were a world of chance, and they had just chanced to drop down into their uncertain positions and the tenants were satisfied to let them remain as chance had placed them. The proper arrangement of everything about the farm is just as easily accomplished as the too frequent hap-hazard way of doing things. If the reader does not believe that he can just as easily make his home beautiful as to make it unsightly and inharmonious, let him try "farm engineering," and he will find that his toil will be more satisfactorily rewarded through systematic effort than by toiling without a plan.

Arrange your buildings as squarely relatively to each other about your country home as if your premises were bounded by streets in a city or town. Destroy and remove that which is unsightly just as you would if you had your home where the city authorities demanded it. Preserve that which is beautiful as if your home were where nature seemed to smile on the work of men's hands in planting only to relieve the dull monotony of piles of brick and stone which make the habitations of busy men in the busy marts of trade. If you have but slender means study how to make the best of it by building for yourself a home rather than a camp where you only stop to rest from toil rather than live for the pleasure of life. Build your house at least tastefully enough to be pleasant; for it will cost no more to conform to rules which will make home beautiful and happy than to put the same material in a misshapen mass upon ill-arranged grounds. Think of this, brother farmers, and my word for it, the satisfaction derived from the added attractiveness of a home arranged with taste and care will repay you a hundred fold for time spent in "farm engineering."

Red Bluff, Cal.

Bluestoning Wheat.

Dr. Schulz, in the last issue of the PACIFIC RURAL PRESS, reiterates his denial of the efficiency of bluestone as a preventive of smut in wheat. He refers to some experience of his own and of some others in warrant of his denial; and these representations may lead to some distrust of the well-tested remedy for a disease that for a time made it questionable if wheat could be successfully grown in this State, and it was only the sulphate of copper application that determined that question affirmatively. Every farmer in this vicinity, from 1852 to 1856, well remembers how things went from bad to worse in the way of wheat growing to smut. Various old-time remedies—lime, brine, urine, wood-ash lye, copperas, (sulphate of iron) and others—were tried without effect, until the efficiency of the bluestone solution treatment was shown by the crop of Mr. Thomas Flournoy, at Danville, in 1856. As has been before stated in these columns, the example of Mr. Flournoy's sound crop that season, incited all farmers of the neighborhood, though they paid from 30 cents to $1 a lb. for the material, to apply bluestone treatment to the seed; in no instance when properly applied was there failure in raising a good sound wheat crop. It was then the practice to soak the seed in the solution over night, which gave the solution time to penetrate through the smut grain sacks and kill the germ of every one of its millions of spore atoms, as well as all those adhering to the exterior of the sound grains. For a number of years the modes of application and results of bluestoning were subjects on which our farmers were greatly interested in comparing notes of observations and experience; and in those first years of its use almost every farmer set apart a little corner or strip of land for seeding with wheat that had not been bluestoned, and we remember no instance reported in which the crop from such seeding was not smut-affected, while that from bluestoned seed was sound.

Why Bluestoning Sometimes Fails.

We well remember an instance in 1857, where the effect of the bluestone seed soaking was somewhat strikingly exemplified, in contrast with the results of neglecting the soaking. It should be remembered that it was very difficult then to obtain seed wheat that was free from smut. In the instance referred to, a valley bottom, some 800 yards in length by a uniform breadth of about 250 yards, was discovered, when the wheat was approaching maturity, to be marked in regular recurrence with transverse smutty streaks across its entire breadth for two-thirds its length, while between these streaks were broader belts of sound wheat, unaffected with smut. The regular recurrence of the sound and smutty belts were found in relative correspondence as to breadth measure, in the proportion of about four acres of sound wheat and two acres of smutty, and was accounted for in this wise: An iron cauldron had been used for the solution in which the seed was soaked; it would hold enough of the solution, renewed from day to day, to cover when swollen, four sacks of seed, and for the first few days' sowing on the strip, four sacks were put in soak each evening, taken out, drained, and sowed the following day. The weather was favorable, the season well advanced, and the renter of the land being anxious to finish the seeding, then crowded the capacity of the cauldron by putting six sacks in every evening, the upper one-third of which, by the swelling of that below, was crowded out of the liquid, with only a surface wetting, insufficient to soak through the smut sacks and destroy the germs of the sporadic smut atoms contained in them.

Thus, from every cauldron came about two sacks of seed containing many dry smut pouches, liable to be broken in rough encounter with clods and harrow, and the still vital germs scattered in contact with the seed grain, or lodged where the feeders of the growing plant might absorb the atomic disease germ. Such, at least, is a theory consistent with observation and scientific facts, so far as they have been demonstrated. It is a theory, too, that accounts for most of the reported exceptional failures in application of the sulphate of copper seed treatment as a smut preventive. The failures, indeed, in nearly or all cases are the result of carelessness, negligence, or the use of an inferior quality of bluestone, and it would prove a great disaster should many of the wheat growers of the State be persuaded by Dr. Schulz to abandon the bluestone treatment of their seed wheat, that the almost universal experience of more than 25 years has proved to be so effective a smut preventive.

Credit Claimed.

We may properly mention here that while Mr. Flournoy is entitled to the credit of first demonstrating in this section the efficacy of the bluestone treatment, the credit of introducing its use in the State in 1854, belongs to another citizen of this county. Mr. George P. Loucks, of Pacheco, at that time a produce commission merchant in San Francisco, and agent for several extensive manufacturing flour mills whose products were greatly deteriorated by the extent to which nearly all the marketed wheat was at that time charged with smut dust. The serious character of this evil was much discussed by millers, produce merchants, and farmers, and all the known or thought of remedies had been tried and had failed, when Mr. Loucks remembered having been told by a Scotch gentleman whom he met while traveling in the West many years before, that a blue vitriol steep of the seed was an effective preventive of smut. He could remember nothing as to the strength of the solution to be used nor the time it was necessary to soak the seed, but was determined to have a trial of the remedy. He accordingly procured a quantity of bluestone and induced some German farmers in Alameda county for whom he was doing business, to give it a trial, the result of which was entirely satisfactory, and a published statement of the fact made in some of the city papers of that day led to its more extensive use the following season, of 1855 and '56, but it was several years before its use became general beyond the bay section counties.

So extensive a reference to and assertion of the utility and effectiveness of the sulphate of copper seed treatment as a smut preventive, would hardly seem warranted were it not that so intelligent a disputant of its efficacy as Dr. Schulz is likely to influence many into the abandonment of the well-proved and safe practice which too many neglect or apply very carelessly.—*Contra Costa Gazette.*

The Victor Mower.

Our readers will not fail to notice the advertisement of the Victor mower now being published in the PRESS. The users of agricultural machinery should always be on the alert to examine the claims of all new pieces of farm machinery, to see if valuable improvements have been introduced which will enable them to do cheaper and quicker work. The Victor is presented by the Judson Horse Nail Co., of San Francisco, in the belief that it will be found of especial value to California farmers, and certainly its success at the East entitles it to attention and trial here. The following are some of the claims made for the Victor by the manufacturers:

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THE *North American Review* for March presents a striking array of articles, every one of which possesses the characteristic of contemporaneous interest. First we have a contribution from Senator George F. Edmunds, on "The Conduct of the Guiteau Trial." Ex-Minister Edward F. Noyes communicates the results of his observations of political affairs in France under the title, "The Progress of the French Republic." In "Trial by Jury," Judge Edward A. Thomas describes the social conditions under which our jury system had its origin, and notes its defects in view of the altered relations of modern life. Mr. John Fiske makes an able and ingenious analysis of that great intellectual movement, the Reformation, educing therefrom the "True Lesson of Protestantism." In "Law for the Indians," the Rev. Wm. Justin Harsha endeavors to demonstrate that the one rational and effectual cure for our Indian troubles is to extend the jurisdiction of the civil and criminal courts over all the social relations of the red man. Prof. A. B. Palmer writes on the "Fallacies of Homeopathy." Finally, the Hon. Neal Dow contributes an article on the "Results of Prohibitory Legislation," demonstrating the success of the efforts to suppress the liquor traffic in Maine.

HOLSTEIN HERD BOOK.—We have received a copy of Vol. V of the Holstein Herd Book. This publication is by the Holstein Breeders' Association of America, and in its several volumes contains a record of all the Holstein cattle in the United States, which have been approved and admitted for registry under the by-laws and resolutions of the association. It is a handsome volume, large 8 vo, fully illustrated with Holstein portraits and is prefaced by an excellent sketch of the breed and its dairy deeds. The publication should be in the hands of every Holstein breeder. The secretary of the Association is T. B. Wales, Jr., Iowa City, Iowa, to whom all communications relating to the Herd Book can be addressed.

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I manufacture two sizes, Nos. 2 and 3. No. 2 is 3 to 4-inch, for grape vine settings especially. No. 3 is 5-inch, for post holes and tree-planting, combining the crowbar, post auger and spade

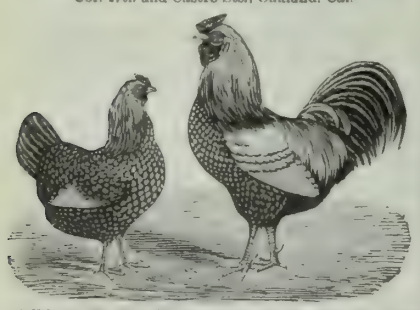
PRICES.—No. 2, $5. No 3, $6.

I refer to the following parties who, after practical test, have adopted them. Juan Galleges, Mission San Jose; P. Sainsevain, pioneer viticulturist, Mission San Jose; Fisher & Megahan, Mission San Jose; J. L. Beard, Regent of the State University, Centreville; H. G. Ellsworth, Niles; Chas. A. Wetmore, State Viticultural Commissioner, San Francisco; Governor Stanford, Tehama Co.; J. West Martin, President Union Bank, Oakland; Judge M. B. Miller, Nicasio, Marin Co.; G. G. Briggs, Davisville, Yolo Co.; P. B. Cornwall, President Black Diamond Coal Co.; Tool & Andrews, Napa; E. Waid Hutchins, Cordelia, Solano Co.; W. J. Chiles, St. Helena, Napa Co.; Chas. Stiller, San Jose, Santa Clara Co.; J. G. Laduke, Batavia, Solano Co.; T. H. Safford, Willows Colusa Co.; Geo. West, Stockton, San Joaquin Co., and Fresno, Fresno Co.; J. S. Burpey, Vacaville, Solano Co. In ordering address

J. STANLEY,
Mission San Jose, Alameda Co., Cal.

Oakland Poultry Yards.

Cor. 17th and Castro Sts., Oakland, Cal.



GEO. B. BAYLEY, Importer and Breeder of all the best known and most profitable varieties of Land and Water Fowls. Brahmas, Cochins, Houdans, Leghorns, Polish Hamburgs, Bronze Turkeys, and the new fowl, American Sebright, or Eureka. Agent for the Pacific Incubator; capacity, 500 eggs. Guaranteed to hatch 90% of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season. Price, $30. For further particulars send stamp for illustrated circular to GEO. B. BAYLEY, Box 1771, San Francisco.

ITALIAN SHEEP WASH.

EXTRACT OF TOBACCO

Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

SCAB OF THE SHEEP.

The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

For particulars apply to CHAS. DUISENBERG & CO. Sole Agents, 314 Sacramento St., San Francisco.

MERRILL'S PATENT REIN HOLDER.

This is a sure and certain preventative to keep horses from running away. **Price $2.50.** Address W. P. MERRILL, Florin, Sacramento Co., Cal.

Good Land and Sure Crops.

There has been steady and tolerably rapid advancement made in the growth of a majority of the towns in Colusa, Butte, Tehama and Shasta counties. Especially is this so in the agricultural districts where the land produces at least fair crops in all seasons—wet or dry—as does the land on the Reading Ranch. Those looking for homes in California where diversified farming will pay every year; where wood and water are plenty and easy to be obtained, and other desirable advantages are to be had, should address the proprietor of the Reading Grant.

Some 14,000 out of 26,000 acres of the grant remain for sale at comparatively low rates, in quantities to suit purchasers, on easy terms. Prices range from $5 to $30 per acre. The tract is between two and three miles wide, with the Northern Division of the C. P. R. R. passing centrally through its entire length. Send postage stamp for free circulars containing information about Shasta County and these lands, to the proprietor of Reading Ranch.

EDWARD FRISBIE,
Anderson, Shasta County, Cal.

Moore's Prepared

SQUIRREL

POISON.

The most successful Poison in use for Squirrel Killing

C. E. WILLIAMS & CO., Proprietors,
STOCKTON, CAL.

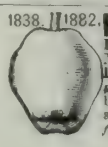
Moore's Sulphur Dip; Safe, Sure and Cheap preparation for the cure of Scab in Sheep.

Nash Bros.'s Pulverizing Harrow and Clod Crusher.

The Best Implement for Pulverizing, Harrowing, Cultivating; using steel curved teeth, and can be regulated to any depth.

GARDINER'S HAY ELEVATOR AND CARRIER This is Automatic and Self-regulating, raising hay or straw to any hight, and carries to any desired point. It will pay for itself in one season. L. D. BURGESS, Agent, Rio Vista, Cal.

1838. 1882.



POMONA NURSERY!

KIEFFER'S HYBRID PEARS, Manchester, Mt. Vernon and Sharpless Strawberries. Cuthbert, Souhegan, and Gregg Raspberries. Black berries, Grapes and Currents. Fruits and Flowers, Trees & Plants. *Catalogue free.* WM. PARRY, Parry P. O., N. J.

THE

WASHINGTON IRRIGATED COLONY!

Has been purchased entire (the 4,100 acres unsold), by the well-known vineyardist,

G. G. BRIGGS.

No Colony in the State has now so promising a future, and none offer so great advantages for profitable investment. The extensive improvements of the past year will be more than doubled during the coming summer. In addition to the usual sales, lands are offered for planting in vineyards on shares. Here are grand opportunities for industrious men, as well as for capitalists

J. W. NORTH, General Agent.
Oleander, Fresno County, California.

M. COOKE S. J. COOKE

PIONEER BOX FACTORY.

Corner of Front and M Streets, Sacramento.

ALL KINDS OF

Fruit and Packing Boxes Made to Order, AND IN SHOOKS.

☞ Communications Promptly Attended to. ☜

COOKE & SONS. Successors to COOKE & GREGORY

KNOW THYSELF.

GOLD MEDAL AWARDED

the Author. A new and great Medical Work, warranted the best and cheapest, indispensable to every man, entitled the "Science of Life or Self-Preservation;" bound in finest French muslin, embossed, full gilt, 300 pp. Contains beautiful steel engravings; 125 prescriptions. Price, only $1.25, sent by mail; illustrated sample, 6 cents. Send now. Address Peabody Medical Institute or Dr W. H. PARKER, No. 4 Bulfinch street Boston.

---

40 Comic Transparent Cards, name on, 10 cents, or 50 fine Chromos, 10 cents, Wise & Co., Clintonville, Ct

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Chicago Screw Pulverizer.

The best machine in the world for cross-plowing, summer-fallow, volunteering, seeding summer-fallow and working tule, sod and salt marsh lands

CHICAGO TONGUE

Scraper and Ditcher.

50,000 IN USE.

The Cheapest and Best.

☞ Send for Descriptive Circular, terms, etc. Address

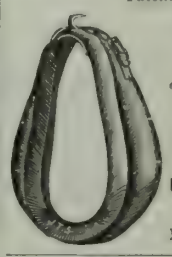
H. P. NICHOLS,
Stockton, - - - - California.

J. T. STOLL'S

OPEN TOP

IMPROVED HORSE COLLAR

Patented Jan 18th, 1881.



It saves your horse's neck.
It is the best Collar in use.
It can be adjusted to any shape or any animal's neck.

☞ Send for sample. ☜

JOHN T. STOLL,
Harness and Saddle Manufacturer,
NO. 610 K ST., SACRAMENTO

JACKS FOR SALE.

We have just imported a carload of

THOROUGHBRED KENTUCKY AND MISSOURI

JACKS,

From yearlings up to nearly 16 hands high. Will guarantee them sound, good performers, and sure foal-getters.

Also, for sale, one THOROUGHBRED STALLION, "Young Lodi," sired by "Old Lodi," and he by "Old Lexington," of Kentucky.

Price, from $300 to $1,000.

Crow's Landing (near Modesto), Stanislaus Co., Cal.

A. M. & E. W. CROW.

February 1, 1882.

PENNOCK'S PATENT ROAD MACHINE.

KEEPS THE HIGHWAYS FIVE TIMES BETTER FOR HALF THE PRESENT COST IN CITY OR COUNTRY. PARTICULARS FREE. MACHINES SENT ON TRIAL.

Manufacturers of "Matchless" Dump-Scraper.

S. PENNOCK & SONS' CO.,
Kennett Square, Pa., and Fort Wayne, Ind.

Woolsey's Steam Generator and Power and Steam Cheese Vat for Ranchmen and Dairies.

This is the Cheapest and Best Steam Generator ever invented; and the cheese vat is so constructed that the temperature can be kept even and steady.

WOOLSEY'S TARPOLA GOPHER TRAP, never fails to kill all varmints when properly set. Price $2.50. WOOLSEY'S IMPROVED LAWN SPRINKLER, Cheapest and Best in use. Price, $5, Address JOHN S. WOOLSEY, Inventor and Manufacturer, Gilroy, Cal.

The Call at the Produce Exchange.

The San Francisco Produce Exchange introduced the call system Monday morning very successfully. Its room on the corner of Clay and Davis Sts. was crowded with interested spectators, surrounding the members, who occupied the central space in front of the caller's exchange.

The time appointed for the opening having arrived, H. A. Mayhew, the Chairman of the Call Committee, mounted a chair at the caller's desk, and said:

Gentlemen of the Exchange: To-day we strike the initial blow and lay the corner-stone of our new departure. The success or failure is in your hands. Your Board of Directors, at your request, appointed seven of your body to make rules and manage the Call Board. The committee, knowing your desire to commence at once, acted promptly and gave you the shortest and plainest rules po sible—sufficient to enable you to make a beginning, and they expect experience will teach all of us what we shall need and require to carry on the business to a successful issue. In all great trade centers this system has found favor. Shrewd men have been forced to admit that, with the increase of business, a demand has come for more perfect forms and ways of doing the same. Exchanges in other places have their grain, wool, flour, provision and cotton call boards, as the magnitude of their transactions required them. As harmony exists among the members of our Exchange, we trust that under the new management the business may be so increased that it will be not only advisable, but that we shall be compelled to move to more commodious and central quarters. We are satisfied that the new system will stimulate and create a pride among producers of this State to try and make all their produce conform to the highest grades established by this Exchange. Also that the warehousemen through the State will class all grain when received, and keep a record of the same, because the Grain Inspector of this Exchange will require such information to assist him in inspection, and before he will place his official stamp upon the same. To-day California and Oregon have three-fifths of all the wheat afloat to Europe from the United States. The Call Committee ask you all to assist in making your already successful institution a greater medium of doing business, and what the New York Produce Exchange is in the East let this Exchange be in the land of the setting sun, the great produce center of the Pacific slope. I now launch the new ship into your midst. She rates A No. 1. Man and equip her, steer her clear of the shoals and quicksands, make her passages short, with good returns to her owners.

Mr. Mayhew concluded by introducing A. H. Lissak, who, he said, would be the caller of the Exchange. Mr. Lissak, before opening the call, remarked as follows:

Gentlemen: After the remarks made by our President, there is very little for me to say. I am satisfied in my own mind that the commencement this morning is to lead to a very great success; that it is going to advance the business of grain dealing to an extent almost beyond calculation. We must accept this new departure as an accomplished fact. Revolutions never go backward. This will be the method of transacting the grain business on this coast henceforward. This movement is sure to be a success, and even if it is not as successful at first as we anticipate, I am satisfied that it will require nothing but time to prove that this is the only method of doing business. The time for speechifying has gone; now is the time for action, and, therefore, I will commence by calling the list.

Wheat.

Extra Choice Wheat. Shall be sound, plump, white, well cleaned and above No. 1 Standard.

No. 1 White Wheat. Produce Exchange Standard.

No. 2 White Wheat. Produce Exchange Standard.

No. 1 Amber Wheat. Produce Exchange Standard.

No. 2 Amber Wheat. Produce Exchange Standard.

No. 1 Sonora Wheat. Produce Exchange Standard.

No. 2 Sonora Wheat. Produce Exchange Standard.

No. 1 Odessa Wheat. Shall be sound, plump, clean and free from other varieties.

No 2 Odessa Wheat. Shall be sound, reasonably clean and reasonably free from other varieties of wheat.

No. 3 Wheat. Shall be all very smutty, shrunken, dark or badly mixed with other grain, or for any other cause unfit for higher grades.

Rejected. All damaged, or for any other cause unfit for higher grades.

All Wheat sold shall be of last California crop year, unless otherwise specified. If Oregon or Walla Walla to be so named.

Barley.

No. 1 Barley. Shall be plump, bright, sound, clean, reasonably unbroken and free from other grain and seed, not weighing less than 48 lbs to the measured bushel.

No. 1 Barley, Class A. Shall be bright, sound, clean, reasonably unbroken and free from other grain, and seed not weighing less than 47 lbs to the measured bushel.

No. 1 Barley, Class B. Shall be bright, sound, clean, reasonably unbroken and free from other grain and seed, not weighing less than 46 lbs to the measured bushel.

No. 1 Barley, Class C. Shall be bright, sound, clean, reasonably unbroken and free from other grain and seed weighing not less than 45 lbs to the measured bushel.

No 1 Barley, Class D. Shall be of fair color reasonably clean and unbroken, weighing not less than 47 lbs to the measured bushel.

No. 2 Barley. Shall be sound, slightly stained or off-color, reasonably free from other grain, or for any other cause that renders it unfit for the higher grades.

No. 3 Barley. Shall be all shrunken, dark or badly mixed with other grain, or for any other cause unfit for higher grades.

Rejected Barley. All damaged grain, or otherwise unfit for higher grades.

Chevalier Barley.

Ex. Choice Chevalier Barley. Shall be plump, bright, sound, unbroken, free from other grain and seed, not weighing less than 54 lbs to the measured bushel.

No. 1 Chevalier Barley. Shall be plump, bright, sound, clean, reasonably unbroken and free from other grain and seed, not weighing less than 52 lbs to the measured bushel.

No. 2 Chevalier Barley. Shall be of fair color, reasonably clean and sound, not weighing less than 50 lbs to the measured bushel.

No. 3 Chevalier Barley. Shall include all grades except Rejected, or for any other cause unfit to be classed in Nos. 1 & 2.

Rejected. Shall be all damaged, dirty or from any cause renders it unfit for the higher grades.

Oats.

Ex. Choice Oats. Shall be white, sound, free from all other grains and seed, not weighing less than 34 lbs to the bushel.

No. 1 Oats. Shall be principally white, sound, heavy and reasonably free from other grains and seed.

No. 2 Oats. Shall be principally white, reasonably clean and fair weight.

No. 3 Oats. May be very light or mixed with other grain, or otherwise unfit for the higher grades.

Rejected. Includes all damp, dirty, musty or unsound oats.

Rye.

No. 1 Rye. Shall be plump, sound and well cleaned.

No. 2 Rye. Shall be sound, reasonably clean and reasonably free from other grain.

Corn.

No. 1 Large Yellow Corn. Shall be dry, sound, well cleaned and unmixed.

No. 2 Large Yellow Corn. May be slightly mixed, reasonably sound and reasonably clean.

No. 1 Red Corn. Shall be dry, sound, well cleaned and unmixed.

No. 2 Red Corn. May be slightly mixed, reasonably sound and reasonably clean.

No. 1 Large White Corn. Shall be dry, sound, well cleaned and unmixed.

No. 2 Large White Corn. May be slightly mixed, reasonably sound and reasonably clean.

No. 1 Small Yellow Corn. Shall be dry, sound, well cleaned and unmixed.

No. 2 Small Yellow Corn. May be slightly mixed, reasonably sound and reasonably clean.

No. 1 Small White Corn. Shall be dry, sound, well cleaned and unmixed.

No 2 Small White Corn. May be slightly mixed, reasonably sound and reasonably clean.

Rejected. All damaged, or dirty, or otherwise unfit for higher grade.

All the varieties of grain sold, must be in good merchantable sacks.

Flour.

Flour shall be sold by brand or grade; to be of California manufacture; when of Oregon or other manufacture must be so named. A barrel shall be deemed to weigh 196 lbs in sacks, when in other packages to weigh 196 lbs net, and no allowance shall be made for any over weight.

All flour sold must be in new or merchantable one-quarter sacks, or otherwise specified at time of sale.

Beans.

No. 1 Beans. Shall be sold by variety. Must be plump, sound, clean, of one color, and all of the variety sold of last California crop year, and in customary merchantable sacks.

Potatoes.

No. 1 Potatoes. Shall be sold by variety and must be merchantable size, sound and in good burlap or gunny sacks.

Bran,

.....

Hay.

No. 1 Wheat Hay. Shall be a good green color, well cured, reasonably clean, and free from stains.

No. 2 Wheat Hay. Shall be fair color, and fairly clean.

No. 1 Tame Oat Hay. Shall be good green color, well cured and reasonably clean.

No. 2 Tame Oat Hay. Shall be fair color, fairly clean.

No. 1 Wild Oat Hay. Shall be good green color, well cured and reasonably clean.

No. 2 Wild Oat Hay. Shall be fair color, and fairly clean.

No. 1 Alfalfa Hay. Shall be clean, green and well cured.

No. 2 Alfalfa Hay. First cutting, reasonably clean.

No. 3 Hay. Shall be all feed hay except,—Tule—not included in higher grades.

Sales of Hay can be made of large or small bales.

Hops.

.....

Grain Sacks.

Shall be sold by trade mark and size. Duty paid and from locality made, unless otherwise specified. of standard weight, avg. 12oz. for 22x36 sks. and in lots not less than 25,000.

Quicksilver.

.....

H. A. MAYHEW, Chairman.

SHIPPING OREGON PINE EAST.—There has just been forwarded from San Francisco to the La France Steam Fire Engine Company, of Elmira, New York, by E. A. Scott & Co., of San Francisco, representatives of the La France Co. for this coast, two carloads of Oregon pine ship planks for the construction of fire-ladders. This is believed to be the first overland shipment of Oregon pine ever made. The La France Co., in addition to their present extensive business, is hereafter to carry on the exclusive manufacture of the Hayes Fire Truck for the United States. This is another flattering tribute from the East to the Golden West, both in recognition of our great natural resources, and the superiority of a California invention which is destined to achieve a world-wide fame. D. D. Hayes, of San Francisco, the inventor and proprietor of the Hayes Fire Truck, is now en route East to assist in starting the new works. —*Sacramento Bee.*

SANTA CRUZ COUNTY.—One of the best local real-estate journals ever published in this State is the *California Real Estate Exchange and Mart*, just established at Santa Cruz by Henry Meyrick. It has excellent descriptions of the county climatically, agriculturally, geographically, and otherwise, and the accounts are temperate and truthful, and quite free from the florid extravagance which frequently figures in real-estate literature. The *Exchange and Mart* offers an attractive list of lands for sale, and should be consulted by home seekers.

THE Healdsburg *Flag* says many citizens are digging up their gum trees. At Anson Goodspeed's lot the roots ran a distance of 40 ft. and interfered with his well. They will run 60 ft. in eight years, greatly exhausting the soil of its moisture.

Tulare County Notes.

Rainfall and Flowing Wells.

EDITORS PRESS:—During no winter for 10 years, or longer, has there been such marked anxiety and uncertainty about the character of a season as in the present one. All the earlier rains have been lacking, on which are usually based the farmer's hopes for paying crops and sufficient pasturage. With only an inch and a quarter of rain to the end of January, and not enough at any time to bring up grain or wild feed; with fields and plains as bare of vegetation during the first half of February as they are in midsummer; with stock lean and some already dying for want of sufficient feed, it began to look as if ruin was staring us in the face. For, even on irrigable lands, there was as yet no certainty of sufficient water in the ditches in the spring months to insure even average crops. Never, perhaps, have the many industrious and thrifty ranchers of Tulare and Fresno counties been more gloomy. But, since the 10th inst., we have had, for the month of February alone, 1.68 inches. This has entirely changed matters. The late storm of the 26th was a warm, slow, soaking rain of 0.47 of an inch, and now all vegetation is rapidly springing into life. The fields and plains are already beginning to look refreshingly green. The excessive drouth has made the season unusually backward, but some almond trees are already in full bloom.

Observations Here for Three Years,

Since the rain gauge of the State Engineer's department was placed at Hanford in February, 1879, enable us to show your readers by exact figures, from measurements carefully made and recorded, how our rainfall since then has varied:

1879.		1879-'80.	1880-'81.	1881-'82.
Feb. 15th	0 01	Aug. 0 00	0 00	0.05
Mar	0 42	Sept. 0.00	0.00	0.00
April	0.87	Oct. 0.93	0.00	0.25
May	0 16	Nov. 0.94	0.47	0.30
June	0.21	Dec. 2.43	0.53	0 11
	——	Jan. 1.09	3 25	0 54
Total	1.67	Feb. 3.45	0 40	1 68
		Mar. 0 47	1.99	——
		Apr. 2.80	1.25	2 93
		May. 0 21	0.08	
			——	——
		Total 12.32	13.97	

This statement shows a striking contrast between the rains of this year and 1878-'79, and the abundant rainfalls of 1879 '80 and 1880-'81. Indeed, this season is much like that three years ago, except that present February rains are much more abundant, and have brought us the great advantage of coming just when most needed. You see we have even had more than four times as much rain this month as fell last February. It is this encouraging fact especially that gives so good a prospect now of fair crops on all lands that can be irrigated in the next three months. Our late rains secure a good stand generally, and carry forward the crops to the point where irrigation saves and matures them. What farther rain we shall have in March, April and May is yet a mystery, of course, but the chances are in favor of at least one or two more inches. Hence, while this must now be one of our seasons of smallest rainfall, we are likely to have more than in the dry season of 1878-79. Just what the rain at Hanford amounted to that year, we can never know exactly, as the gauge was located here only in February, 1879, but judging from the record of the Signal Service gauge at Visalia, 20 miles east of this, there was probably enough here before February 15th to make nearly or quite three inches for that entire season.

Another Encouragement.

For our farmers on the large area of finely irrigated lands here, is the fact that even that very dry season the Mussel Slough district had 18,000 tons of fine wheat to ship. It is rather premature to estimate what the three stations of Lemoore, Hanford and Cross Creek will have to ship of this year's crop, but present prospects indicate at least 20,000 tons of new wheat, to say nothing of a large amount of old wheat still stored in our warehouses from the crops of the last two seasons.

One of the most fortunate features for the grain raisers, stock raisers, orchardists and vine growers of Tulare county, particularly for the many new settlers around Tulare City, is the successful boring, during the past fall and winter, of

Seven Fine Flowing Wells.

Three sets of boring tools are constantly at work in the same vicinity sinking others as rapidly as possible. These are under the management of Mr. W. G. Spence, formerly of Oakland, Messrs. Littlefield & Wiggins, from Contra Costa county, and the Mull Bros, from Merced. Mr. Spence has bored three of the successful wells, and has the good fortune to have struck the largest flow, while Messrs. Littlefield & Wiggins have the credit of boring the deepest one. These new wells vary in depth from a little more than 200 ft. to 462 ft., all being 7-inch bore. The best flow, and perhaps the largest in the State, is called the "Enterprise," on one of Paige & Morton's ranches, about four miles southwest of Tulare City. Its flow, no doubt, exceeds 300,000 gallons every 24 hours, and has been estimated much higher. The owners have made two circular earthen reservoirs to hold its water, one about 100 ft. in diameter, the other about 200 ft. They can probably irrigate effectively with it in a season like this some 40 acres of orchard, vineyard, alfalfa and garden. The flow of another on their ranch, two miles west of Tulare City, is about 60,000 gallons in 24 hours; its depth is 295 ft. The temperature of the water from these two wells is 70° Fahr., and it is perfectly pure and tasteless, and without any colored sediment. The well of M. Premo, some four miles west of the "Enterprise," and about ten miles southeast of Hanford, in a direct line, is

Four Hundred and Sixty-two Feet Deep.

Its water is strongly impregnated with sulphur, makes a white precipitate, and is 72° Fahr. The auger in this deep well passed for 334 ft. through alternate layers of yellow sand and clay of various depths, and a streak or two of gray sand, and after that through 128 ft. of successive strata of blue clay and sand. Its flow is not far from 75,000 gallons in 24 hours. Your readers will be posted on these important interests as they progress. J. W. A. WRIGHT.

Hanford, Feb. 28th.

Canvassing Agents.

We want several canvassing agents who will make it their business to solicit subscriptions and advertising for our first-class progressive newspapers. Men of ability and experience can secure good pay and permanent employment. Send references and state your past occupation, etc., to the publishers of this paper.

Remedy for the Scab of the Sheep.

It is well known among the wool growers and sheep raisers nearly all over the world that a sure remedy for the curing of the scab of the sheep is of the greatest importance to them. If the sheep are kept clean, and by frequent dipping, washing and spotting, the scab is kept away from them; it can only be reasonably expected that the wool which is produced will be superior to an article which is grown on sheep not properly attended to in this respect. Many remedies are in existence for the purpose of cleaning and washing of the sheep, but the great difficulty with mostly all of them has been either that they are to a certain extent injurious to the growing wool, or that the labor connected with its application is too complicated and more or less subject to damaging results by inexperienced hands, or that the cost price of the better class of the remedies is too high to admit of general and more frequent use.

In connection with the foregoing remarks our attention has been called to an advertisement in these columns, viz: Italian Sheep Wash; and we have taken occasion to call on the agents, Messrs. Chas. Duisenberg & Co., San Francisco, to ascertain some particulars in regard thereto. We received the information that the Italian Sheep Wash is a chemical preparation of an extract of tobacco, free from poison, prepared by the Italian Government Camp, in Italy. From a certificate of an analysis made by John J. J. Kyle, Professor of Chemistry, we ascertained that the extract is a very dense liquid of a dark color, easily soluble in either hot or cold water, is entirely free from all poisonous mineral compounds, such as those of arsenic, mercury and copper, neither does it contain molasses or any inert substances except those which are the natural constituents of tobacco juice.

The Italian Sheep Wash has produced among sheep raisers in different parts in Europe, Africa, Australia and the Argentine Republic such a general surprise on account of the thorough practicability and efficiency in curing the scab of the sheep as well as being an excellent Sheep Dip, that the demand for the article has increased within the last two years to an enormous extent, also for the very reason that the cost price of the same is decidedly less expensive than most all the other remedies known. From the contents of the testimonials of several responsible wool growers and sheep raisers in different counties in this State, which are in the hands of Messrs. Chas. Duisenberg & Co., we have convinced ourselves that the article has undergone here already several severe tests, which have resulted in perfect satisfaction, and only tend to prove that the Italian Sheep Wash is all the agents claim for it.

ANDERSON.—The first number of the Anderson *Enterprise*, issued by J. W. Malone, states: Our town is situated on the California and Oregon R. R. 12 miles south of Redding, 6 north of Cottonwood, 11 from Millville, and 14 from Igo. It is the center of the most productive portion of Shasta county, and contains a population of about 300. The town was first established by Bedford & Wright. About 200 yards below the town is the oldest place in the vicinity, known as the American Ranch, and containing about 250 acres. It was settled in an early day by E. Anderson, the present owner, and has now a splendid orchard, vineyard, etc. The town boasts of three stores, all carrying a full line of goods. The oldest established is that of J. F. Bedford; the next is that of Beecher & Champlin, and the third is that of J. P. Wright. Geo Anderson keeps as good an hotel as there is to be found in the northern country. Two blacksmith shops, one wagon shop, one harness shop, five saloons, and last, but not least, one of the best flouring mills, completed last August by Messrs. Bedford & Swett. We noticed the appearance of 7,000 grape cuttings on Monday night, for Mr. Lowe, of the Red Land Farm. Unquestionably, the rising interest of most value in this State is the growing of fruit, including the vine, and we shall endeavor in future issues to show the adaptability of lands in our vicinity for that purpose.

Enterprise Windmills.

The genuine Enterprise windmills are furnished for the Pacific Coast trade through Horton & Kennedy only. All genuine Enterprise mills bear the "Enterprise Co." stamp, and all mills of this make on the Pacific Coast, whether of the latest pattern or of those sold during the past twelve years, came from this agency. We make this statement owing to the fact that others, knowing of the superiority of these goods, are endeavoring to use the reputation of them to build trade for other and inferior mills—having even gone so far as to pervert to their use testimonials given for our (the Enterprise) mills. Our friends will therefore please bear in mind that the only genuine Enterprise mills have the "Enterprise Co." stamp on. Mills without this stamp on are not genuine; that supplies of the genuine Enterprise mill for the Pacific Coast come only through us; and that anyone who would lead to a belief otherwise, misrepresents us.

Respectfully, HORTON & KENNEDY.

General office and supplies (as always before), Livermore, Alameda county, Cal. San Francisco agency, Linforth, Rice & Co., 323 and 325 Market St., S. F.

IMPERIAL EGG FOOD.

Will make your Hens Lay, keep them in the best possible condition and ward off disease. When fed according to directions, sick and drooping fowls are never seen. It furnishes the needed material for forming bone, muscle and feathers, and is

Invaluable for Young Chicks and Moulting Fowls. It comes put up in suitable sized packages, and being a powder, is easily mixed with the customary feed. Give it a trial. Send Stamp for Circular and Testimonials.

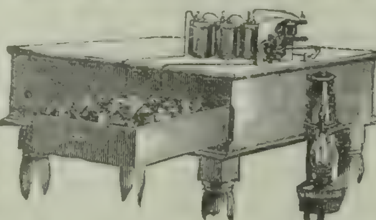
Price.—Single pound, 50 cents; Two and a half pounds, $1.00; Six pounds, $2.00; 25 pound keg, $6.25. Address,

G. G. WICKSON,
General Pacific Coast Agt
No. 319 Market St.,
San Francisco,
California.

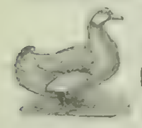
MONEY IN CHICKENS AND EGGS.

—The—Eclipse Self Regulating Incubators are now in actual use in most parts of this State, and giving general satisfaction. They are a success, and being such are invaluable to all who attempt to raise chickens; are easy to manage, and cost merely a trifle to keep in operation, and will do much better work than can be done with hens, with a small portion of the labor and risk.

☞ The "ECLIPSE" is the only entirely self regulating incubator known; is the only one that will bear investigating, so it is the only safe one to purchase. Send stamp for Circular of California Testimonials (not Eastern.)



The Eclipse Self-Regulating Incubator.



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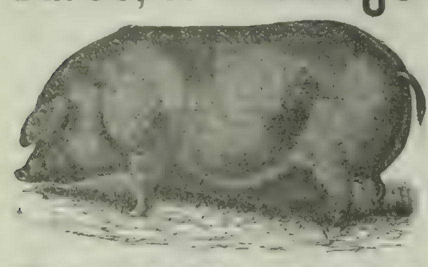
I have a large stock of the above varieties for Sale Cheap, considering the quality of stock. For further information, send 3 cent stamp for new circular and price list to **R. G. HEAD, Napa, Cal.**

Duroc, or Red Hogs.



The undersigned are making a specialty of raising this celebrated breed of hogs for breeding purposes. They are gentle, thrifty and of very rapid growth, and better adapted to this climate than any other breed of hogs. We have hogs of this breed now upon our ranch 11 months old, weighing over 400 lbs. each. N. W. Spaulding, U. S. sub-Treasurer, San Francisco, killed one of these hogs Dec 14 1881, at the age of 16 months, that weighed 873 lbs. gross and 784 lbs. dressed.

On Dec. 22, 1881 Messrs. Zan, Hellman, Strouse & Co., of the Bay City market, S. F., killed one weighing 1018 lbs. net when dressed, 1 year and 7 months old. We are prepared now to ship to any part of this State these pigs 6 to 12 weeks of age. For prices and circulars address,

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Dish-Faced Berkshire Pigs, Poland China Pigs, Jersey Cattle, etc.

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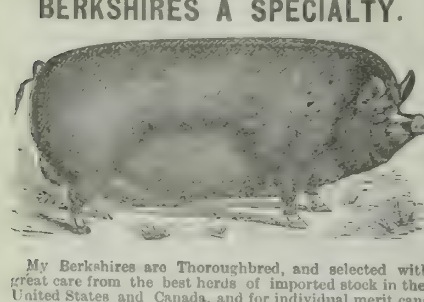

My Berkshires are Thoroughbred, and selected with great care from the best herds of imported stock in the United States and Canada, and for individual merit cane not be excelled. My breeding stock are recorded in the "American Berkshire Record," where none but pure bred Hogs are admitted. Pigs sold at reasonable rates. Correspondence solicited.

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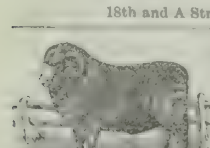

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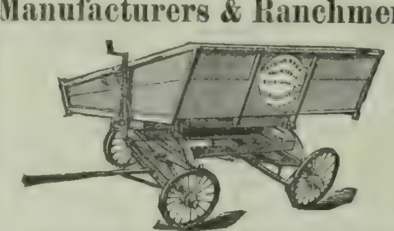

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Which keeps the load level and over the center of gravity at all times. Patent Right for sale, or contract given for its manufacture on royalty. Send or call on TAYNTON & DERRICKSON, Clayton, Contra Costa County, Cal., or Jackson & Truman, 625 Sixth St., S. F.

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Hoof and Healing Ointment	Horse Liniment	Condition Powders.
For Brittle Hoofs,	The most effectual liniment ever used for	For Inward Strains,
Fever in Feet,	Ringbone,	Hide Bound,
Founder,	Spavin,	Loss of Appetite,
Contracted Hoofs,	Sweeney,	Yellow Water,
Sand Cracks,	Callous Lumps,	Poll Evil,
Quarter Cracks,	Old Sores,	Scratches,
Collar Galls,	Sprains,	Mange,
Harness Galls,	Stiff Joints,	Rheumatism,
Scratches,	Bruises,	Epizootic,
Mud Fever.	Windgalls, Etc.	Coughs,
Etc., Etc.		Colds, Etc.
H. H. MOORE & SON, Sole Proprietors.	H. H. MOORE & SON, Sole Proprietors.	H. H. MOORE & SON. Sole Proprietors.

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Drilling Artesian and Ordinary Water Wells, Test Wells for Minerals,

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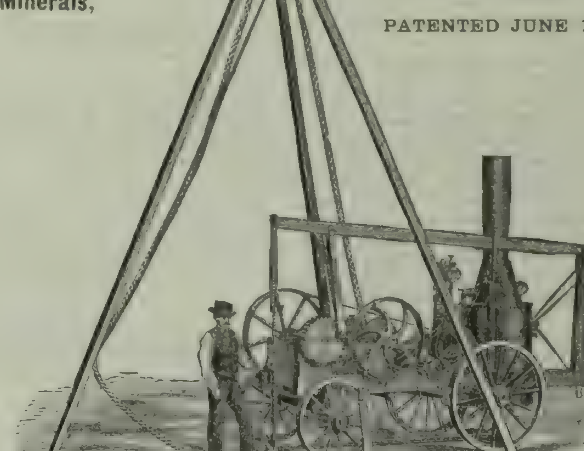

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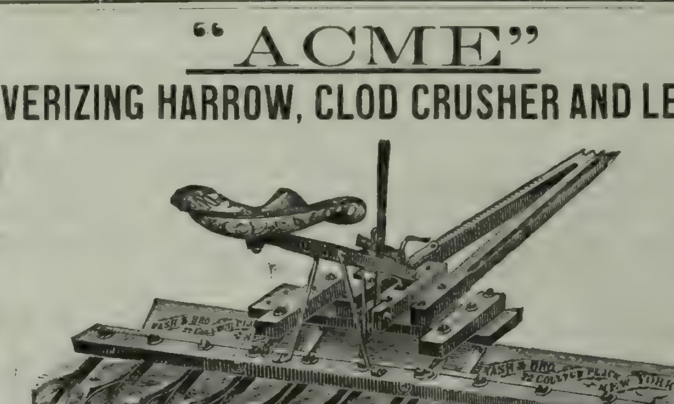

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Six lines or less in this Directory at 50 cts a line per month.

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PETER SAXE & SON, Lick House, S. F. Importers and Breeders for past *eleven* years. Berkshires, "Jerseys," "Short Horns," and all varieties of Sheep, and their grades.

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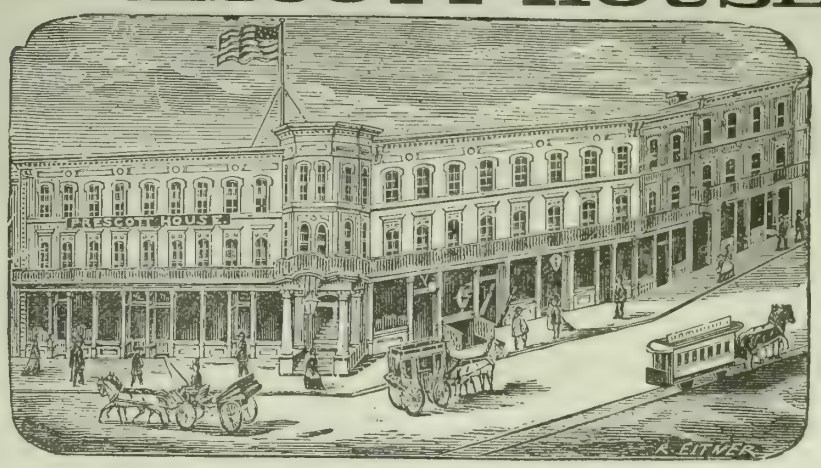

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Of all kinds and sizes.

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The New Non-Poisonous Sheep Dip and Disinfectant. Price reduced to $1.60 per gallon. For directions and testimonials apply to FALKNER, BELL & CO.,

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SHEEP WASH.

$2 per Gallon.

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Mission Rock Dock and Grain Warehouse

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65,000 tons capacity. Storage at lowest rate

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SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,000,

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Capital Paid up in Gold Coin, $531,200.

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San Francisco, Jan. 15, 1882

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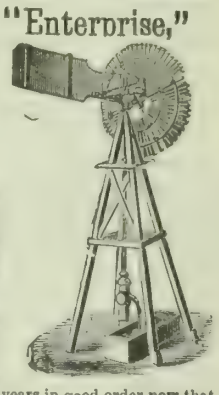
PERKINS' PATENT Self Regulating

WINDMILLS

Pumps & Fixtures.



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San Francisco Agency, LINFORTH, RICE & CO., 323 & 325 Market Street.

Holstein Cattle.

CLYDESDALE AND HAMBLETONIAN

HORSES.

The largest and deepest milking herd of Holsteins in the world. 225 head, pure bred, mostly imported, males and females of different ages.

A Large and elegant stud of imported Clydesdale Stallions and Mares of all ages

Hambletonian Stallions and Mares of superior breeding Personal inspection invited. Separate catalogues of each class, and milk records of cows mailed free on application. All inquiries promptly answered. State that you saw this advertisement in the PACIFIC RURAL PRESS.

SMITHS & POWELL,

Lakeside Stock Farm, Syracuse, N. Y.

SPECIAL STOCKHOLDERS' MEETING.

Grangers' Business Association,

OF CALIFORNIA.

Five Directors of the above-named corporation, and stockholders thereof, representing more than one-tenth of the stock issued, having made a written request to the President to call a special meeting of the stockholders, therefore, pursuant to such request, notice is hereby given that a special meeting of the stockholders of the Grangers' Business Association of California will be held at the office of the Association, No. 38 California street, San Francisco, on Wednesday, the 15th day of March, 1882, at the hour of 1 o'clock P. M., for the purpose of considering the question of making a sale of the property of the Association, and for the transaction of such other business as may come before the meeting.

DANIEL INMAN, President.

Attest: AMOS ADAMS, Secretary.

HORSE-POWER ROTARY PUMP.

The most complete, compact, durable and effective machine for pumping and other light work. No jerk or jar; runs easy and gives a continuous stream of water. Is light, portable, convenient to move or set in operation. Capacity, 2 000 gallons an hour, with one horse.

Weight, all told, 600 lbs.

R. M. BEEBEE,

Gridley, Butte County, Cal.

52 Gold, Crystal, Lace, Perfumed & Chromo Cards, name in gold and jet, 10c. Clinton Bros., Clintonville, Co

[Com.]

The Engineer's Remedy.

In the notices of recent patents published in last week's issue of the Press, mention was made of one granted to Lewis Forbes of San Francisco, for a hair tonic. This invention or discovery is, perhaps, the most remarkable one of the century, and deserves much more than a passing notice. The invention is a compound which will produce a full and thick crop of hair upon heads which have been bald for years, and which have resisted the most strenuous and determined efforts with other preparations to cause hair to re-appear. The virtue of Mr. Forbes' discovery is too well-known to be impeached. It has made hair grow in a score of cases in San Francisco, and there are willing voices to testify to this fact. Much discredit has been thrown upon statements of this nature, because of the unprincipled assertions and character of men who palm off on the public some compound entirely devoid of merit. But in this discovery of Mr. Forbes' it can be stated clearly and truthfully that it will do what is claimed for it; that it will make hair grow upon bald heads, and that, too, if faithfully applied, in a short time. The success of this tonic may well be termed wonderful. During the entire course of his experiments, Mr. Forbes exacted no price; he was and is in a self-supporting position. He had confidence in his discovery, and in order to thoroughly test it, he made it known that he would apply it to any who wished to try it. Many accepted the invitation, and in almost every case he made hair grow, and in those in which success was not apparent a good reason could be shown—generally failure upon the part of the individual himself to comply with the simple directions of Mr. Forbes. The men upon whose heads hair has been caused to grow are at all times willing to testify to the fact, and more convincing than this, by far, they are ready to exhibit their heads so that the new and young crop of hair may be seen and recognized. The ingredients are harmless, and bear upon their faces a plausibility which no other compound possesses; this, added to the fact that it is successful, will convince the most doubting. It is almost useless to say the discovery is valuable. If the vast number of men who are bald come to the conclusion as to the merit of the discovery, as they will have to, it requires no second sight to perceive the vast fortune in the invention. Who, with a bald head would refuse to pay any price to have his hair brought back! There is undoubtedly much money in the discovery, and when fully introduced it will make its fortunate possessor as wealthy as human ambition could desire.

Persons receiving a sample copy of the Pacific Rural Press *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

A Turned Leaf will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

Important additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances. The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

Remittances to this office should be made by postal or dft or registered letter, when practicable; cost of postal order, for $15 or less, 10 cts.; for registered letter, in addition to regular postage (at 3 cts. per half-ounce), 10 cts

St. James Hotel. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

Agents can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. Ridout & Co., 10 Barclay St., N. Y.

Information on Fruit Growing, Transportation, Marketing, Etc.

The Official Report (by J. H. Wheeler, Secretary), of the CALIFORNIA STATE FRUIT GROWERS' CONVENTION, held at Sacramento, Dec. 6th, 1881, as published in several issues of the Pacific Rural Press, has been issued in a pamphlet containing 24 solid reading pages. Besides the transactions of the State body in council, the work reports the ideas and practical experiences stated by individual fruit growers.

Mailed postpaid from the Pacific Rural Press office, S. F., on receipt of 10 cents.

Orange Culture in California.

This work, written by T. A. Garey, and now in press, will be issued in season for presentation at the Citrus fair in Riverside, or about the 20th of March. It will embrace some 220 pages. It contains an important appendix on Grape Culture, by L. J. Rose. Price, in stiff cloth covers, $1.25; in flexible cloth, $1. Orders will be received at this office.

Try the Rural Press for 25 Cts. a Month.

Tell your friends that they can have the Pacific Rural Press mailed to them one month on trial for 25 cents. Four back Nos. will be added on receipt of 10 cents additional—making eight copies for 35 cents. It is a handsomely printed and illustrated home journal. Mail it to friends abroad.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired), be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

Our attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

S. F. Market Report.

Note—Our quotations are for Wednesday, not Saturday the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

San Francisco, Wednesday, Mar. 1, 1882.

The chief subject of comment in trade circles has been the establishment of the "Call System" of dealing by the Produce Exchange. An article in another column will give farther particulars about this movement. So far the sales have not been large, but there have been enough to keep up the Call, and probably the method will grow more popular as the dealers become more accustomed to their own voices.

The following are the latest advices from abroad:

Liverpool, Feb. 27.—Wheat, spot, Fair Average to Choice California, including Club, 10s@10s 4d; cargoes off coast, 47s 6d; nearly due 47s 6d; just shipped, 45s; floating cargoes, very inactive; on passage and for shipment, dull; Red American Spring, No. 2 to No. 1, 10s 9d@11s 5d.

The Foreign Review.

London, Feb 13.—The Mark Lane *Express* in its review of the British Grain trade for the past week, says: Growing crops continue to improve. Spring sowing is progressing rapidly and satisfactorily. The condition of the Grain trade is unsatisfactory. Samples of native Wheat are weaker, and inferior is practically unsalable. Flour is irregular and cheaper. All Breadstuffs closed depressed, foreign extremely so. Foreign Flour arrives freely. Trade was dull throughout the week, and prices were irregularly cheaper. Maize declined; mixed American in London on Friday was quoted at 27s 6d; it is stated that still lower rates have been accepted. Cargoes of Wheat off coast are difficult to sell. Red Winter on Saturday ranged at 50s 6d, a decline from Wednesday's rate. No. 2 California sold at 48s, being 1s lower than last week. There were 15 more arrivals; 9 cargoes were sold, 8 withdrawn and 10 remain on the market, of which 5 are California. Sales of English Wheat during the week were 37,065 quarters, at 47s 7d ⅌ quarter, against 26,088 quarters, at 40s 9d ⅌ quarter, for the corresponding week of last year.

Freights and Charters.

Wheat freights are nominal, at 47s 6d for large wooden vessels and 50s for small iron vessels, to direct ports. The rate of the *Prince Frederick* is stated to be 47s direct to Liverpool, 6d less than any other spot charter for a year past. The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive according to the latest advices:

In Port.	1882.	1881.
Engaged, tons	58,034	46,740
Disengaged, tons	45,933	4,395
To arrive, tons	228,119	182,396
Total supply, tons	332,086	233,531
Increase for 1882, tons		98,555

Eastern Wool Markets.

New York, Feb. 26.—The week has been broken by a holiday, and this reduced the volume of business somewhat, but, all things considered, matters remain in a very fair shape and we hear no additional serious complaint from the selling interest. That the turn of affairs is rather against holders at the moment, they are willing to admit, but no radical changes have been forced, and many still adhere to the hope that the wants of customers must create sufficient animation to form a basis for a stronger and possibly higher market. The main fear is, however, that improvement will come too late and strike in at just about the time negotiations for the new clip commence, and again open the season on an extreme basis. With many of the trade the feeling seems to be that the whole market drags, less through any inherent weakness of its own than through the influence of the unsettled condition of affairs in financial circles, and the breaking down on the line of values for other staple products of the country. Advices from abroad show no important changes, though in one or two cases there was an apparent inclination to weakness. According to reports there is a probability that about 800 bales, coming here from London, have been lost at sea. Sales include 70 bales at 36c; Spring California at 18 to 28c; 140,000 lbs of fall and combing at 15 to 31c.

Boston, Feb 25.—The Wool market is quiet and prices are unchanged. The sales of the week have been 1,850,000 lbs. of all kinds, including Ohio and Pennsylvania fleeces, at 43½@45c, X and XX and selected lots at an advance on the latter rate. Michigan and Wisconsin fleeces have been selling at 41½@42½c, very choice X as high as 43c. In medium and No. 1 fleeces sales have been made at 45@49c, including Ohio and Michigan. Combing and delaine selections have all been firm, selling at 45@50c. Good Ohio delaine and No. 1 combing have been selling at 48@50c. Unwashed fleeces have been in steady demand, and remain unchanged. Sales have been principally at 25@33c for fine and medium grades. California Wools have been very quiet, and sales limited. Pulled Wools have been in demand, and are very firm. Choice supers have been sold at fine 4c, and down to 30@35c for common. In Cape Wool there were sales of 55,000 lbs at 29½@31c; 58,000 lbs of Australia at 45@48c. Considerable Cape has been shipped in bond to Canada. In Montevideo there were sales of 157,000 lbs at 35@37c. Carpet Wools are quiet.

Boston, Feb. 28.—There is no change to note in Wool. The demand is steady, but moderate. In California Wool there is very little doing, and both Fall and Spring is scarce. Pulled Wools are in steady demand and at 45@53c for choice supers, and 30@43c for common and good Australia. Montevideo and Cape are inquired for, but there have been no important sales. Carpet Wools are quiet.

Eastern Grain and Provision Market.

St. Louis, Feb. 24.—About 450,000 bushels of Corn and something over 200,000 bushels of Wheat have left this port for exportation via New Orleans during the past two days, and about 150,000 more bushels of Wheat will leave to-day. About 40,000 bushels of California White Wheat, which is in transit to St. Louis, will go to country millers within a radius of 100 miles of this city.

BAGS—There is little change. For standard Calcutta, June delivery, $8 85 has been bid and $8.92½ asked.

BARLEY—Barley is reported weaker, as the rains promise a crop. On the call to-day there were sales, for future delivery, as follows: 100 tons No. 1 Feed, June del., $1.37½; 100 tons No. 1 Feed, July del., $1.42½; 100 tons do, $1.45. The rates for present delivery are about the same as last week, and as shown in our table of prices.

BEANS—There is a slight reduction on Pea and Small White, also on Red and Pink Beans, as shown in our list. There are few sales at present.

CORN—Corn is a shade lower. Large Yellow has been offered at $1.90 without takers.

DAIRY PRODUCE—Butter shows the effect of the rains and warmer weather and is 1c ⅌ lb lower than last week. Cheese is unchanged.

EGGS Eggs have dropped to 22@23c and are quite abundant.

FEED—Hay is unchanged, although anything for future delivery suffers severely because of the improved prospect. Quite a contest sprung up on Bran at the call, and a number of sales were made, as follows: 30 tons spot, $18.37½; 25 tons, March 15th, one month free storage—$17.50; 25 tons, April del., one month free storage—$16.50; 10 tons, April del., $15 50.

FRESH MEAT—Beef, Mutton and Lamb have taken a sudden and considerable rise, equal to 1c on Beef, 1½c on Mutton and 3c on Lamb.

FRUIT—The list is almost without change, sales proceeding regularly and supplies being adequate.

HOPS—At the call 21½c was asked for Washington Territory Hops, without takers.

OATS—There is little interest in Oats this week, and few sales. We note one transfer of 225 sks Oregon at $1.85 per ctl.

ONIONS—Onions have again advanced, ranging now at $1 to $1.10 per ctl.

POTATOES—Potatoes are still rising, some choice sorts reaching $2.25 per ctl, as shown in our list. 75 sks Early Rose sold at $2 per ctl on call.

POULTRY—Turkeys have improved. Hens are lower, but nearly all other fowls and game birds are doing better than last week.

PROVISIONS—Cured Meats are quiet and firm with prices unchanged.

VEGETABLES—Some new vegetables are arriving. H. Neilson, of San Lorenzo, has sent in the first Rhubarb of the season, which brings 25c ⅌ lb. He also sends a box of Asparagus, and simultaneous arrivals come from T. O'Brien of Sacramento, and T. Mirander, of Alameda. Green Peas are a shade lower.

WHEAT—Wheat is about the same as last week. The following sales are reported: 120 tons No. 1 White, $1.65; 75 tons No. 1 White, $1.62½; 100 tons No. 2 White, $1.60; 40 tons and 75 tons Fair Shipping, $1.56½; 100 tons Off Grade, $1.55. At the call on Tuesday an offer to sell 1,000 tons No. 1 White in July, Stockton delivery, at $1.50, was taken up by McNear. To-day 250 tons No. 1 White, spot, brought $1.62½.

WOOL—There is no change and no news.

Domestic Produce.

WHOLESALE.

WEDNESDAY M., March 1. 1882.

BEANS & PEAS.		Pecans	13 @ 15
Bayo, ctl	— @3 50	Peanuts	6 @ 6½
Butter	3 75 @4 25	Filberts	14 @ 15
Castor	3 50 @4 00	**ONIONS.**	
Pea	— @4 75	Red	— @ —
Red	— @3 00	Silverskin	1 00 @1 10
Pink	— @3 00	Oregon	— @ —
Large White	3 00 @3 25	**POTATOES.**	
Small White	— @4 75	Early Rose	1 90 @2 00
Lima	5 50 @5 75	Petaluma, ctl	2 00 @2 10
Field Peas, b'lk eyel	50 @1 75	Tomales	2 00 @2 05
do, green	2 00 @2 25	Humboldt	2 10 @2 25
BROOM CORN.		" Kidney	— @1 75
Southern	3 @ 3½	" Peachblow	1 90 @2 00
Northern	4 @ 6	Jersey Blue	— @ —
CHICORY.		Cuffey Cove	— @ —
California	4 @ 4½	River, red	1 90 @2 00
German	6½@ 7	Chile	1 50 @1 55
DAIRY PRODUCE, ETC.		do, Oregon	1 75 @1 90
BUTTER.		Oregon Peerless	2 10 @2 20
Cal. Fresh Roll, lb	30 @ 33	Sweet	1 00 @1 25
do Fancy Brands	— @ 34	**POULTRY & GAME.**	
Pickle Roll	@	Hens, doz	5 00 @6 00
Firkin, new	25 @ 30	Roosters	5 00 @6 00
Eastern	18 @ 22½	Broilers	5 00 @7 00
New York	— @ —	Ducks, tame, doz	5 50 @7 50
CHEESE.		Mallard	2 00 @2 50
Cheese, Cal., lb	17 @ 19	Sprig	1 50 @1 75
EGGS.		Teal	75 @ 90
Cal. Fresh, doz	22 @ 23	Widgeon	1 00 @1 12½
Ducks	— @ —	Geese, pair	1 50 @1 75
Oregon	— @ —	Wild Gray, doz	1 75 @2 00
Eastern, by expr'ss	— @ —	White do	50 @1 00
Pickled here	— @ —	Turkeys	11 @ 13
Utah	— @ —	do, Dressed	13 @ 14
FEED.		Turkey Feathers, tail and wing, lb	10 @ 20
Bran, ton	15 50 @19 00	Snipe, Eug	2 00 @2 50
Corn Meal	42 00 @43 00	do, Common	50 @ 75
Hay	11 00 @17 00	Quail, doz	75 @ 80
Middlings	28 00 @30 00	Rabbits	1 00 @1 25
Oil Cake Meal	@30 00	Hare	1 50 @1 75
Straw, bale	— 62½@— 70	Venison	5 @ 7
FLOUR.		**PROVISIONS.**	
Extra, City Mills	5 25 @5 50	Cal. Bacon, extra clear, lb	12½@ 13½
do, Co'ntry Mills	4 75 @5 00	Medium	12 @ 13½
do, Oregon	4 75 @5 12½	Light	13 @ 14
do, Walla Walla	4 50 @5 00	Lard	13 @ 16
Superfine	3 50 @4 25	Cal. Smoked Beef	11½@ 12½
FRESH MEAT.		Shoulders	9½@ 10½
Beef, 1st qual'y, lb	7½@ 8½	Hams, Cal	12½@ 13½
Second	5½@ 6½	do, Eastern	15½@ 16½
Third	4 @ 4½	**SEEDS.**	
Mutton	6½@ 8	Alfalfa	12 @ 13
Spring Lamb	14½@ 15½	do Chile	— @ —
Pork, undressed	5½@ 6½	Canary	3½@ 4
Dressed	8½@ 9½	Clover, Red	14 @ 15
Veal	7½@ 8	White	45 @ 50
Milk Calves	7½@ 8	Cotton	— @ 20
do, choice	— @ 10	Flaxseed	2½@ 3½
GRAIN, ETC.		Hemp	— @ 5
Barley, feed, ctl	1 77 @1 82½	Italian Rye Grass	25 @ —
do, Brewing	1 90 @1 95	Perennial	25 @ —
Chevalier	1 77½@1 80	Millet, German	10 @ 12
do, Coast	1 70 @1 72½	do, Common	7 @ 10
Buckwheat	— @1 75	Mustard, White	1½@ 2½
Corn, White	2 00 @2 25	Brown	2½@ 3
Yellow	1 87½@1 90	Rape	2½@ 2½
Small Round	1 87½@1 90	Ky Blue Grass	20 @ 25
Oats	1 75 @1 85	2d quality	16 @ 18
Milling	1 87½@1 95	Sweet V Grass	— @ 75
Rye	2 25 @2 30	Orchard	20 @ 25
Wheat, No. 1	— @1 65	Red Top	— @ 15
do, No. 2	1 60 @1 62½	Hungarian	8 @ 10
do, No. 3	1 45 @1 50	Lawn	30 @ 40
Choice Milling	— @ —	Mesquit	10 @ 12
HIDES.		Timothy	9 @ 10
Hides, dry	— @ 18	**TALLOW.**	
Wet salted	9½@ 11	Crude, lb	6½@ 7
HONEY, ETC.		Refined	9½@ 10
Beeswax, lb	23 @ 25	**WOOL, ETC.**	
Honey in comb	15 @ 20	FALL—1881.	
Extracted, light	9 @ 10	San Joaquin	9 @ 14
do, dark	7½@ 9	do, Lamb	13 @ 15
HOPS.		Southern Fall	9 @ 12
Oregon	20 @ 21	do lambs'	13 @ 14
California, new	24 @ 26	Northern, free	16 @ 20
Wash. Ter	23 @ 24	do, defective	14 @ 16
Old Hops	— @ —	Mountain, free	16 @ 18
NUTS—Jobbing.		do, slightly seedy	13 @ 15
Walnuts, Cal	10 @ 11	Humboldt & Mendocino	18 @ 21
do, Chile	7½@ 8		
Almonds, hd shl lb	8 @ 10		
Soft shell	14 @ 15		
Brazil	10 @ 11		

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., March 1, 1882.

FRUIT MARKET.		Pears, sliced	— 9 @— 9½
Apples, bx	1 00 @ 2 50	do whole	— 7 @— 8
Bananas, bnch	2 50 @ 4 00	Plums	— 5 @— 6
Cocoanuts, 100	6 00 @ 7 00	Pitted	— 13 @— 14
Cranberries, bbl	12 50 @14 00	Prunes	— 9 @— 12½
Limes, Mex	17 00 @20 00	Raisins, Cal, bx	— @ 2 50
do, Cal, box	2 00 @10 00	do, Halves	— @ 2 75
Lemons, Cal, bx	1 50 @ 3 50	do, Quarters	— @ 3 00
Sicily, box	6 50 @ 7 50	Eighths	— @ 3 25
Australian	— @— —	Zante Currants	8 @— 10
Oranges, Cal, bx	1 50 @ 3 00	**VEGETABLES.**	
do, Tahiti M	— @— —	Artichokes, doz	— @— 50
do, Mexican	15 00 @17 00	Asparagus, lb	37½@ 50
do, Loreto	— @— —	Beets, ctl	— @— 65
Pears, bx	— @— —	Cabbage, 100 lbs	75 @ 1 00
Pineapples, doz	7 00 @ 8 00	Carrots, sk	75 @— 90
DRIED FRUIT.		Cauliflower, doz	50 @— 75
Apples, sliced, lb	— 6 @— 6½	Garlic, lb	— 1½@— 2
do, evaporated	— 10 @— 11	Lettuce, doz	10 @— —
do, quartered	— 5 @— 5½	Mushrooms, lb	— @— 15
Apricots	— 15 @— 17	Okra, lb	— 5 @— 8
Blackberries	— 14 @— 16	Peas, green, lb	— 10 @— 12½
Citron	— 28 @— 30	Parsnips, lb	— @— 3
Dates	— 9 @— 10	Squash, Marrow	
Figs, pressed	— 4 @— 6	fat, ton	10 00 @12 00
do, loose	— 3½@— 5	Tomatoes	— 7 @— 10
Nectarines	— 14 @— 15	Turnips, ctl	— @— 75
Peaches	— 11 @— 11½		
do pared	— 14 @— 18		

The Packers' Exchange

OF CALIFORNIA.

Incorporated, February, 1882.

Office, 323 Front Street, San Francisco.

Organized for the purchase and sale of Fruits, Vegetables, and other material used in their Manufacturing.

Details of all proceedings affecting or interesting to fruit and vegetable growers, commission merchants and others, will be furnished promptly on application.

DIRECTORS.

W. L. Bolte.....of Standard Packing Co.
B. Cohn.....of Banner Packing Co.
P. D. Code.....of Code, Elfelt & Co.
A. D. Cutler.....of Cutting Packing Co.
Wm. Jacobs.....of A. Lusk & Co.
I. H. Morse.....of King, Morse & Co.
Thos Prather.....of J. Lusk Canning Co.

A. D. CUTLER, President.
B. COHN, Vice-President.
I. H. MORSE, Sec'y and Treas.

Feb. 25th, 1882.

IMPROVED

EGG FOOD

To Keep Hens Healthy

AND MAKE THEM LAY.

The IMPROVED EGG FOOD is composed of more than twenty-five different articles. Every article tested by chemical analysis and thereby shown to possess the desired qualities to keep hens healthy and make them lay, as well as to promote the health and cure every disease of young chickens, ducks, turkeys, geese and every kind of fowl.

The IMPROVED EGG FOOD is now fully decided (by hundreds who have tried it), to be indispensable to all who keep poultry and would make them profitable. To those who have not tried it, I would say, GIVE IT A TRIAL. I am manufacturing this in large quantities, and have reduced the price accordingly.

1-lb. Boxes, 40 Cts. 3-lb. Boxes, $1.
10-lb. Boxes, $2.50. 25-lb. Boxes, $5.

B. F. WELLINGTON, Prop'r.

Also, Importer and Dealer in Seeds.

425 Washington St., San Francisco.

To Orange Growers.

National City, San Diego Co., Feb. 20, 1882.

I have carefully examined the ORANGE and LEMON TREES in the Nursery of T. J. Swayne, and find them entirely free from insects or disease of any kind, and as fine trees as I ever saw

W. C Kimball, Inspector for the District.

Special Prices for Thirty Days.

T. J. SWAYNE

U. S. LAND WARRANT FOR SALE

FOR 40 ACRES.

Can locate and obtain patent anywhere without further occupancy or expense of land. Good for any time or place. Price $6.00 per acre. Inquire or address this office.

"Land Warrant," Box 2361, San Francisco.

THE PACIFIC COAST THOROUGHBRED POULTRY ASSOCIATION. 1011 Broadway, Oakland, Cal., J. M. Halsted, Manager. All the leading varieties of land and water fowl for sale. Eggs from Plymouth Rocks, Buff and Partridge Cochins, Light and Dark Brahmas, Brown Leghorn, Black Spanish, Houdans, etc., $2 per dozen. Langshans, $3. Bronze Turkeys, $4. Dealers in Incubators, Brooders, Egg Testers, etc. Send stamp for circular.

Giles H. Gray. James Haven.

GRAY & HAVEN,

Attorneys and Counsellors-at-Law,

530 California St. · SAN FRANCISCO.

THE KIEFFER PEAR.

Cuttings or scions can be supplied, if ordered at once, of the Kieffer, LeConte and Souvenir du Congress. Price, 25 cents each (over one foot), or 6 for $1 by mail. Also, roots of the Sorghum Halapense, 25 cents per lb., or 5 lbs. for $1 by Express. Address J. WINCHESTER, Columbia, Cal.

AMERICAN

CONCENTRATED LYE,

Manufactured by

Geo. T. Lewis & Menzies Co., of Philadelphia.

THE

AMERICAN LYE

IS THE

Purest, Strongest and Best.

IT WILL GO FARTHER THAN ANY OTHER.

AN INSECTICIDE

AND A

FERTILIZER.

CONCENTRATED LYE has proved itself where used of sufficient strength to be thoroughly reliable and effectual, and has the great property of fertilizing the tree and soil, as potash is one of the natural constituents of both, and is required for the health of the tree. Its use is therefore recommended. Sixty pounds of the Concentrated Lye of the American Lye Co. is equivalent to 100 pounds of commercial potash.—*Report to San Jose Horticultural Society, 1881.*

THE AMERICAN LYE was specially recommended by Dr. Chapin in his address at the Sacramento Convention, and is the standard basis for the alkaline now being used by tree growers in all parts of the State.

WM. T. COLEMAN & CO.,

WHOLESALE AGENTS,

121 and 123 Market St., S. E. cor. Main,

SAN FRANCISCO, CAL.

The Agents beg to notify the Wine Growers and Orchardists that the demand for this **UNRIVALLED BRAND** *has been so enormous as to temporarily deplete stock. We have, however,* **LARGE SUPPLIES** *en route, and now due. Hold your orders. No other Lyes will do the work as well.*

Later!

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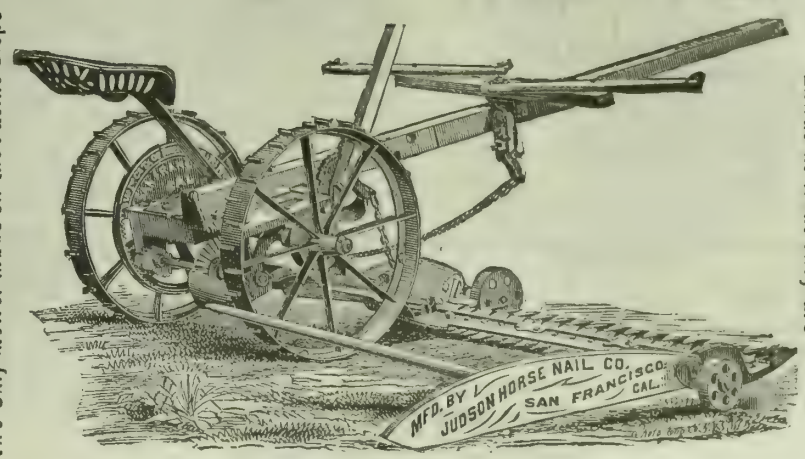

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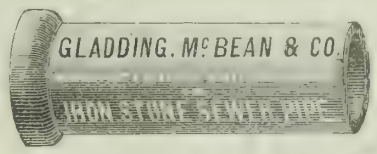

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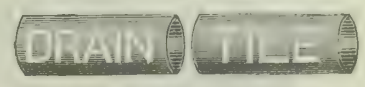

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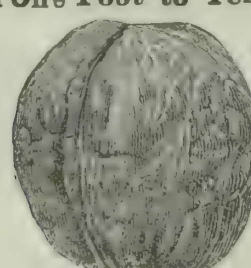

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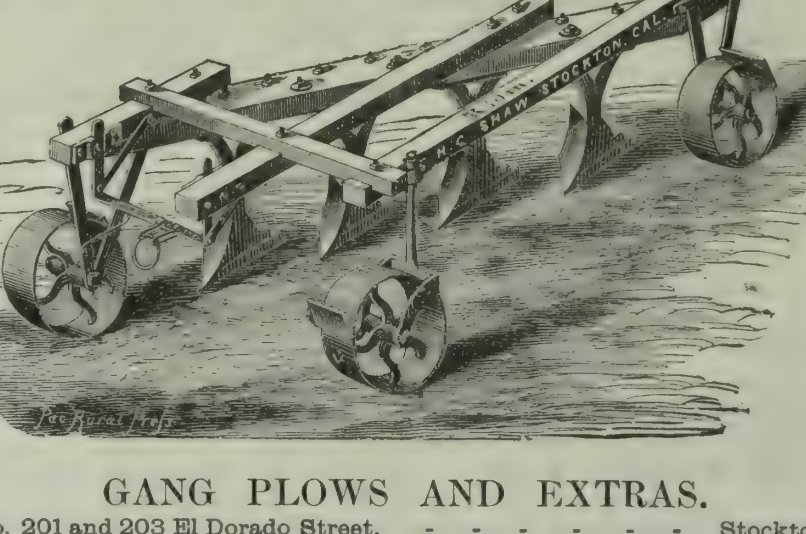

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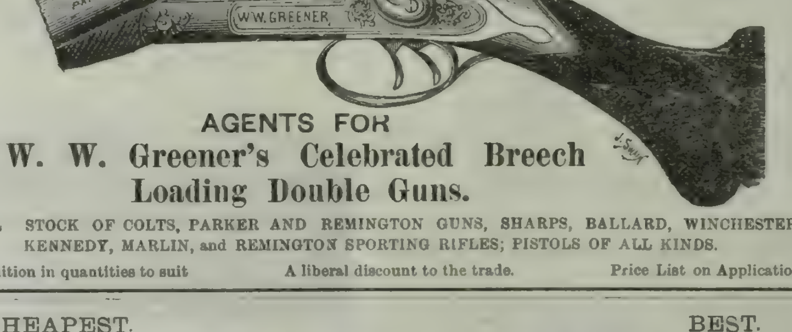

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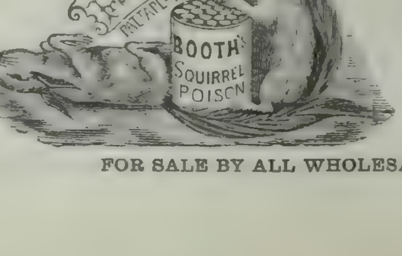

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PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, MARCH 11, 1882. Number 10

Windmills.

At the present time it is necessary to say but little as to the advantages which windmills afford, and the inconveniences which they overcome. A few years ago in this country, windmills were looked upon as antiquated contrivances, which had been entirely replaced by steam and other modern engines. Within a few years, various improvements in the building of these machines, have made them an efficient and cheap power. In localities where they are known, they are considered a necessity to every farmer, and are the cheapest farm machinery. For any large stock farm, a windmill will save every year more than it cost.

When people have to pump from a well with a hand pump to supply water for house and stock purposes, the time and labor required are a serious tax, and especially so if wells are deep and a large quantity of water is required.

A spring of water is not always located on that part of the farm most accessible and convenient to yards and stock, and always has more or less waste land about it when used for stock purposes, and commonly forms a stagnant pond, in which in warm weather the cattle stand for hours wasting their time, befouling the water and rendering it wholly unfit for them to drink, producing disease in the stock and those using the milk, butter, etc. By experiment, it has been demonstrated that stock having free access to pure water are kept at less expense and improve much faster than those limited to surface ponds or streams impregnated with decaying vegetable matter, or when driven to springs at stated times.

The question that puzzles many intending purchasers is, which windmill of the numerous patterns is best adapted to their requirements.

The variety of styles and their adaptability to perform the necessary requirements for the purpose for which they are intended, is the question uppermost in the minds of intending purchasers. They invariably question those who have windmills in use, and are governed by their opinion and recommendation. This is undoubtedly the reason of the immense success attained by Woodin & Little's improved Althouse vaneless windmill; all who have them speak in the highest terms of their superior advantage and excellence over any they have seen in operation.

The principle on which this windmill is constructed is the only one by which the speed of any machinery is successfully regulated—that of applying centrifugal force. The simplicity of the devices by which the windmill itself regulates its own motion, and the completeness with which it does this, are among its merits. The result of its self-regulating or governing machinery, as we use this term the same as if it applied to a steam engine, that is, as soon as the breeze is strong enough to run the wheel up to the speed which it is set to run by means of the regulating lever and weight, it will maintain just the speed without a stop through the severest gales and most stormy, unpleasant weather without recoil or jar and without noise.

The annexed cut shows the improved Althouse vaneless mill in light wind. There are no cords, springs, chains or weights, except the one weight which balances the centrifugal force. The delicacy and quickness with which this wheel adjusts itself to the varying force of the wind can scarcely be understood till seen.

A very light wind does not give the wheel its full speed, but a moderate breeze brings it to the speed at which the governing movement begins. It is gauged to run about 35 to 40 revolutions per minute; but by moving the weight up or down the regulating lever, its speed can be adjusted to suit anyone's convenience.

Experience has taught them, after using windmills with vanes for several years, that a vaneless mill was far preferable, for the following reasons: First, the safety of a vane mill depends entirely on the vane itself. If the vane breaks or becomes demoralized, the whole structure must go to pieces in a storm.

Second, if any part of the wheel of a vane mill breaks or becomes partially detached from the wheel, the part so detached is blown against the mast, usually making a wreck of the whole wheel. Third, an additional and useless cost is added to a mill which has a vane.

Now, by reversing the wheel, it acts as a vane for itself. The safety of a mill in a storm does not depend upon that extra appendage, and should any part of the mill become detached from the wheel, the wind blows the part away from the post, and the mill is thus kept out of danger.

There has been within the past two years many valuable improvements made in these mills, and their superiority, already established, will be maintained, as their excellence is unquestioned.

The proprietors inform us that they have received the first prize at the World's fair in Sydney and New South Wales, in 1879, and again at the Melbourne exposition of 1880. There are four sizes of the improved Althouse vaneless mills manufactured, viz: 10 ft., 12 ft., 14 ft. and 16 ft., the latter being specially adapted for irrigating or for pumping from very deep wells.

DESIGN FOR TANK HOUSE WITH ALTHOUSE VANELESS MILL

BERMUDA GRASS.—Of this plant, which is growing to some extent in California, the *Southern Live Stock Journal* says: Is it not strange that this most valuable of summer grasses—green and succulent when everything else is parched up, is not more highly appreciated by our Southern farmers? And yet we all will admit that it will furnish more and better grazing through the summer months than any other known grass. Bermuda is worthy of more extensive cultivation and we would be pleased to know that many thousand acres would be set out the coming spring. Every Southern farmer should have Bermuda pasture. For summer pasture none of the so-called cultivated grasses can equal the Bermuda; for hay, none can equal Johnson grass (*Sorgum halapense*). Let those who may vent their curses upon these two grasses, do so if they choose, but they are truly a blessing to the South, without doubt.

DURING January and February 12,655 emigrants left Hamburg for the United States.

Notes on Vine and Tree Planting.

Although it is getting late for vine planting, we give some notes from a conversation we recently had with Mr. George E. Buckman, a veteran horticulturist of San Jose. He firmly believes in two departures from the method of vine growing which is quite prevalent. He holds that vines should not be set closer than 10 ft. apart, and this position is gaining ground among vine growers. He also insists on growing the vines higher than some do. He would have the stumps from 20 inches to 2 ft. high. This allows the canes a higher growth from the ground, and facilitates the circulation of air, which is beneficial. Mr. Buckman cites many instances in which vines in his neighborhood have proved unprofitable from too close planting and two low growth. If an old vineyard is growing with low stumps, he would form a new head by pruning longer and rubbing off the lower buds.

In preparing vine cuttings, he strongly advocates shorter cuttings than generally used. Three buds are enough on a cutting, and the cane should be cut off close to the bottom bud, for a piece left on below the bud decays. He sets the cutting wholly beneath the ground, the top bud being just below the surface. Long cuttings make club-foot roots, become diseased, and the vines die, whereas a short cutting grows its whole length, and makes a healthy, vigorous vine.

In planting orchards Mr. Buckman pleads also for more room between the trees. Apples and pears he would set 33 ft. apart and between them plant apricot, peach, plum or quince, which should be allowed to grow until the larger trees need the space, and then they should be cut out. As many orchards are planted and pruned, the trees are over-crowded, the branches interlacing and unable to bear good fruit. Such over-crowded trees soon die out. He was shown one orchard in which the trees were dying, and he advised the man to cut out three-quarters of the trees, and the remaining ones would regain their vigor and productiveness.

Mr. Buckman believes in starting orchards from seed, planting several seeds where a tree is needed in the fall, and the next summer select the best seedling, bud it and pull out the rest. By growing the tree from seed just where it is to stand a much better roothold is obtained, and Mr. Buckman promises a better tree at 5 years of age than can be gained in 8 years by using transplanted trees. Some of his neighbors are beginning their orchards on this plan. To start in this way, the ground should be thoroughly pulverized and the seed planted in November. This method calls for more care than growing and budding seedlings in the nursery, but Mr. Buckman claims that the gain in vigor and time counterbalances it.

BURR CLOVER IN MISSISSIPPI.—We have had items from time to time of the behavior of burr clover grown from seed sent from this State. We find the following in a letter sent to the *Southern Live Stock Journal*, giving local experience: Burr clover is not so valuable for hay, grazing or as a fertilizer, as red clover. Stock are not prone to eat it at first, but must be educated to do so. It springs up early in the fall from the seed, and remains green until the middle of May, when it drops its seed and dies down. Produces an enormous amount of seed. Grows only on rich land to advantage. It is well worthy of more extensive cultivation. A patch, to our knowledge, sown ten or more years ago, is far better to-day than ever. We have seen very fat stock in the dead of winter, which received no other food than burr clover. The seed should be sown in August or September, and the fall rains will bring them up and give the plant a good root before the freezes come on. Seed has been scarce and high the past year, and the demand greater than for many years past. It will pay to raise this clover for the seed alone.

THE President of Chile paid a visit to the United States flag-ship at Valparaiso, and was received with all the honors. He expressed his warm friendship for the United States.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Los Angeles County Notes.

EDITORS PRESS:—"The rain, the beautiful rain" commenced to fall again last night and has continued all of to-day, and it looks now as if we were to have more to-night. It has rained considerably more in the last 24 hours than it has at any one other time this winter. The people are very busy plowing for vines and trees. One gentleman was inquiring for teams to break up 100 acres of new land to be planted to vines mostly.

The Birds.

I was much interested in Jeanne C. Carr's defense of the birds, and hope that others "mighty with the quill" will enlist on the side of the "feathered songsters." I have sown a few acres of wheat, and the other day a neighbor came over to my place and noticed it as it was just coming up. He also noticed a flock of blackbirds flying over and alighting on it. "Why," says he, "don't you know you will have no wheat there in a few days if you do not get rid of those birds?" I informed him I was not aware of the fact; and from that we fell to talking of the depredations of different kinds of birds upon fruit, he saying the linnets and sparrows had almost destroyed the prospects for a crop of apricots in several of the orchards hereabouts, and that a great many birds had been destroyed by the owners of these orchards. I told him I thought these gentlemen had been destroying their friends. I have watched the black birds closely while I have been plowing near to my wheat, and I have failed to see a single one of them take a spear of wheat, and I have been close enough to see what they did take, and every one of them took a worm or bug. Why, I have enough friends of dark-hued plumage to take my whole field of wheat, and I verily believe it would not afford them more than a dozen mouthfuls apiece. My friend said they had destroyed the apricots and some other kinds of fruit, by eating out the fruit buds. I have watched them pretty closely on my trees, and I think I can lose all the fruit they destroy in that way. I think they amply repay me, at least for what little fruit they destroy, by their glad songs. Why Mr. Editor, I verily believe they help a man through with one-half more work with their sweet melody; and how can a man be dull or have the blues while they are so cheerful. No, I believe in the rythm the old man taught his daughter to drop corn by: "Put four in a hill, my daughter; one for the blackbird, one for the crows, and two for him that sows."

The Insect Laws.

One more thing, and I have done for this time. It seems that there was a law passed by the Legislature at its last session, providing for the inspection of all the oranges and citrus fruit shipped from this part of the country, the object of that law being to guard against the red scale and other insect enemies of those trees. Inspectors have been appointed at different places in this and adjoining counties, and in conversation with one of them, he remarked, in answer to a question why they should quarantine or inspect the fruit which was only intended to be eaten, and was, in all probability, shipped to parts of the country where the insects could not possibly do harm, that the second-hand boxes, after the oranges had been sold, were bought by fruit raisers, and in that way the pests were taken from one part of the country to another. Now, Mr. Editor, I think that law is a most absurd farce, and I will give my reasons as briefly as possible. The inspector is allowed one dollar as fees for inspection, the fee being the same for one box or a thousand. We will take, for instance, one dozen boxes. Does any man or body of men, as wise as we hope our legislators are, suppose that the inspector is going to inspect 2,000 oranges—the least number those dozen boxes would hold—as minutely as would be necessary to determine the presence of the pests which it is wished to guard against for that paltry fee? And then, don't you think it is unjust that the already burdened fruit grower should have this additional expense put upon him, in order that the merchant should have a chance to profit by the sale of the boxes, which the fruit grower has to buy in the first place, and for which he gets no return in the sale of his fruit?

I think that a more just way would have been to pass a law compelling the merchants to either destroy the boxes or else have them thoroughly cleansed before selling them to the orchardists again. Would not this plan throw the expense where it belongs—namely, on those who make the profit from the boxes, also, be a surer safeguard against the pests. As an instance of how the law works now, one of the inspectors appointed in a neighboring town compelled one of the orchardists for whom he inspected to wash his oranges with whale-oil soap, and as a result the whole consignment was dumped into the bay as soon as it reached your city, as the odor arising from them was not very pleasant, and of course spoiled their sale. I. H. LEIHY.

Tustin City, Los Angeles Co.

THE FIELD.

Bluestone and Smut.

EDITORS PRESS:—We have read, with much interest, the communication on the "Bluestone-Smut" question, and, as the RURAL courts further information on the subject, we will give our experience. We have cultivated wheat in California for 10 years, and have experimented more or less by sowing both bluestoned wheat and clean wheat I think I have sown one or more lands without bluestone every year, and never, until last year, did I discover any difference in the quantity of smut in each; but last year there was a difference, that which was bluestoned being nearly, if not entirely, free from smut, and the other much affected; the variety being Sonora wheat.

Now, this one time out of 10 is not, in our opinion, sufficient evidence that the bluestone was the preventive. On the same farm we sowed White Oregon Club without bluestone, and there was no smut in it; nor was that variety of wheat ever affected by smut on *my* farm, while on an adjoining farm we saw, on one occasion, the most smut we ever saw any place, the wheat being until for market.

During the summer of 1881, I noticed particularly that many of the heads of the Sonora wheat growing amongst the Club were smutty, while *all* the Club was clear of smut; both sown without bluestone; that is, the Club was slightly mixed with Sonora before sowing. Therefore, bluestone did not prevent the Club from smutting, but its variety not being so susceptible to the fungus.

We have sown Club wheat when the land was wet, or "too wet," as we generally term it—sometimes finished in the rain—and it never caused smut.

One contributor to the RURAL states that the same head does not produce both smut grains and sound wheat. He is mistaken. At many times in different seasons we have particularly noticed this phenomenon.

It has been supposed that wheat having a thick, heavy chaff is freer from smut. The Club has a heavy chaff and is well enclosed, being difficult to thrash; but, on the other hand, the Tappahannock wheat has such light chaff that the end of the grain is often seen protruding; and we sowed it for several years, without bluestone, and seldom ever saw a head of smut.

Among practical farmers, it is thought that certain varieties of wheat are more liable to smut than others; or that a variety once affected will, if sown again, produce smut. Our opinion is that certain varieties are more subject to the blight. In the case of the Sonora wheat above given, we are not certain that the Sonora wheat sown without bluestone was from a clean sack, or from one containing more or less smut. In all our experience in bluestoning, we used 5 pounds per ton, applying it by pouring the wheat into a box and pouring or sprinkling bluestone water on the wheat, and stirring until the whole mass was dripping wet—so wet that the water dripped slightly from the sack when resacked; therefore, the ton of wheat received and held *all* the 5 pounds, but never kept it from smutting until last season, even if it did then.

Now what we farmers wish to know is, whether bluestone *will prevent* smut; and what are the causes producing this effect. That wheat can be sown without bluestone and produce a good healthy crop no one doubts; that if sown when land is very wet it may produce good grain clear of smut, and that wheat sown after it had been well or thoroughly buestoned and sown when land was in good order has produced smutty crops, and sometimes good crops, all of which our experience for the last 10 years has proved; but what we have not proved is what will prevent smut, or what causes it.

F. A. B. of Central Point, states that he has sown wheat that was one-tenth smut and harvested wheat without a kernel of smut in it. This, of course, is evidence that the fungus is not produced by diseased seed, provided this is universally the case, or in other words, it is the rule and not the exception. But facts come from many trials and from much observation, and, therefore, we think R. Schulz, M. D., of Shasta, is on the right road. As he says, progress is slow, but let progress, eternal progress, be our motto. H. J. DENNISON.

Nordhoff, Ventura Co., Cal.

TO CLEAN INCRUSTED SUPPLY PIPES.—A correspondent of an exchange writes: "One of the most annoying accidents that can happen to the steam engine runner, is to have his water supply pipes choked up with lime and other solid incrustations. Especially in the hot water pipe lime is apt to settle and incrust on the iron pipes, till they become completely filled up, so that no water whatever can pass to the pump or injector which forces it into the boiler. In such cases it is customary to take up the pipes and try to loosen the solid matter by pounding on the pipe and breaking it out, or by making a fire along its whole length and burning it out. In a very recent obstinate case one end was stopped up with a plug, and, standing it upon end, coal oil was poured in as long as any would go in, and the whole was left to stand till morning, when the whole was slid out in a solid core. While this may not always work, it is certainly worth trial in obstinate cases."

THE STOCK YARD.

Beets as Cattle Food.

To any man who has had experience with them it is a source of wonder that so few farmers raise beets, and that with those who do raise them, the quantity raised should generally be so very small.

I know of men who feel cramped for the want of more acres, and yet they are forever devoting a part of their narrow space to the raising of hay. It may be taken almost as an axiom that a hay crop pays the least of anything a farmer can raise—even less than corn. And yet, space must be given to the hay crop. Here is a neighbor, who, in addition to his orchard and vineyard, has six acres of plow land left which "he must reserve for hay." He has two horses and a cow, and they must be made to subsist off the produce of these six acres. Now it has been demonstrated a thousand times that one acre of beets will make more feed than five acres of hay. Nevertheless, this shrewd farmer insists on devoting those six acres to hay regularly year after year, but I never saw a beet growing on his place. And nearly all his neighbors are following the same rule.

Another neighbor, who has 90 acres of land, and keeps five cows, besides several calves and pigs, regularly plants from one-quarter to one-half acres in beets, and always in the same place. This man is wiser than the other. He has raised beets and knows their value. He makes great account of his beet crop every fall in keeping up the flow of milk from these five cows, when there is no green feed elsewhere to be found. But the query with me is: Why does he stick to his quarter acre? If beets are the most profitable crop he can raise, why does he not raise five or ten times as many of them? Echo answers, "Why?"

Now, let me give my rule for every farmer who has land that is adapted to beets to work by: *Plant as many acres of beets as he has cows.* At least this much; and for hogs, let him count one acre for every four head. Let us look at the comparative profits of an acre of beets and an acre of hay. Hay will not average over two tons to the acre. I buy my hay, loose in the field, every year at from $4 to $6 per ton, and have no doubt I shall be able to continue to do so in the future. Deduct the cost of seed and gathering the corp and you have the profit from an acre of hay. A man from Petaluma said to me last week that he one year raised 60 tons of Mangel Wurtzel beets to the acre. I do not doubt it. Others report similar results. But I will modify my statements very materially regarding what I have done. I have raised 25 tons of beets to the acre. I can count on 20 tons, taking one year with another, and I never fail to get a crop. Three tons of beets are worth one ton of hay, at the lowest estimate, for the production of milk in cows or for fattening any kind of stock. This, then, would require seven tons of hay to the acre to make equal value with an average beet crop. Thus, beets are ahead more than three to one.

Feeding Beets.

But will stock eat beets, and are they wholesome food when given in large quantities? One dairyman said to me: "I can not feed mangels, they scour my cows so badly." Many have experienced the same trouble. But the whole trouble is in the manner of feeding, and not in the feed at all. This rule must not be forgotten: *Always begin moderately*, and you can soon feed a cow all the mangels she can eat, with none but the happiest results. I have owned and thus fed several cows, and I never had any trouble, if I was careful not to feed too much at first

"But they make watery milk," says one. Let us see about that. I have a little Jersey cow that eats regularly from 50 to 75 lbs. of Mangel Wurtzel beets, fresh pulled, every day. They are very full of water, I suppose. I notice that my cow seldom drinks water. But they are also very crisp and sugary. I estimate that this little cow eats fully a ton of beets per month all through the fall and winter season. Indeed, she eats very little else except these beets and one sack of bran a week, sprinkled dry upon them when cut up. I always aim to give her all the good hay she wants, but she consumes but very little.

Now, as to the results. This cow, which I do not rank as an extra good one, for I bought her from the butcher for $40, had her fourth calf in the middle of last December. Of course, she has had no "green feed" since that time, but has been kept constantly in the yard. But I determined to raise her calf, and it is now nearly three months old, fat and flourishing, and still has plenty of sweet milk to drink. But all this time, the cow, in addition to raising her calf, has furnished all the butter and cream that a family of eight persons cared to use, and from four to six pounds of "gilt edged" butter has been sent to the market every week. This is pretty good for "watery milk." What is the difference whether a cow gets her water from the pump or from the beets, so long as she gets what she wants and no more? My cow tastes of water every day or two, showing that she does not get too much in her feed.

Men talk much about the desirableness of having heifers come in on green feed, so as to develop their milking qualities, etc. But the man who raises an abundance of Mangel Wurtzel beets is wholly independent of times and seasons and green feed, for he has got the best milk-producing feed for all seasons that he could have.

The beauty of beets lies in the fact that they are available at all seasons, but especially when all other green feed is wanting. My cows never seem to tire of beets. They will leave all other kinds of food for these. They never scour them, but keep the bowels in a much more free and healthy condition than is possible with dry feed. When the aforesaid calf was six weeks old, I commenced feeding it beets, and it took eagerly to them, and is now in splendid condition.

Any kind of beets makes good feed for stock, but the long, red Mangel Wurtzel variety is accounted the most profitable. It grows large, stands up well out of the ground, can be pulled without difficulty, has almost no side roots to hold dirt, is very crisp and sugary, and can be corded up like stove-wood and kept for months in a cool, dry place.

Beets should be planted as soon as the heavy rains are over (not before), generally in March, or by the middle of April. Stock beets should be planted in rows, four ft. apart one way, and the seeds about two or three inches apart in the row, and then thinned out to one foot.

I always soak my seed from two to four days before planting. Dip the sack of seed in a pail of milkwarm water for an hour or two, and then hang it up in the sun in a warm place. Keep it wet, but not under water. If the sprouts start out, no matter, it will not hurt it. Plant two or three inches deep, and go over the ground afterward with a clodder, to keep the moisture in. The beets will come up in a very few days, and if thoroughly cultivated, they will make an immense crop, growing right on until New Year's, or later. The main points are: 1st. Get good seed. 2d. Plant at the right time. 3d. Cultivate thoroughly. Almost any good soil, sandy loam, clay or adobe will bring fine beets with good cultivation. W. C. DAMON.

Napa, March 1, 1882.

[Mr. Ashburner, of Baden farm, plants at the rate of one acre of beets to five cows, and gets enough to make two feeds of about 40 lbs. each to each cow per day for five or six months of the year.—EDS. PRESS.]

Animal Combustion.

Within every living organism there are two opposing forces. The "vital force," which produces all the phenomena of life, holds the material elements in unstable relations, against their will, so to speak, and it is antagonized by the natural chemical affinities of the elements, which tend to break down the organic compounds and re-arrange the elements in more stable form. This decomposition takes place in some degree during the life of every organism, and when life ends, or when the vital force ceases to act, it rapidly destroys the structure.

The waste matter resulting from this disintegration must be immediately removed from the body of the living animal, otherwise it clogs and poisons the system. The method of its accomplishment is one of the most admirable functions of the animal economy. To remove the effete matter in the natural liquid or solid state would be very exhausting; consequently it is burned, and the gaseous products of its union with oxygen are then easily carried away. Literally speaking, this makes a furnace of the body of every animal; and the most pressing and ceaseless demand of the system is for oxygen to support its fires. Respiration is hence an absorbing and excreting process, whereby oxygen is received and carbonic acid and water removed. It thus becomes a measure of the amount of combustion.

In the "cold-blooded" animals, respiration bears a direct proportion to the activity and the heat of the body, as the former causes a metamorphosis and waste of tissue, and the latter always aids decomposition. The fact is one of common observation. It is well illustrated in the quickened breathing of a tired animal, and in the almost entire suspension of respiration in the hibernating state. The respiration of a "cold-blooded" creature is increased by artificial heat. In extremely hot weather, frogs may have to leave the water entirely, and fishes come to the surface to procure air. Reversely, frogs can be kept for years in a state of suspended animation by a low temperature, and revived by warming. Some low animals can survive freezing or drying for an indefinite time; and, under such conditions, the waste of the tissues must be entirely suspended.—"*How Animals Breathe*," *in Popular Science Monthly.*

WHAT MAKES CORN POP?—Chemists who have examined Indian corn, find that it contains all the way from 6 to 11 parts in a hundred (by weight) of fat. By proper means this fat can be separated from the grain, and it is then a thick pale oil. When oils are heated sufficiently in closed vessels, so that the air cannot get to them, they are turned into gas, which occupies many times the bulk the oil did. When popcorn is gradually heated and made so hot that the oil inside of the kernels turns to gas, this gas can not escape through the hull of the kernels, but when the interior pressure gets strong enough, it bursts the grain, and the explosion is so violent that it shatters it in the most curious manner. The starch in the grain becomes cooked and takes up a great deal more space than it did before.—*Agriculturist.*

SERICULTURE.

The Silkworm—Its Education and Reproduction.

Addressed Especially to Beginners in the Silk Business.

[Written for the RURAL PRESS by FELIX GILLET, of Nevada City, Cal.]

Part First.

Thanks to a few patriotic women, the silk industry, which for some years has been resting under a cloud, seems at last to be waking up, and let us hope that, under the warm and sympathetic influence of the women of California, this beautiful industry, so well adapted to that sex, will accomplish what was and is now expected from it. When we consider how restricted is the field left to women and girls for employment, aye, for earning an honest living, through the remorseless competition of the cursed Chinamen, whose evil influence, acting like a blight on anything they touch, drives away the bright daughters of our land from all those branches of business, industry and labor so well fitted to their peculiar and more delicate constitution; I say how becoming it was for those women to come to the rescue and, tending a helping hand to their less fortunate sisters, put themselves at their head with this very appropriate motto inscribed on their banner:

Aide-toi, le Ciel t'aidera.

Silk raising is indeed, from beginning to end, a work so well suited to feminine fingers that in all countries where silk is raised and manufactured, and from the most remote times to our days, that industry has been left almost entirely to the care of women. See what the Chinese legend says about the first efforts to make of that golden thread a tissue for us to wear: "This great prince, Hoang-ti, who reigned over China 2602 years before our era, was desirous that Si-Ling-Chi, his legitimate wife, should contribute to the happiness of his people. He charged her to examine the silkworms, and to test the practicability of using the thread. Si-Ling-Chi had a large quantity of these insects collected, which she fed herself, in a place prepared solely for that purpose, and discovered not only the means of raising them, but also the manner of reeling the silk and of employing it to make garments."

"It is through gratitude for so great a benefit," adds the book entitled "Wai-Ki," "that posterity has deified Si-Ling-Chi, and rendered her particular honors under the name of the "Goddess of Silk Worms."

In the book "Li-Ki," which dwells on ceremonies and rites, and written by Khoung Seu, or Confucius, in the fifth century before Christ, we find the following: "During the last month of spring, the empress, after having fasted and gone through the act of purifying herself, offers a sacrifice to the spirit, or 'Goddess of the Silk Worms;' then she goes in the fields toward the rising sun, and gathers the mulberry leaves with her own hands. She forbids the ladies of her suite and the wives of noblemen to wear any jewelry, and she exempts her waiting maids of any sewing or embroidering work, so that they may be able to give all their time to the raising of silk worms."

In the same work, the author says: "By means of charms, are selected the ladies of the three palaces and the noble ladies that are pure and surrounded by happy presages, and they are then sent to the house of the silk worms, to feed them and to take care of them."

In the book "Chou-King," one of the classic books of China, we read: "On the first day of the moon, in the first month of spring (March), the prince's wife takes the silk-worm grain to the river, where she gives it a cold bath."

In the work entitled "Nong-Sang-Thong-Kioue" (year 48. B. C.), we see: "The mother of the Emperor Youen-Ti used to visit the house of the silk worms, and, accompanied by the empress and the ladies of her court, she would pick leaves on the mulberry trees for feeding the worms."

Under the Song dynasty (same work and between the years 454 and 457 A. D.), the Emperor Hiao-Wou-ti had a silk worm's house constructed; the empress herself was gathering the mulberry leaves, after the rites of the Tsin dynasty."

The Chinese author keeps on citing numberless facts of that kind, taken from the history of the succeeding emperors down to the years 968 and 976 of the Song dynasty, under which he was living, and in this way trying to show the mass of the people that from the most remote epoch to his time, the empress, to give the example to the whole empire, and foster that noble industry, would herself raise silkworms.

I have taken the pains of giving the public those few extracts of Chinese authors because, in that country, silkworms have been raised from time immemorial, the work being done almost exclusively by women, and that industry, having ever since been carried on successfully, adding immensely to the prosperity of China and to the happiness of her people. Now, I would add, as a word of encouragement to those women who are using their best exertions toward founding on a lasting basis that silk industry on this side of the Pacific, so eminently adapted for it, and in that way give employment to a large number of their sex: Keep on in your noble work; do not be discouraged by difficulties of all kinds as you will surely meet on your path; do not expect too much from that branch of industry; remember, that with the cursed Mongolian staring you in the face wherever you apply for a work fitted for your sex, you must not, you cannot ask more than to simply improve your circumstances, made so desperate by the implacable competition of the Chinaman. Rely, first, on yourselves. Never mind whether in Spain raisins are dried and prepared by women; in France, grapes gathered by women and prunes cured by them; in Portugal, oranges packed by women; in Italy, olives picked by women; in England and Germany, hops also picked by women; in all those and other countries, and in the Eastern States, women employed in canneries and factories, and so forth. Never mind that; you cannot help yourselves, for all those avenues of employment are here shut off to you by the slaves of China. So I repeat, rely but on yourselves, and try your hand at the only industry where you can meet your relentless enemy on an equal footing—the raising of silk worms.

Giving all that precedes as an introduction to my subject, I will now describe

The Art of Raising Silk Worms

In as clear and efficient a manner as an experience of 15 years in the business and a thorough study of the question will permit. But as this paper is written expressly to the address of people totally ignorant in the business, people of small means and who cannot raise silk worms but on a small scale, I will beg more enlightened persons in that art to take this into consideration in perusing these letters, and not look them through for such information on the carrying on of the business on a larger scale, as would necessitate on the part of the writer a more elaborate and lengthy paper.

I will first, for the better understanding of the business by inexperienced people, give them some explanations of terms commonly and universally used in silk culture:

Sericulture—Silk culture, the art of raising silk worms; from the Greek word serikon, silk; sericum in Latin.

Sericulturist—A silk grower; a person who raises silk worms.

Cocoonery—A magnanerie; a house in which the worms are reared or raised. No matter how small or large is the house or room where silk worms are raised, it is a "cocoonery."

Education—The act of educating or breeding or rearing silk worms. A term of general use in silk growing countries. Examples: The education is getting along finely; the education commenced on the 15th day of April and ended on the 1st of June. The education of silk worms comprises the feeding and treatment of the worm from its birth to the formation of the cocoon.

Annuals—Races of silk worms that breed but once a year. Yield the finest and largest quantity of silk, everything being equal. Annual races.

Bivoltine—A race of silkworms that breeds twice during the year.

Polyvoltine—A race of silkworms that have several broods a year. The silk of Bivoltine and Polyvoltine races is inferior to that of annuals, yielding a great deal less, and in this proportion: Twelve pounds of annual cocoons will yield one pound of raw silk, while it requires from 18 to 25 pounds of Bivoltine or Polyvoltine cocoons to yield a pound of silk. For that reason such cocoons sell so much per cent. cheaper than annuals.

Litter—The accumulation on the paper or frame where the worms lay of debris of dried and partly consumed leaves and of the offal of the worms themselves. Thanks to our very dry atmosphere, the litter has not to be thrown out so often in California as in other silk-growing countries, where the atmosphere is quite damp; though it is of the greatest importance to keep the worms in as clean a condition as possible.

Shifting—It is a very simple operation, done either for taking away the litter and spreading out or thinning out the worms. It is done through muslin or gauze for the first two ages, and perforated paper, or leaves, or little twigs, for the last three ages. As soon as the muslin, or perforated paper, or twigs, are loaded with the worms, they are shifted or removed to another shelf or tray. For spreading out the worms, the operation has to be done in two different, but successive, times; or else two pieces of muslin or perforated paper have to be laid upon the worms in such a way that each muslin or paper will hold half of the worms to be shifted and spread out. As soon as the muslin or perforated paper is laid upon the worms, some leaves have to be spread over muslin or paper, so as to induce the worms to climb up through the holes of the muslin or paper to the fresh leaves above. The worms of one paper are thus spread out on two papers, occupying double the space they did before the shifting operation took place. A little practice will soon accustom any of our bright children with this delicate but easy operation.

Shelves—Trays or hurdles composed of boards (an inch to ½ inch in thickness), or of laths nailed sideways on cross-pieces, and forming a kind of lattice-work. These shelves in regular cocooneries measure 5 ft. and 4 inches by 26 inches. They are placed on cross-pieces fastened to upright standards, and at a distance of 2 ft. from the floor, and 16 inches from each other, making 4 tiers of shelves in a room, with a 10 to a 11 ft. ceiling. The upright standards are placed 4 ft. 4 inches apart, twice the width of a single shelf, so as to allow a double set of shelves, the worms being thus fed from each side. A narrow room may contain only a double set of shelves right in the center of the room; if wide enough, it may contain either a double set of shelves in the middle and a single set on each side, with a passage all round, or else two double sets of shelves with a passage on each side.

Moulting—The time at which the worms accomplish their changes. When ready to moult, they first fasten their hind legs to anything they find on or round the litter, then cease to eat, and after having gone through that moulting sleep, which lasts 24 to 36 hours, they cast off their old skins. There are four moultings.

Ages—Period between two moultings or changes. Silkworms moulting four times have, therefore, five ages. If raised at a high temperature (between 80° and 85° Fahr.), and fed constantly day and night every four or five hours, silkworms will live 32 days from the day of hatching to the spinning of cocoons—the first age lasting five days; the second, four days; the third, six days; the fourth, seven days; the fifth, ten days.

Freze—The time of great greediness of the silkworms; it comes on between the fifth and eighth day of the fifth age. It is well to give the worms during that freze time some extra meals, or, in other words, to feed them more frequently.

Chrysalis—The form assumed by the worm inside the cocoon after being done spinning, and preparatory to issuing a moth or perfect insect.

Twin or Double Cocoons—They are easily recognized by their extra size and firmness; they have from two to several chrysalides inside. The silk obtained from such cocoons by carding, for they cannot very well be reeled, is called Douppions, and is mostly employed for the manufacturing of sewing silk, cords, trimmings, and the like.

Stained, Softened, Pointed and Unfinished Cocoons—As all those names indicate, such cocoons are defective in some ways; they have, therefore, to be set in a lot by themselves when sorting the cocoons.

Grain—Silkworm eggs.

Graining—This comprises the selecting and coupling of the moths, the laying of the eggs; in a word, the general management of the eggs.

Cartoon—Cardboard, paper or cloth nailed on a frame 14x10 inches, and on which the moths deposit their eggs. It holds an ounce of grain.

Filature—A reeling establishment. The house where cocoons are reeled and turned into grege.

Basin—A hollow vessel made out of copper, brass, iron, or terra cotta; semi-spheric, of a depth of three to six inches, with a rather flat bottom and smooth surface. Basins are used to dissolve the gummy substance that makes the silk of the cocoon stick together. By throwing cocoons into the heated water of the basin, and by stirring up with a little broom the threads are caught and reeled out; from five to seven cocoons, according to the fineness of the silk, are thus reeled into one thread.

Gloss Silk—The loose silk that envelops cocoons; it is carded and spun like cotton or wool.

Grege—Raw silk; the silk as it is reeled from the cocoons.

Tram—Shute or woof; two or three threads of raw silk or grege twisted loosely two or four times to the inch. In weaving, the woof has little or no strain upon it, and it fills up the warp better by being soft and loose.

Organzine—Thrown silk; its organzines are the warps of woven goods; they have to receive tight twisting to induce strength and elasticity; hence the finer and more regular threads are taken for making organzines.

THE SWINE YARD.

How to Choose a Poland China Boar.

EDITORS PRESS:—As a single male is used to many females, and is generally admitted to be the most prepotent of the two sexes in giving character to their offspring, it is of great importance for breeders of Poland Chinas to obtain a boar as perfect as possible. Always consider the boar as one-half of the herd. Our idea of the points of a first class Poland China boar is a short head, face dished, wide between the eyes, fine muzzle, bright eyes, soft thin drooping ears standing well forward; (as the head is the index that tells the disposition and fattening qualities, it is important that it should be as nearly perfect as possible); soft, plum-colored skin, fine and abundant hair, a little curly, without bristles; short straight legs, standing well up on small firm feet, heavy jowl, high arching, short and full neck; back broad and moderately arching; rump nearly level with it, well let down in the twist; body good length and depth, with long well-sprung ribs, which show capacity of stomach.

The broad loin and well developed ham are signs of active kidneys. Width between the fore legs and large girth behind them denotes room for large and active lungs, which is one of the features demanded in a hog of any breed. The color is black, with irregular white spots, the black largely predominating—some white markings almost identical with the modern Berkshire, a circumstance which sometimes leads to a suspicion of a recent Berkshire cross. But this suspicion is by no means warranted by the facts, as some of the purest specimens we have ever seen were so marked. Sandy hair is no disqualification, but denotes outcroppings of original colors.

The following are the characteristics of the improved Poland China hog, based upon a standard of 100 points: Short nose (disked), 4; small head, 4; width between the eyes, 4; ear, fine, thin and drooping, 5; neck, short, thick and well arched, 4; jowl, large, 3; shoulders, broad and deep, 9; girth around the heart, 9; back straight, 6; depth of body, 9; ribs, well arched, 9; loin, wide and strong, 7; width of body at belly, 5; hams, broad, full and deep, 12; coating, fine and thick, 4; legs, short and of good strength, 6. Total, 100.

What is a Poland China?

I would say, be sure in your selection that he is a thoroughbred Poland China from a good family, and has a first-class pedigree. Then the question arises: What constitutes a thoroughbred Poland China? In answering that question I will quote from the *National Live Stock Journal*, February number, 1881. It says: "A thoroughbred Poland China is simply a pure bred Poland China, and a Poland China hog may be called purely bred when the ancestry have been coupled with a view to fixing the recognized Poland China characteristics for a sufficient number of generations to result in the transmission of these characteristics from one generation to another with a reasonable degree of certainty. Just how many generations this requires, it is difficult to say. It will depend very much upon the character of the animals originally selected and the skill and judgment with which the subsequent couplings have been directed. No arbitrary number can be fixed that can be relied upon, although ordinarily five or six generations would be called sufficient.

All must admit, whatever may heretofore have been their views, that pedigree in swine has at this day become a most important factor in the successful breeding of these animals—more especially the Poland China. That the much more rapid progress can be made in the improvement of any breed of swine by careful attention to pedigree in mating need not be argued here. The day has passed when buyers will not be satisfied with such verbal pedigrees as have been given by some breeders; they must be first-class and written so they can be verified. In answer to what constitutes a first-class pedigree of a Poland China, I will attempt to answer that question by saying that a first-class pedigree is one that is eligible to entry in either of the three Poland China Records. The basis for registration in the "American Poland China Record," first 'volume,' is four crosses by males from reliable and established breeders with a basis sow from a reliable and established breeder. The fourth volume "A. P. C. Record" will require that all pedigrees to be eligible to entry shall trace to recorded sires and dams. It is a fact admitted by breeders everywhere, that the Poland China had its origin in the Miami valley, and every pure-bred Poland China must trace in all lines to pure stock bred in the Miami valley.

How to Keep Him.

To say that success in swine breeding depends on the selection of the boar, would not be wholly correct; much depends on his care and management. The first object in the management of a thoroughbred boar is to secure perfect health. His appearance should always be that of thrift and vigor. In a thoroughly established breed, like begets like, not only in form and color, but also in those qualities which determine rapid growth, early maturity and a disposition to take on fat. Check the growth of a young boar by improper management, though they themselves may afterwards recover from such treatment, the evil effects will be seen in their offspring.

A young boar must never be stinted in food. Until he is a year old he should be kept growing, but at the same time, never be allowed to get too fat. What he needs is room for exercise and abundant food. A great many farmers that pay a liberal price for a boar pig that suits them, afterwards treat him in such a way that they receive but small benefit from the investment. One of the most common modes of mistreatment practiced by California farmers is to confine him in a small pen where he is deprived of exercise, until they become tired of caring for him, and then he is turned out with an unlimited number of sows and stock hogs, to fight and to starve, until he becomes the worst-looking hog on the farm.

My herd is headed with two boars; each has his pen, with a small pasture adjoining, arranged so that he can be confined in his pen or exercise in the pasture. I consider a boar as much out of his place roaming around the farm or neighborhood as the farmer's bull or stallion. A fence high and strong enough to keep the other hogs of the farm, can not be depended on to keep a large boar. Always treat him kindly; never chastise him if he shows a disposition to be cross or obstinate. The more you punish him for his meanness, the worse he gets. A little coaxing is better than a great deal of driving. I never have bred or owned a Poland China boar that showed a disposition to be cross. Aged boars, with their immense tusks, are looked upon as unpleasant animals to keep. Of course, none of them are desirable for household pets or door-yard ornaments. If properly treated, he will usually be quiet and gentle; in fact, a pretty well-behaved hog.

ELIAS. GALLUP.

Hanford, Cal.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

[Published by Request.]

Declaration of Principles

Of the Anti-Monopoly League of Tulare County.

The time having come when the true interests of the people require such changes in the organization and management of our municipal county, State and National Governments as will better protect the many against the encroachments of the few, whose various monopolies of privileges, franchises, lands and money oppress the people, defraud them of their inherited rights, and are fast reducing them to an alarming species of serfdom: we, as American Anti-monopolists, resolve to unite in subordinate, county, State and National leagues, that we may, by timely political action, without regard to former political affiliations, secure such changes as our lives, liberties, happiness, imperatively demand. We believe the following to be the very essence of our free government, and hereby adopt them as the fundamental principles on which we shall base our united and persistent efforts for many needed reforms.

We hold that our form of government is not a limited, but an absolute democracy or republic. We advocate, to the fullest extent,

The Sovereignty of the People,

And maintain the three following axioms as its essential features

1. The will of the people is supreme.
2. The decree of the people is final.
3. Power of the people is absolute.

It is equally true that the object of all free government, and the duty of all its officers, is

To Serve the People:

And the various functions of such government are:

1. To ascertain the will of the people.
2. To declare the will of the people.
3. To execute the will of the people.

It follows that this anti-monopoly organization is intrinsically the people's movement, and those who so prefer, may truly call it the "People's party."

We hold that the true strength of a republic consists in the completeness and fidelity with which the sovereign will of the people is ascertained and executed, and the sure and speedy execution of such will is the only form of a strong Government which we desire to exist among us.

The necessity for the organization of this new political movement for reform arises from the facts that both of the old parties, long trusted in vain by the people, have totally failed to protect our true interests, and have fostered, instead, the various powerful monopolies which are forming, in a free land, an oligarchy and a tyranny more subtle and dangerous than the rule of an English king and his courtiers, whose yoke was thrown off by our ancestors; and, because all experience proves that Democrats will not rally for reform under a Republican banner, nor will Republicans rally for reform under a Democratic banner. Hence the necessity for a new party organization, in which former conservative Republicans and Democrats who sincerely desire reform laws and greater official fidelity, can heartily unite under one banner, on a common platform, in a combined effort, that shall not play into the hands of either of the old parties.

No Monopoly of Office.

At the outset, we Anti-monopolists wish to have it expressly understood that we desire office-holders and machine politicians of both the old parties, the mass of whom, no matter what their party name, have always obeyed the behests of monopolies, rather than the will of the people, whose votes entrusted them with power to step aside. Their services are no longer desired, and their affiliation in this movement is not sought. Those who have so often betrayed the trusts reposed in them for the protection of popular rights, no longer deserve the confidence of the people. We prefer hereafter to choose our officials, rather than have them choose themselves, and far rather than have the well-known servants of monopolists choose them. We want no monopoly of office. Where officers have been truly faithful to their trusts the people will know whom to select.

We earnestly advocate the enactment and enforcement of judicious laws, that will adequately punish with impeachment, fine, imprisonment and disfranchisement every public officer guilty of malfeasance or any betrayal of the people's interests entrusted to him, so that such faithlessness to the sovereign will of the people may hereafter be made odious and dangerous; and that the people may be protected against such wrongs.

While we oppose all hurtful monopolies, on general principles, and propose in the end to protect the people against their evils, we recognize the fact that

The Giant Monopoly

Which has formed the rallying center for all other monopolies, and which has more practical power to-day than the machinery of our Federal, State, county and town governments—from the fact that it now, to a great extent, creates this machinery—is the railroad monopoly, controlled by a few shrewd, self-seeking, unscrupulous manipulators.

We hold that all corporations—the creatures of our citizens and our laws—are, in every respect, as amenable to the laws and regulations of our land, as is each individual citizen. Hence we earnestly demand judicious, explicit and strong laws, that will effectually regulate in the interest of the people, all State and inter State commerce through these and all other allied transportation companies. And, failing in this, we favor, as a last resort, Federal and State laws for the total abolishment of all such hurtful and rebellious corporations.

While we do not disapprove such Government reservations of limited extent, with practical and useful purposes, for the benefit of the general public, or for the protection of Indian tribes, or other natural features of our domain, we utterly oppose all reservation or donation of lands that will deprive our people of homes or of necessary means for their industrial pursuits and wants, as, for instance, our lumber, mining and agricultural interests. Hence we condemn the Park bill now before Congress, which plays into the hands of lumber, railroad and other monopolies by reserving and withdrawing from the use of our people vast supplies of timber and extensive mining districts in Tulare and Fresno counties; and we can approve this reservation only with such restrictions as will limit it to our highest mountain districts where no lumber or mining interests exist, and as will forever leave the use of its natural features free to all classes of our citizens alike, forbidding any monopoly to exist hereafter, except a general government protection.

We recognize the truth that

The Railroad Commission

Of California has such powers and duties as will effectively protect our people from the extortions and discriminations of our State railroads and other transportation companies, if the three Commissioners, chosen to serve the people, are faithful to their trust. While we emphatically condemn the corruption and faithlessness of a majority of our railroad Commissioners, and hold that they should be impeached and severely punished, we deem worthy of all praise and of the gratitude of our people, the manhood and fidelity of the Commissioner of our district. We earnestly appeal to the voters of each district to place men in that position who will boldly and incorruptibly obey the well-known will of the people in the performance of their vital duties.

We heartily indorse the Reagan inter-State commerce bill, now before Congress, intended to regulate freights and fares on railroads plying their business as common carriers across State lines.

Chinese Question

We demand that Congress shall enact the laws necessary to speedily enforce the existing treaty with China, that the importation of Chinese may at once be restricted to such numbers as will no longer threaten, as they now do, the industrial interests and well-being of our Republic. This Chinese evil is one of the strongest grudges the American people have against our railroad monopolies. These and allied corporations have especially fostered this unlimited introduction into the United States of one of the worst forms of slave labor, which is forbidden by our Federal and State laws, and by its use in the construction of their roads or in other enterprises, they have the more successfully fastened upon our free citizens the shackles of their galling tyranny.

National Banks and Bonds.

We recognize our present banking system, by which the paper money of our Federal Government is now issued through the agency of corporations and our bonded debt, which enslaves our people to foreign bondholders, as two of the most powerful, burdensome and dangerous monopolies that override us. We desire, at the earliest possible date, such legal changes in the management of these National interests, as will remove the evils resulting from these systems, and will do away, as speedily as possible, with our bonded indebtedness

In the nomination and election of officials, and the passage of all laws, we deem it a paramount object to ascertain the will of the people, and we propose to employ new as well as old methods—the most direct and certain possible, to ascertain, declare and execute such will.

Special Wrongs.

While the above are some of the general grievances of our people, the evils of which we complain are especially brought home to Tulare county by the following wrongs of land monopoly, timber monopoly and railroad monopoly. Our representatives in Congress have given to railroads about 1,250,000 acres of our richest agricultural lands, or about one-third of the entire county. This has resulted in withdrawing from actual settlers, to the extent of this munificent gift, the benefit of our laws for homestead, pre-emption and entry, which were designed by a paternal Government to secure homes for the many, rather than princely estates for the few.

Again, an attempt is now made to withdraw from individual enterprise, for a public park, more than one-third of the entire area of the county, or a tract about 500 square miles larger than the State of Rhode Island. This would form a

Lumber Monopoly

By forever cutting off our home supply, forcing our settlers to pay tribute to the city lumber dealers and to the railroad, and ruining a home industry engaged in the manufacture of lumber, besides depriving many citizens of mountain homes.

Among the well-known wrongs of the strong and ever-aggressive railroad monopoly, it is an attempt to ruin our county seat and chief town by leaving it out of its route, where the original location on which the franchise was granted, had placed that route. The result has been a depreciation of property by which the town has been forever crippled, and its people and adjacent settlers have been subjected to a burdensome tax in order to reach the railroad. Again, this monopoly discriminates against us in

Freights and Fares,

Depriving us of the natural advantages which geographical position would give us, so that, as one example, our fruits, which should find a market in our southern counties and in Arizona, are subjected to higher freights than those of Sacramento and San Jose, points more than 200 miles north of us.

Also, by refusing to give us a shipping point for grain by the southern route, they oblige us to ship to Stockton, about 160 miles north of us, where it must be reshipped south, past our own doors, at an additional expense of from $3.25 to $3.75 per ton, or an aggregate for the county, in a good year, of over $200,000.

Then, it discriminates unjustly between its fares from San Francisco to Los Angeles, and from our county to Los Angeles, and brings hardships on our people by failing to provide second-class and third-class fares, which exist even throughout the monarchies of Europe. To appreciate

The Extortion Practiced

By this railroad monopoly, which continues to buy up all overland routes that are likely to bring the people relief by competition, we need but compare their freights and fares between points in Tulare county and San Francisco, distances of less than 300 miles, with freights and fares between Chicago and New York, 1,200. These railroad charges in the Eastern States for 1,200 miles rarely exceed and are often less than here for 300 miles.

But, in addition to such wrongs, our oppressive railroad monopoly disregards our laws in various ways, but in one notable instance, by refusing to pay equitable county and State taxes, by which refusal during the last two years they have withheld from our funds in this county alone $58,137.54, a large part of which is school tax, thus compelling us to close our schools, and thereby depriving our children of their right to public education, as provided for by our State laws.

These same monopolists ignore our Board of Equalization, control our Railroad Commission, our Legislature, our courts, and a majority of our public officials throughout the State, in spite of salutary laws against lobbying and bribery. Hence these powerful corporations, rather than our people, are systematic and

Rebellious Law Breakers.

For all these evils our long-suffering people have, as yet, found no remedy.

In this struggle to preserve our liberties, we bury all past sectional, national, race, religious and party differences.

We earnestly appeal to all citizens, except those above excluded, who heartily indorse the sentiments here expressed, to unite with us in this movement to better secure the rights of our people. Let anti-monopoly leagues be formed at once in every voting precinct of California, and let us nominate, at an early day, anti-monopoly candidates, pledged to our principles, for every office in the gift of the people.

Conclusion

We adopt and publish this declaration of principles on the 22d of February, to commemorate the birthday of George Washington, who signalized his life by his devotion and unswerving services to his countrymen, and recognized in his life and administration the absolute sovereignty of the people.

By order of
EXECUTIVE COMMITTEE,
Tulare County.

Meetings and Elections.

LINCOLN GRANGE.—John Crook, M.; Hollis Newton, O.; Mrs. Helen Peters, L; Chris. Crook, S.; Z. Jobe, A. S.; J. P. Fowler, C.; Mrs. M. A. Newton, T.; A. J. Soule, Sec'y; L. N. Scott, G. K.; Mrs. W. P. Ahart, Ceres; Mrs. E. M. Crock, Pomona; Mannie Fagg, Flora; Lizzie Groff, L. A. S.

MATTOLE GRANGE.—Stephen Goff, M.; Chas. S. Cook, O.; Jacob Miner, L.; M. J. Conklin, S.; Theodore Aldrich, A. S.; Sister S. E. Marshall, C.; Chas. A. Doe, T.; Coleman Wilks, S.; William Roberts, G. K.; Sister Ann E. Cook, Ceres; Sister H. S. Doe, Pomona; Sister Elizabeth Roberts, Flora; Sister A. A. Benton, L. A. S.

San Diego Citrus Fair.

We have been on the outlook for a copy of the premiums and regulations of the second annual Citrus fair of San Diego county, which will be held at Horticultural hall, National City, under the auspices of National Ranch Grange, on Wednesday and Thursday, March 15th and 16th. We have not yet seen any detailed statement concerning the fair, but we have no doubt that good inducements will be made to exhibitors and a good display will be made. The San Diego *Union* says: The first Citrus fair of this county, held in March of last year, was a great success, as all will remember. It is the purpose of the managers to make the second fair as far ahead of the first one as that exceeded the expectation of the public. In short, they propose to make it the finest citrus exhibition in southern California this year. It is not as generally known as it should be that our San Diego citrus growers have been in the habit of taking first premiums at fairs held abroad. They think they can get up a display of fruit at home that will be worth coming to see, and they hope to have entries for competition from all the citrus-growing sections of southern California.

Carrying Wheat from the San Joaquin Valley.

Some 60 or 70 of the principal grain growers of our county met at Rogers' Hall, this place, last Saturday. The meeting was called to order by Mr. John Murphy. On motion E. B Beard was elected Chairman and L. B. Walthall Secretary. Mr. Beard stated that the object of the meeting was to see if some arrangement could not be perfected whereby wheat and flour could be transported East over the Southern Pacific from the various points in this county on as favorable terms as from Stockton He stated that it was understood that though we were 30 miles on the road towards the East, yet in case any one wished to ship from this point, they had to pay, in excess of Stockton rates, the cost of freight from here to Stockton. Mr. Elmore, Dr. Tynan and Mr. Murphy expressed themselves favorable to an effort for removal of the unjust discrimination. On motion of Mr. Murphy, a committee of five, one from each of the principal shipping points in the county was appointed to lay the matter before the railroad company. The chair appointed the following-named gentlemen upon the committee: Isaac Ripperdan, of Modesto; Dr. Tynan, of Ceres; Ed. McCabe, of Turlock; T. T. Hamlin, of Oakdale and John Murphy of Salida. The meeting then adjourned.—*Modesto News.*

Lodi Co-operative Association.

EDITORS PRESS:—Please insert a notice in your paper of a meeting of the stockholders of the Lodi Co-operative Business Association, to meet in Lodi, in Stoddard's Hall, on Friday, the 24th day of March, 1882, at 10 o'clock sharp, to adopt a code of by-laws for the Association. Every stockholder is earnestly requested to be present.

By order of the President, Wm Ennis.
Attest, J. D. HUFFMAN Sec.
Lodi, Cal., March 1, 1882.

WE can but express our sincere sympathy with our old friend and contributor, Bro. George Rich, of Sacramento, in his bereavement by the death of his daughter, Nellie, which occurred last month. Such events are beyond the power of words, but call forth heartfelt sympathy, which we trust will be of comfort to those who deeply mourn.

TEMPESCAL GRANGE held an interesting meeting last Saturday evening, concerning which we can only report progress on very important resolutions. A sister received the 1st and 2nd degrees. An interesting harvest feast occasion is anticipated, with guests from all the neighboring granges in Alameda and Contra Costa counties, on Saturday, March 18th, at 10 A. M.

LIFE INSURANCE.—We call attention to the advertisement of the Pacific Mutual Life Insurance Co., in another column. This company has for Directors a group of well-known and respected citizens of California, and they announce the following as characteristics of their organization:

1. Since its organization, A. D., 1868, it has paid 395 death losses, on policies amounting in the aggregate to $1,008,247
2. It has paid to policy holders, for matured endowments, dividends and surrender values, in round numbers, $1,0[illegible],000
3. It has repeatedly been examined by sworn experts and most thorough and searching investigations made of its condition and business, and in every case its solvency and trustworthiness have been demonstrated
4. Its stockholders and directors are widely known as among the most capable business men and ablest financiers of the State of California, and the integrity of their management is unquestioned
5. The laws of the State, including the constitutional provisions affecting corporations, are of the most rigid character, such as to make the company one of the safest institutions of its kind.
6. Its policy contracts contain no restrictions upon residence or travel, and its forms of insurance are unusually attractive. The low rate, deposit endowment, and mutual investment policies, are peculiar to this company, and offer advantages to the insured which are not surpassed, if equalled, by those of any other company.

THE House Commerce Committee favors the appropriation of $25,000 to telegraph daily at noon to all maritime cities of over 15,000 inhabitants, Washington time.

Agricultural Notes.

CALIFORNIA.

COLUSA.

CROP PROSPECTS.—*Sun*, March 4: The prospects for crops on the average land may be considered good. Except on the very hardest land the rainfall of this year has extended clear to the moisture below. With anything like seasonable weather during the spring we will have a large yield on all our summer-fallowed ground. The river lands will also be apt to make good crops even if we do not have any more rain. The only land in the county yet in danger of a failure is the "Pinto" and adobe immediately west of the trough. The grain on this last-named land looks finely now, and a few showers in March and April, with south winds in May, will make excellent crops even there.

CONTRA COSTA.

THE WEATHER.—*Gazette*, March 4: The rain of last Saturday night and Sunday added thirty-hundredths of an inch to our measure, making 6.80 for the season. This is a light measure as compared with the usual fall to this period of the season; but it has come in light showers, and has all been taken into the earth without wastage by surface off-flow; and in effect will go farther in contribution to the crop growth than a much larger quantity poured down in floods faster than the earth could take it in. The fact, however, must be faced, that we are entering March with an unusually light earth store of moisture, and our hopes of a good crop season depend on timely and moderately liberal spring rains, with cool May and June weather. Taking our past seven years' spring rain measure after this date, as an indication of what may yet be reasonably looked for this season, it is found that the average for the seven years has been 4.62 inches, ranging from .95 in 1877, to 11.30 in 1880.

KERN.

EDITORS PRESS.—As Horticultural Commissioners we are actively at work preparing to exterminate the few pests that have invaded our county and prevent any more coming in, and we have no doubt this county will, before many years, be as famous for its fine fruits and good health as it has been for wild stock and fever, and though there is probably not a dozen bearing orange trees in the county, if half that number, I believe that will yet be an important branch of industry here, as in one place, at least, along the foothills, fresh tomatoes can to-day be picked from the vines, as I am told by parties direct from the location. We have had an almond tree in bloom since Jan. 25th, and it is still full of bloom, with the bees gathering honey from it. The warm days since the nice rain have started things forward at double quick.—ISAAC B. RUMFORD, S. E. Community, Bakersfield.

LAKE.

THE SEASON.—*Bee*, March 3: During the last 10 days we have been favored with an abundance of warm rain, which has taken all the snow from the surrounding mountains, and taken the frost from the ground, which was getting to be a rather serious matter in some localities, as the constant freezing was pulling up grain by the roots. But now all is changed. The warm rains with a little sunshine now and then have started the grass to growing finely and grain likewise. A few more days of such weather and the hills will be covered with green grass. According to the rain gauge of Capt. Simms, the rainfall from the 23d to the 28th inclusive has been 3.10 inches, making a total for the season of 10.55. To make anything like the average we must have from 15 to 20 inches yet.

LOS ANGELES.

THE TRADE IN PELTS.—Los Angeles *Herald:* The trade in sheep pelts, in Los Angeles county, is very lively of late, the prices varying all the way from 10 cents to $1.25, according to the amount of the wool and the grade of the defunct sheep, 60 cents being a fair average.

MONTEREY.

ITEMS.—*Democrat:* The south wind which brought us the rain last week diffused an abundance of caloric through the atmosphere, imparting to the temperature the warmth of spring. The effect upon vegetation has been very decided, grain and grass growing this week more than they had done during the two months previous. The weather has been therefore as farmers would at present desire. The lambing season on the Gabilan rancho is resulting very satisfactorily. The ewes have had an abundance of grass and the percentage of lambs secured is unusually large. Mr. Monroe says he has marked 750 lambs of the pure Merino stock and that of graded lambs there will be about 7,000. Riding out to San Miguel canada Tuesday, we observed that the grain in the fields on either side of the road showed in a marked degree the impulse of the warm temperature prevailing this week. On the plain and hill-sides near De La Torre's house large bodies of grain showed a hight of eight or 10 inches. That particular tract of country from some cause failed last year, but promises this season to make up for that deficiency.

SANTA BARBARA.

RAIN AND RESULTS.—Lompoc *Record*, March 4: Altogether we have had 5.90 inches to date. The late storm has done a great deal of good in this section, giving renewed impetus to vegetation of all kinds and reviving the drooping

spirits of our farmers and business men. It has also had the tendency to reduce the price of hay and barley, causing some of our farmers to expose for sale stores of the former article, heretofore carefully hidden away in the brush. We have often been told that the pouring of spirits down was the best way to keep one's spirits up, but, judging from the cheerful countenances visible on every side this week, a good steady downpour of cold water accomplishes that result in a more thoroughly effectual manner.

SAN BENITO.

CROPS.—Hollister *Advance*, Mar. 3: The weather for the past week has been of the most favorable nature for crops. The heavy rain of last Sunday has been followed by warm days and nights, and the grain is shooting up like wildfire. The valleys and foothills are rapidly being covered with a mantle of green. Where, two weeks ago, there was nothing but bare ground, feed is starting up at a lively rate, and stockmen feel that the country is saved, so far as they are concerned. Early sown grain in many places stands as high as ten inches, and shows a strong growth. Late sown wheat will do even better. The prospects were never better this season than at the present time. Hay will be raised in plenty, and not a few of our farmers will have quite a decent little harvest of grain.

SANTA CRUZ.

PLANNING FOR A FAIR.—*Courier-Item:* The Directors of the County Fair Association met on Monday, the 27th, all being present, and incorporated according to law, and afterwards perfected their organization by the election of J. F. Chace, President; Martin Kinsley, Vice-President; J. O. Wanzer, Secretary; E. J. Swift, Treasurer. By-laws were adopted, and a committee on by-laws and one on finance appointed. E. J. Swift, M. Kinsley and J. W. Scott were appointed as an executive committee to conduct the general business of the association. The directors then adjourned to meet at the call of the President. The fair project may be said to be fairly under way, with fair prospects for a famous success. It is many years since as much interest and enthusiasm has been awakened in a public enterprise, and all that will be required to make it a permanent and profitable institution in the county will be the hearty co-operation of the class most directly interested, namely, the farmers themselves. If the farmers and fruit growers of the county will keep their mind's eye on this coming fair during the season, and not only preserve and exhibit their big cabbages and prodigious carrots, but prepare valuable statistics by taking measurement of crops, noting general results of culture, etc., they would both benefit themselves and be genuine philanthropists. There is no industry that pays better in the long run, or yields equal returns of home comfort and happiness than intelligent farming; there is none more repulsive or more profitless than ignorant farming. A county fair ought to be a farmer's institute as well as a grand exhibition. Let us make it such.

PAJARO VALLEY.—*Pajaronian*, Mar 2: Farmers in this valley feel well satisfied with the way the rains are coming this Winter. Not a drop is lost, and the rains come just far enough apart to keep the ground well moistened and in excellent condition for growing crops. At present the promise is first class for an unusually large cereal crop in the Pajaro valley, and if no accident, such as flood or blight occurs between now and harvest time, we believe the promise will be fulfilled. Our neighbors, in adjoining valleys, may find this a too dry winter, but the rains could not have come more satisfactorily than they have for the benefit of Pajaro valley farmers.

SAN DIEGO.

THE RAINFALL.—*Union*, March 4: Up to the present time the rainfall for this season is 7.67 inches, 6.99 inches having fallen since the first heavy rain in the middle of January. By consulting the tables we find that there has been a heavier rainfall during the past two months than has been recorded of any January and February during the past 10 years. According to the figures the rainfall since the 1st of January is 0.15 of an inch more than it has been in 10 years, and as the first rain came in ample time for the cropping season, we see no reason to doubt that we have the promise of one of the best crop years ever known in the county.

SAN JOAQUIN.

PROSPECTS ON THE ISLANDS.—*Independent:* A gentleman from the upper division of Roberts island was in the city yesterday, and gave a very encouraging report of crops in that section. The soil is in excellent condition, and a large quantity of land has been put in grain. Potatoes are also being quite extensively planted, and there is every indication that this crop will prove a most satisfactory success. The season has all along been propitious for the moist land of the island, and farmers generally will reap a good financial profit for their arduous labors. No apprehensions whatever are entertained regarding an overflow. This sense of safety this year, more than ever before, has been one of the incentives for planting so much more extensively on both divisions of the island. Staten island, north of the above, is all leased, except one tract of half a section, and planted almost entirely to barley, or is now being sown to this grain. It is to be hoped that all the expectations of the large and industrious class who are making their homes on the above island, will be fully realized.

SACRAMENTO.

LATE BLOOMING.—Folsom *Telegraph:* The severely cold weather that has so much retarded the growth of vegetation has also prevented the rapid growth and budding-out of fruit trees, consequently no injury from frost can be feared, and undoubtedly the coming season will prove most favorable for a large fruit yield.

VENTURA.

EDITORS PRESS: On the afternoon of the 25th a gentle rain commenced falling, and continued until the afternoon of the 26th, giving us an inch and a half. With a shower or two in March we will at least raise hay. This little rain has made a marked difference in the valley, both with nature and with human nature. Instead of the gloom of the past two months, countenances are wreathed in smiles.—R. W. C., Nordhoff, Feb. 27.

HORTICULTURE.

Prœparturiens, viz.: Dwarf Prolific Walnut.

EDITORS PRESS:—Many of your readers, it is reasonable to presume, are specially interested in fruits and fruit culture. Fruit culture in our State is becoming a matter of great importance, and at no distant day may be our first industry, overreaching, perhaps, the production of cereals, stock and even the products of our mines. We do not feel any reluctance in asking a little of your space to make another reply to Mr. Gillet. In your issue of the 4th inst. this gentleman contributed what might be termed *an article*, but he failed to establish his claim. The *Prœparturiens is a dwarf*, and we unhesitatingly say, if Mr. Gillet has a *standard walnut*, it is not a Prœparturiens. We make this positive statement and call upon Mr. Gillet to disprove it. We should be as much pleased as any other to learn his authority. This gentleman has written often for your widely-circulated paper, and we have no doubt many of your readers take a deep interest in his writings and will be glad to see another article from his fertile pen on this subject.

Who, Mr. Gillet, if you please, calls a walnut that attains even the moderate hight of 25 ft., Prœparturiens? Give his name, and whether he be French, Italian, English or American, or whatever his nationality, if he be of recognized standing, we will gracefully and fully award him the credit.

In my article of February 25th, I quoted Downing, Hogg, Ellwanger & Barry, and W. E. West of our own State. The leading European authorities accord to Ellwanger & Barry a very high place, and those of us who know Mr. West believe him entitled to high rank. Why did Mr. Gillet omit the mention of these gentlemen in his last article? I do not propose to beg the question, and I do not propose to take any advantage of Mr. Gillet on this question; but I do want the facts now that this walnut is under discussion.

On reading Mr. Gillet's article, especially when he makes mention of that "standard work" on pomology, "edited by some of the most renowned horticulturists of France," I became deeply, if not seriously interested, and thought I was about to be enlightened to such a degree that I would for the present, yes, and the future, too, discard our old, reliable Downing. But I was doomed to disappointment, as your readers, Mr. Editor, will be, when, like us, they read the following from "*Bon Jardinier*," the standard authority which Mr. Gillet refers to:

Page 396. "Noyer fertile, *Juglans præparturiens*, nouvelle variete, tres-precieuse; mise dans le commerce en 1837; elle fructifie a l'age de 2 ans, et se reproduit de semis. Sa noix est bonne a manger."

I have made this quotation exactly as published in this standard work, but as the French may not be understood generally by your readers, I take the liberty of converting it into our language, which is:

"Bon Jardinier," edited by Louis Vilmorin, Paris, France, and other eminent pomologists, page 396; *Juglans Præparturiens;* new variety; very precocious; introduced in commerce in 1837; bears fruit at the age of two years, and reproduces itself from seed; the nut is good to eat.

This is all that this famous book has to say about the walnut in question, though from Mr. Gillet's reference to it one would naturally expect several pages, giving its full history, size, habit, and the growth it attains at the age of 60 years. But it will be observed that there is not the slightest intimation given that it is a "standard," but on the contrary that it is a dwarf. "Precocious," fruiting when two years old, implies that it is a dwarf; it cannot imply anything else.

Disposed, after the foregoing disappointment, to follow up Mr. Gillet's references, hoping to find a better description in the "Pomological Dictionary," by Andre Leroy, we examined this voluminous work and found it as follows:

Vol. I. 389 varieties of pears.
Vol. II. 526 varieties of pears.
Vol. III. 258 varieties of apples.
Vol. IV. 269 varieties of apples.
Vol. V. 43 varieties of apricots.
Vol. V. 127 varieties of cherries.
Vol. VI. 143 varieties of peaches and nectarines.

Making in all exactly 1,755 varieties of fruits, which have 7,000 synonyms, and each with a history, description and figure, as Mr. Gillet represents. But where is the Prœparturiens walnut? There is not the slightest reference to it in this great voluminous work. Would it have been possible for Mr. Leroy, the so-called "originator" of this walnut (valuable as it is), to have overlooked it?

Will Mr. Gillet be kind enough to cite one or more other authorities, or name the volume and page of the "Pomological Dictionary" of Andre Leroy where the lengthy history, description, form, size and habits of the Prœparturiens walnut are given?

The works above mentioned are, Mr. Editor, recognized authorities on the subjects of which they treat, and we willingly place them within your reach, that you may examine them, and note whether we have misrepresented Mr. Gillet in the slightest degree. JOHN ROCK.

San Jose, March 7, 1882.

[With the above we received the books alluded to—*Bon Jardinier* and six volumes of *Dictionnaire de Pomologie, etc., par Andre Leroy*, the last published in 1879. So far as we could discover, the books agreed with the representations concerning them as made by Mr. Rock.—EDS. PRESS.]

Mr. Gillet's Prœparturiens.

EDITORS PRESS:—Last summer in Mr. Gillet's grounds I saw scores of Prœparturiens walnut trees three and four years old, as well as older ones, bearing large, healthy looking nuts. There was no appearance of dwarf about them; on the contrary, they were robust and thrifty. Several unimpeachable persons were with me, and all would testify to the same thing, as all agreed that the Prœparturiens, from its precociousness, made it the most desirable walnut known. As a small patron of Mr. Gillet, I will only add that so far as I have tested purchases from him, I have found his representations correct. R. H. BLISS.

Camptonville, Feb. 22, 1882.

The Assessed Acreage of the State.

The following table compiled by White & Lissak, shows the assessed acreage, and an estimate of lands seeded to wheat and barley, in each county of California, for the harvest year of 1882:

	Assessed Acreage.	Acres in Wheat.	Acres in Barley.
Alameda	423,629	155,000	48,000
Alpine	37,548	300	200
Amador	187,602	6,200	1,450
Butte	534 642	160,000	22,000
Calaveras	230,634	2,[illegible]00	3,500
Colusa	933,506	410,000	33,000
Contra Costa	453,397	115,000	21,000
Del Norte	63,738	350	150
El Dorado	214,856	1,700	1,250
Fresno	1,817,468	30,000	12,000
Humboldt	777,568	5,500	3,600
Inyo	62,093	1,500	1,300
Kern	1,114,359	27,000	7,000
Lake	182,644	7,500	3,500
Lassen	130,960	4,300	2,750
Los Angeles	1,356,594	48,500	29,000
Marin	319 802	3,600	5,900
Mariposa	567,162	750	1,800
Mendocino	745,167	25,000	9,000
Merced	1,012,694	160,000	13,500
Modoc	184 135	9,000	7,000
Mono	78,340	1,100	1,300
Monterey	930,933	121,000	55,000
Napa	327,173	49 000	7,000
Nevada	205,755	4,000	2,500
Placer	350,298	39,000	5,500
Plumas	205 337	2,500	400
Sacramento	605,626	46,000	35,000
San Benito	318,813	35,000	13,000
San Bernardino	432,748	4,500	7,000
San Diego	150 342	29,000	8,000
San Francisco	26,681	350	290
San Joaquin	858,291	290,000	40 000
San Luis Obispo	1,085 955	37,000	22,000
San Mateo	277,258	24,000	27,000
Santa Barbara	992,059	32,000	14 000
Santa Clara	536,425	158,000	33,000
Santa Cruz	256,630	14 500	9,500
Shasta	314,997	7,000	3,000
Sierra	160,472	230	150
Siskiyou	176.983	9,500	7,500
Solano	500 354	69,000	13,000
Sonoma	750,180	78 000	17,000
Stanislaus	780,7 5	298,000	21,000
Sutter	376,491	130,000	29,000
Tehama	891,145	135,000	24,000
Trinity	76,523	900	150
Tulare	1,157,762	75,000	16 000
Tuolumne	182 771	7,300	2,500
Ventura	488 310	22,000	24,000
Yolo	545,035	105,000	21 500
Yuba	269,587	34,000	9,000
Totals	25,677 115	3,031,580	695,250

Acreage in Oats, approximates 97,000
do, in Corn, do 145,000
do, in Rye and Beans, approximates 165,000

AN EXPERIENCED COMMUTER.—The thousands who ride to and fro each day from the stations n the suburbs of San Francisco, may be interested in knowing that the champion commuter of this country is Marcus C. Hawley, the well-known dealer in agricultural implements. A recent issue of the Newtown (Conn.) *Bee* has an interview with Mr. Hawley, in which it appears that he has for the last 31 years averaged five trips a week to New York from Bridgeport and for a number of years six trips. The distance to New York from Bridgeport and return is 112 miles. Averaging five trips a week, it makes about 30,000 miles a year, and that for 31 years makes over 900,000 miles, 50 times around the globe. In addition to this, Mr. Hawley has made over 15 round trips to and from California, without speaking of journeys to Europe, etc.

WELL REPAID.—A subscriber at Carpinteria, Santa Barbara county, writes: "I have been a constant reader of your paper since 1873, and I have been many times repaid for all the money I have paid for it."

News in Brief.

EGGS sell for $1 50 per dozen at Hailey, Wood River.

IMPORTANT arrests of Nihilists have been made at Odessa.

THERE are serious signs of a movement among the Poles.

THE Oswego Iron Works, Oregon, turn out about 18 tons of iron a day.

THERE are nearly 5,000 workers in the woods and mills between Noyo and Cuffey's Cove.

THE levees between Vicksburg and Helena are covered with stock in a starving condition. Several rafts, with whole families aboard, have been seen floating down stream.

SINCE the flooding of the Gold Hill mines, the flow of water through the Sutro tunnel has been considerably increased. It now averages 7,205,933 gallons per 24 hours.

THE back water from the Mississippi river extends up the White river to Clarendon, Ark., a distance of 135 miles from the mouth. The entire country intervening is under water.

BY the explosion of a barrow of matte, John Raber, an employee of the Montana Copper company, at Meaderville, M. T., was severely burned about the head and face last week.

MILTON S. LATHAM, formerly Governor of, and U. S. Senator from, the State of California, died in New York this week. He was an old Californian, well known all over the coast.

THE Tucson, A. T., gas works are nearly completed, and the city will be lighted on the 25th of March. The works will cost $120,000, and will have a capacity of 32,000 feet of gas.

THE recent rains brought the long wished for freshet to the streams in Mendocino county, enabling the lumber men to send down their logs. Many thousands were floated down to the sea.

A SIXTEEN-MULE team pulled out from Winnemucca for Silver City, I. T., recently, which, together with the freight wagons attached, covered 150 ft. in a straight line. The train was laden with 125,000 lbs. of merchandise.

REFUSE cedar is likely to become of marketable value. Puget sound loggers have been instructed to forward all the refuse cedar that can be obtained, in consequence of a sudden demand for that kind of lumber in South America.

IN a communication of the Secretary of War to the Senate, a letter from General Sherman is enclosed, in which he says that four-fifths of the army have been for the last 10 years engaged west of the Mississippi, looking after Indians.

THOMAS B. H. STENHOUSE, San Francisco correspondent of the New York *Herald*, died in this city on Tuesday. At one time in his life he was a resident of Utah, and a Bishop in the Mormon Church. Mr. Stenhouse was well known on this coast.

PANAMA advices to the 26th ultimo say: The American Bark, *Legal Tender*, is in port with a cargo of redwood lumber from Eureka, Humboldt county, Cal. There is a good demand for redwood lumber of all kinds, as it is very durable, does not shrink, and the ants, which destroy almost all varieties of pine lumber and timber, do not touch it.

A SUCCESSION of earthquakes occurred at Merced Monday. They continued a number of seconds, and were so heavy as to cause an unceremonious adjournment of the Superior Court in the midst of an important criminal trial, the judge, jury, attorneys, officers and prisoners rushing pell-mell down stairs and out into the court-house yard. At 1:57 two quite severe shocks of earthquake were felt at Santa Cruz, lasting several seconds. Shocks were also felt at Gilroy, Monterey and Watsonville.

WOOL GROWERS' ASSOCIATION.—It seems that the Mendocino county wool growers are proceeding to put their organization into working order for the coming clip. They propose to handle their wool themselves, pack it and ship it, thus saving the commissions of middlemen, and being able to take advantage of any changes in the markets. At a recent meeting of the directors a committee was appointed to secure a warehouse, and F. O. Townsend was instructed to ascertain the cost of a press and particulars of the business of preparing and shipping wool.

MATTESON & WILLIAMSON.—This well known Stockton firm of iron founders and manufacturers of agricultural implements is fully engaged with new work at their establishment at the corner of Main and California streets. Their building is 75x100 ft. and is three stories high with a basement. Power is furnished by an engine of 45 horse-power, and from 35 to 60 hands are employed. The establishment is a busy one in all its departments.

FRESNO.—Messrs. Thos. Hughes & Sons report encouragingly of real estate improvements about Fresno. Some time since they sold Mr. Fisher, of Stockton, 960 acres of irrigable land adjoining the Fresno colony, within 3 miles of the city. Mr. Fisher intends improving the same in orchard and vineyard next season.

THE BEST FARMERS' PAPER.—J. A. Long, of Red Bluff, Cal., writes: Inclosed find $3, payment for another year's subscription to the RURAL PRESS. I have taken it for several years and don't wish to be without it. I consider it the best paper a farmer can take.

The Press and the Plow.

We envy not the princely man,
In city and in town,
Who wonders whether pumpkin vines
Turn up the hill or down;
We care not for his marble halls,
Nor yet his heaps of gold,
We would not own his sordid heart
For all his wealth twice told.

We are the favored ones of earth,
We breathe pure air each morn,
We sow, we reap the golden grain,
We gather in the corn:
We toil—we live on what we earn,!
And more than this we do
We hear of starving millions round,
And gladly feed them, too.

The lawyer lives on princely fees,
Yet drags a weary life,
He never knows a peaceful hour,
His atmosphere is strife;
A merchant thumbs his yardstick o'er,
Grows haggard at his toil,
He's not the man God meant him for;
Why don't he till the soil?

The doctor plods through storm and rain,
Plods at his patient,s will;
When dead and gone, he plods again
To get his lengthy bill.
The printer—bless his noble soul!
He grasps the mighty earth,
And stamps it on our daily sheet,
To cheer the laborer's hearth.

We sing the honor of the PLOW,
And honor to the PRESS—
Two noble instruments to toil,
Each with a power to bless;
The bone, the nerve of this fast age,
True wealth of human kind;
One tills the ever-faithful earth,
The other tills the mind!

The Hygienic "Craze."

EDITORS PRESS:—Every man is said to be either a fool or physician by the time he's 40. Being in my 40th year only I reckon myself still on the fence, but trying hard not to alight on the fools' side! I have studied all sorts of ologies for the last quarter century; have used my "vile body" as a subject to be experimented upon; have even dabbled in chemical actions and reactions and filled the house full of villainous vapors and noisome gases before I was turned loose in breeches.

Earnestly desiring to be amongst the orthodox, somehow I can never get there. Orthodoxy, hygienic or religious, equally eludes my grasp. Even my farming is unorthodox for California. My farm keeps me employed all the year!

Perhaps your readers would like orthodoxy defined. A lady once asked Sydney Smith to define for her orthodoxy and heterodoxy. "Orthodoxy, my dear madam," replied Sydney, "is your doxy and my doxy; heterodoxy is every body else's doxy." If an American definition would be more acceptable, take Lowell's of heresy, or heterodoxy.

> There was heresy here, you perceive, for the right
> Of privately judging means simply that light
> Has been granted to *me* for deciding on *you;*
> And in happier times, before atheism grew,
> The deed contained clauses for *cooking you too.*

Now, I have no fears that "Aunt Jerusha" will cook me if I venture to dissent from any of her views as to "Our Eating," in last week's RURAL. But I do strongly object to being made the victim of conflicting hygienic "crazes."

We have, for the last few years, had it hammered into us that virtue and graham gems were correlative terms. Did one wish for pearly teeth, eat graham bread; were clear, lustrous eyes desired, eat graham bread; would you have power of brain, eat graham bread; fine curly hair, graham bread; good digestion, graham bread; in short, for the soundest of minds in the soundest of bodies—grand chorus shrieked—"Graham bread!"

Now comes a pamphlet from the Eastern States with a woodcut of two grains of wheat, one perfectly smooth and hairless, the other covered with such a coat of bristles as to cause a sensation of choking in the nervous and terrified beholder. "See those ugly bristles!" says the pamphlet of the "New Evangel" "That's what you eat! Every grain of wheat is coated with countless splinters of glass, which, if not removed by our new process, enter man's stomach, irritate his mucous membrane, make a haystack of his intestines, and a wreck of his health and happiness!" (This is my condensation of the pamphlet.) "O miserably misled grahamites, cease filling your bowels with these spiculæ of silex! Place nothing but pure nutriment in your œsophagus, and that only in the smallest possible quantities! So shall your days be long in the land and our new company pan out coin!" Attested by this, that and t'other M. D.

Orthodox M. D.'s, well primed in their "Carpenter," used to tell us that at least once a day our stomachs needed to be fairly well filled, and filled with food of moderate bulk as regarded the percentage of actual nutrients, and that coarse particles, as of bran, etc., contained therein, produced healthy intestinal action, etc., etc. "When doctors differ who shall decide?"

In this case, Messrs. Editors, the decision of one's stomach is all-sufficient. The very pleasurable sense of satisfaction derived from a well-filled waistcoat has long been known to the British poets. In that time-honored song, "The Roast Beef of Old England," we read, "The man that's well filled, sir, can *never do ill!*" So soothing and soporific does your correspondent find this reprehensible dinner-satisfaction, that he incontinently snoozes (of course under medical advice), finding his nervo-sanguineous, or sanguino-nervous, temperament benefited thereby.

As to the coarse particles, the tooth polishers, eye brighteners, etc., your correspondent is not so decidedly advised by his inward monitors or his M. D. So far as he is physiologically posted, the human body makes no heavy drafts on silica, after the enamel on the teeth is set for life. How far silicic-phosphates or phosphoric-silicates, or other long-tailed compounds contained in bran, are demanded, I know not. Nevertheless "brown bread" was toothsome to your correspondent when his eye-tooth cutting transpired, and so remains. Also being weed-like in his growth, silica (homœopathically) was administered as a straw-stiffener. A so-called "vegetable diet" is another "hygienic craze," unless physiology has been entirely misleading us. We used to have it drilled into us that man was made to be omnivorous; that long-intestined animals were consumers of greens, and short intestines were the property of carnivora; man (in company with the hog) was furnished with intestines of happy medium length, suited to digest a mixed diet. Now, forsooth, meats are classed as "impure," while vegetables, fruits and grains, plus milk and eggs, are "pure" articles of diet. Why, it would probably puzzle the classifiers to tell. You may tell such things to other immigrants, but not to this one. If I do not know that a plant and a fruit tree are dirtier livers than a cow or a sheep, I've cleaned my neighbors' corrals to small purpose. What "pure" things eggs are, let the chicken-ranchers testify! What is meant by "purity" in this connection is hard to see. There is on record a vision of various live-stock let down thrice from Heaven to a hungry apostle, and rejected by him as "common and unclean." Your readers may remember the angelic reprimand: "What *God* hath cleansed, *that* call not *thou* common."

Both hygiene and religion should be exact sciences. Both must be simple matters. But religion, instead of being an irrefragable law of *conduct*, a set of golden rules, lovingly cherished and ardently obeyed, has come to be very largely a quibbling as to *doctrines* that are acknowledged to be "past finding out;" and hygiene, which should be an equally perfect law of health, is too frequently an airing of hobbies.

Now, your hobby-rider mostly rides hard and incautiously. Your hobby-rider is apt to forget that what to-day passes for "science," often to-morrow proves to be "nescience"—sheer mistaken ignorance. Your hobby-rider, moreover, is prone to strain at gnats and swallow camels; denies himself tea, coffee and other stimulants, lest his nerves should sustain injury, and drinks water poisoned by cesspool seepage; admits to his stomach no such "*impure*" food as beef; and, by neglecting to use dry earth to disinfect his privy, contaminates every breath of air in the vicinity of his home; and, if living in a village, sows broadcast the seeds of typhoid fever and diphtheria among his neighbor's children.

If some one, who has time and inclination to take up the *role* of sanitary reformer, would teach Californians the first elements of true decency in this matter of the proper disposal of night-soil, by the simple admixture of dry earth, and legislate these death-dealing cesspools out of our land, "the world would be the better for it." The debris question, or any other question, is small by the side of the question as to whether our families are to be decimated periodically by preventible diseases.

EDWARD BERWICK.

Carmel Valley, February 28, 1882.

Who Was She?

"Mr. Smith, this is *my woman*," said a well-dressed gentleman, sitting in front of us on the cars a few days since.

He was introducing a well-dressed, well-appearing, good-looking lady, sitting at his side, to a gentleman on the seat before them. The lady was some years younger than the gentleman, and at once we thought "Who is she?" Is she his wife? Why did he not, with the pride of a true husband of the lovely woman she appeared, proclaim to the world the relation she bore to him?

My woman is much like my dog or my horse, is doubtful in its meaning, at best conveys the idea of ownership by purchase or lease.

My woman may be a servant or an attendant, and even if such be the relation, would it not be as well to give the name, as Mrs. or Miss, as to use the doubtful term, my woman, which like *lady* on the hotel register, as John Smith and lady, has a doubtful significance. Why not say wife or Mrs. Jones. Give the true name.

My woman will soon become my old woman, and perhaps may, in time, be referred to as my other woman, and who knows what.

Be a true man, and be specific when speaking of your wife as you would sister or mother. Say my wife, as you do my sister or my mother.
—*Grange Bulletin.*

Aunt Sarah's Fortune.

An elderly woman, with a sharp, shrewd face, and bright little eyes, and resolute look around her mouth. A homely, outspoken woman, who was proud to say she had never been in love, who lived in luxury, although (on a small scale, and who had £20,000 in 3% consols to leave to her relations when she died; and in all the world she had but two relatives, Mrs. Lazenby, her married sister, and Robert Peyton, her half-brother, who, besides being inordinately jealous that their uncle had left Sarah Peyton his fortune, were very much given to toadying her, and writing affectionate letters to her, and loading her with presents, and forcing invitations on her; all of which Miss Peyton accepted in a matter-of-fact way, and in return did exactly as she pleased.

This especial afternoon, as she sat meditatively before the fire, she suddenly broke the stillness, with an energy of speech that made the young girl reading in the bay-window, nearly concealed by the curtains, look startled up from her book:

"Esther, you're a fool!"

Evidently Esther Lorton had not lived five years as companion to Miss Peyton in vain, for she maintained no surprise at the rough speech, beyond the swift, startled look in her soft brown eyes.

"Do you think so, Miss Peyton?"

"Most certainly I think so, or I shouldn't have said so. You are a fool, and I hate to see you throw yourself away so foolishly. Do show your common sense, if you've got any, and let that young jackanapes of a doctor go. You're better off without him."

"I could not give him up, Miss Peyton, I love him too well."

"What nonsense! You love him too well! Love, indeed! It's all absurdity. I never was in love in all my life!"

"I—can't help that, Miss Peyton. I love Angus, and he loves me. Please don't tell me I must give him him up! Indeed, it is impossible! We are engaged to be married as soon as he comes back from his visit home."

"Engaged to be married to Angus Keith! Did I ever! Well, Miss Lorton—*very* well! I am going to London on a visit to-morrow, and I'll be home on Thursday. When I come back, don't let me find you here, you ungrateful little wretch—you!"

"Miss Peyton! You don't mean—to—turn me away?"

"That is just what I mean! I have told you time and again, I didn't approve of love-making, and I won't have it where I am! You can take your choice—me or Doctor Keith. I'll give you just five minutes."

"I don't want five minutes for a choice, Miss Peyton," she said, proudly. "You have been very good to me, and I cannot forget your kindness; and I think I have done my duty to you; but no one could come between me and Angus."

"All right, then. Don't let me see you here when I come back—that's all!"

It was just half-past seven next evening when the cab deposited her at the door of Mr. Lazenby's house in Russell Square, a comfortable, cozy place, with the name on the door in full.

A servant showed her in and asked her name; but Miss Peyton wanted to surprise her sister, and sent word that a friend wished to see her, while she seated herself in the drawing-room, where a little girl sat curled up in a cushioned chair, reading.

"You want to see mamma, I suppose?"

"Yes," said Miss Peyton, with an affable smile. "You are Sarah, I suppose?"

"Yes, I'm Sarah. Oh, don't I hate that name!"

"Why, I think it's a very good name. You are a namesake of somebody, I suppose?"

"Yes. Old Miss Peyton, my aunt, who lives in the country. I never have seen her, and I don't want to, either, 'cause mamma says she is the meanest thing in the world—a regular old Miss Nancy, papa says."

"Oh, that's what they say, is it? Well, I am your aunt Sarah."

"Are you? Then won't mamma be cross! We expect company this evening, and mamma won't want you at all. She'd be dreadfully ashamed of you before her friends. You're going to leave us your money, ain't you? Papa and mamma said they were most tired of waiting—you had as many lives as a cat. We're going to have a carriage and pair when you die!"

"Are you?" said Miss Peyton, with an insane desire to shake the pert, self-possessed, venomous youngster. "Well, I wouldn't depend upon it, if I were you."

And before Mrs. Lazenby came down stairs, Miss Peyton was on her way to her half-brother's.

"A pretty nest of vipers! Thank heaven I've found them out in time! Going to set up a carriage on my money! Why, ungrateful as Esther is, she isn't as treacherous as my own flesh and blood. Humph!"

And her complacency was not yet restored when she arrived at her half-brother's bachelor quarters, that was alight in a perfect blaze of brighter cheer.

"It looks like a party," she thought.

But she did not hesitate to ring the bell, to which no response coming, she tried the door handle, and admitted herself into a large, brilliantly-lighted hall, at the end of which was a room, from which came the sounds of revelry and jollification that had prevented her ring being heard.

Miss Peyton went into the first door that stood ajar, and through another partly-closed door she saw the gay bachelor party—some 10 or 15—merry over their wine.

"So that's the way Robert does, is it?" she asked herself, just as that gentleman's voice rose high, and silenced all others.

"Here's to the health of my respected ancient marineress, a veritable old maid, all forlorn, whose legacy is a long time coming, but sure to get here some time. A cool £20,000 or so, boys; and imagine the dash we'll cut when the venerable Sarah kicks the bucket!"

Somehow, Miss Peyton took herself silently out of the place. She was silent all the way to the hotel; and then, once in her room, locked her door, and sat down and—actually cried, and then went to bed, wondering if it was ever granted to mortals to come nearer to being made a fool of than she had been; and at two o'clock in the morning to awaken with a strange, sick feeling that was awful to endure in that big, lonely hotel, where she didn't know a living soul.

But she rang for assistance and the servant brought her a physician, who happened to be staying over night, and Miss Peyton was saved from a severe attack of illness.

"I'll pay you when I get home," she said, tersely. "You can go with me, if you don't mind my green veil and bag."

And so, after reaching home, where Esther Lorton was waiting for her return, to leave by a train an hour later, Miss Peyton stalked in, followed by Dr. Keith.

"You needn't be frightened, Esther," she said, in a wonderfully soft tone of voice. "I've changed my mind. I'm the fool, not you. Here's you're lover; you can have him and welcome. And when you're married, I'm going to settle my fortune on you, and let you live here, if you'll give me a room somewhere. I've changed my mind, I can tell you, Esther Lorton. Take off your things, and go and get a cup of coffee for us."

And that was the way little brown-eyed Esther came into her double inheritance of love and fortune.

Mother.

Don't call your mother "old woman." Let her always be "mother." "Old lady" is bad enough, but the "old woman," applied to her who gave you life and nursed your infancy, is rude and unkind. A writer has these reflections upon it:

Once it was, "Mother, I'm very hungry;" "Mother, mend my jacket," "Mother, put up my dinner;" and then mother, with her loving hands, would spread the bread with butter and stow away the luncheon, and sew on the great patch, her heart brimming with affection for the impetuous, curly little pate that made her so many steps and nearly distracted her with his boisterous mirth.

Now, she is the "old woman," but she did not think it would ever come to that. She looked on through the future years and saw her boy to manhood grown, and he stood transfigured in the light of her own beautiful love. Never was there a more noble son than he, honored of the world, and the staff of her declining years.

Ay, he was her support even then, but she did not know it. She never realized that it was her little boy that gave her strength for daily toil, that his slender form was all that upheld her over the brink of a dark despair.

She only knew that she loved the child, and felt that amid the mist of old age his love would bear her gently through its infirmities to the dark hall leading to life beyond.

But the son has forgotten the tender ministrations now. Adrift from the tender moorings of home, he is cold, selfish, heartless. "Mother" has no sacred meaning to the prodigal. She is the "old woman," wrinkled and gray, lame and blind. Pity her, O grave, and dry those tears that roll down those furrowed cheeks! Have compassion on her sensitive heart, and offer it thy quiet rest, that it may forget how much it longed to be "dear mother" to the boy it nourished through a careless childhood, who, in return for all this wealth of tenderness has only given back reproach. Reader, are you guilty of like ingratitude?

THE SUNNY SIDE OF DEATH.—Take the sunny side of death. Sooner or later it must come to all, and at the latest it is only a few swiftly-passing days distant. Kings and potentates have no refuge from the summons of the dread messenger. Death is the great leveler of man, and dust to dust is the heritage of all. Why, then, should we shrink from its contemplation? Why banish it from our thoughts with a shudder? It is not rational to permit death to shadow our lives; nor is it rational to turn in terror from what must as surely come as to-morrow's sun. Those who are suddenly chilled day after day by the thoughts of death, either shadow their lives by misdeeds or reject the philosophy that should make every well-ordered life wait serenely for its end. The rational apprehension of the upright man is, not that he may fall too soon in the race, but that he may linger too long and outlive everything but hope.

CONSCIENTIOUS Guard—I'm afraid, sir, the young lady can't be permitted to travel on a half-ticket; she's much over 12 years of age. Irate Papa—Do you mean to inform me, sir, that my daughter and I are endeavoring to swindle the railway company? Let me tell you, sir, that we've never been so grossly insulted on this line before, although we've both traveled on it for over 15 years.

Chaff.

FOOD for reflection—Eating a large supper and going to bed to lie awake and think about it.

QUERY—When a man has his teeth stopped ought he to charge the cost to inci-dental expenses?

"WHAT'S that fellow doing, John?" "Why, he's a naturalist." "What's that?" "Why, one who catches gnats, to be sure!"

IF a two-wheeled vehicle is a bicycle, and a three-wheeled a tricycle, it does not follow that a one-wheeled is an icicle. It is a wheel-barrow.

"FATHER, did you ever have another wife besides mother?" "No, my boy; what possessed you to ask such a question?" "Because I saw in the old family bible where you married Anno Domini, in 1835, and that isn't mother."

Rural Improvement.

Remarkable progress has recently been made in rural improvement. Here and there a single association to promote village improvement was long since formed. But systematic efforts to multiply these associations are of recent origin. Such efforts have been most persistently made in Connecticut. A dozen years ago the superintendent of schools in Connecticut offered to "lecture on this subject, without charge either for services or expenses, in any town in the State." For a time the offer met no response, and even for three years few invitations were received. The project was "chimerical" and "sentimental." That it would encounter misapprehension and ridicule, I predicted. Though always confident that results would ultimately reverse such first impressions, the change came sooner than I expected, and now this work commands the sympathy and co-operation of the wisest and best men of the State. Gov. Bigelow, in his message to the legislature in January last, expressed his high appreciation of what had been done in this direction, and strongly commended this movement as "worthy of all support." A prominent New York paper then said, in reference to this advocacy of rural improvement in his inaugural address: "Governor Bigelow has taken the lead of other States in this matter, and has set a noble example to them all."

Though no part of my official duties, but only a by-play, or rather a volunteer avocation, in addition to my proper vocation, my interest in this work grows with years and results. Over 50 associations for rural improvement have been organized in Connecticut. I have also aided in forming over 100 such associations in the other New England, Middle, and Western States. This movement has worked its way across the continent. Thriving associations are doing their beneficent work in Minnesota, Kansas, California, and indeed in almost every Northern State. The associations in Berkeley and Santa Barbara, in California, are now initiating a movement which in five years will be likely to attract the attention of the entire State—for this work is contagious. One example makes another. The grand example of Berkeley cannot fail to make many others. With our returning prosperity there is already a growing and wide-spread movement to adorn and improve our country towns. Far more has been accomplished the last season than in any former year. The matter can no longer be treated as a fine theory or mere experiment. The man who asks for the practical tests can be pointed to many towns where these associations have manifestly done great good in cultivating public spirit, quickening social and intellectual life, fraternizing the people, improving the sanitary conditions, enhancing the value of real estate, and increasing the charm and attractions of domestic life. Gratifying as are the results already achieved, they are a mere beginning compared with what ought to be and will surely be when the subject is fully appreciated. While grateful that something, however humble, has lately been accomplished in all the towns of Connecticut, especially around the homes and grounds of our citizens, this effort should not be slackened till an efficient association is formed in every township. It has long been my aim to improve the *homes and home life* of our people, and to help them realize that the highest privilege and central duty of life is the creation of homes. The best product of Christian culture is a refined and happy home.

Every influence should be combined to foster home attachments. Patriotism itself hinges on the domestic sentiments. When one's home—like that now hallowed ground at Mentor—becomes the Eden of taste and interest and joy and love, those healthful local ties are formed which bind him first and most to the spot he has embellished, and then to his town, county, state and country. Whatever adorns one's home and ennobles his domestic life strengthens his love of country and nurtures all the better elements of his nature. On the other hand, the nomad, with no local attachments, can have no patriotism. As content in one place as in another; and truly happy nowhere, he is like a tree planted in a tub, portable indeed, but at the expense of growth and strength. "To Adam Paradise was home; to the good among his descendants home is paradise," is an old saw, fit to be ever new in its realization, like Goethe's saying, "He is happiest, be he king or peasant, who finds his happiness at home."—*B. G. Northrop, in Our Continent.*

Young Folks' Column.

Our Puzzle Box.

Literary Enigma.

This enigma is composed of 67 letters.

The 35, 37, 8, 61, 28, 31, 16, 46, 4 was the author of "The Traveler."

The 64, 34, 57, 42, 9 was pronounced "The English Aristophanes."

The 15, 2, 7, 41, 56, 13, 26 was a great lexicographer.

The 6, 62, 1, 3, 36, 14 was one of the greatest of English poets.

The 4, 5, 66, 32 was an English historian and skeptic.

The 10, 12, 58, 26, 43, 27 was an old writer and translator of Arabian scientific literature—sometimes called "The Philosopher."

The 11, 57, 20, 35, 64, 67, 43, 52, 34, 22, is an American poet.

The 17, 19, 40, 45, 39, 26 was a distinguished scholar, diplomatist and traveler.

The 43, 21, 26, 60, 54, 18, 25, 24 was the probable author of a celebrated enigma often claimed by Lord Byron's editors.

The 23, 49, 59, 35, 47, 63 was a London publisher of considerable repute in the early part of the present century.

The 29, 30, 26, 33, 62, 20, 35 was an old English Chronicler who prepared a "Metrical Chronicle of England" from the earliest times to the reign of Henry IV.

The 46, 55, 59, 43, 26, 59 was an eminent French historian.

The 33, 48, 20, 44 is an American scientific writer.

The 50, 16, 39, 61, 59, 49 was an eminent English biographer, celebrated by his brother as "Poor Tom Bowling, the darling of our crew."

The 51, 53, 26, 60, 41 was a Scotch poet.

The 65 is contained in "Daniel Deronda."

The whole is a beautiful couplet by Pope.

CLAUDE REVERE.

Transpositions.

(Fill the blanks with the same words transposed.)

1. Are you —— that your —— will succeed?
2. —— men will —— the boat.
3. I saw —— —— your book.

JERRY.

Hidden Trees

1 Has he gone yet?
2. Let Abel make it right.
3. If I get there first I'll wait.
4. They sold at eight cents apiece.

J. I G.

Curtailments.

1. Curtail a number and leave a castle; again and leave in place of.
2. Curtail to long and leave a division of time; again and leave an affirmation.

LEO P.

Syllable Puzzle.

1, The entire part; 2, however agreeable to the palate is really a *fowl* fruit; 3, dried grass; 4, not far away; whole, a range of mountains in the United States.

S. S. B.

Answers to Last Puzzles.

RIDDLE.—Light.
HIDDEN TOWNS.—1. Gray. 2. Winn. 3. China.
SYLLABLE PUZZLE.—New-found-land.
CROSS-WORD ENIGMA.—Milton.
REVERSALS.—1. Rood, door. 2. Rail, liar. 3. Draw, ward. 4. Hoop, pooh. 5. Garb, brag. 6. Gig, gig.

Keep the Soul on Top.

Little Bertie Blynn had just finished his dinner. He was in the cozy library, keeping still for a few minutes after eating, according to his mother's rule. She got it from the family doctor, and a good rule it is. Bertie was sitting in his own rocking-chair before the pleasant grate fire. He had in his hand two fine apples—a rich red, and a green. His father sat at the window reading a newspaper. Presently he heard the child say:

"Thank you, little master."

Dropping his paper, he said; "I thought we were alone, Bertie. Who was here just now?"

"Nobody, papa, only you and I."

"Didn't you say just now, 'Thank you little master?'"

The child did not answer at first, but laughed a sly laugh. Soon he said:

"I'm afraid you'll laugh at me if I tell you, papa."

"Well, you have just laughed; and why mayn't I?"

"But I mean you'll make fun of me."

"No, I won't make fun of you; but perhaps I'll have fun with you. It will help us digest our roast beef."

"I'll tell you about it, papa. I had eaten my red apple, and wanted to eat the green one, too. Just then I remembered something I'd learned in school about eating, and I thought that one big apple was enough. My stomach will be glad if I don't give it the green one to grind. It seemed to me for a minute just as if it said to me: 'Thank you, little master;' but I know I said it myself."

"Bertie, what is it that Miss McLaren has been teaching you about eating?"

"She told us to be careful not to give our stomachs too much food to grind. If we do so, she says, it will make bad blood, that will run up into our brains, and make them dull and stupid, so that we can't get our lessons well, and perhaps give us headaches, too. If we give our stomachs just enough work to do, they will give us pure, lively blood, that will make us feel bright and cheerful in school. Miss McLaren says that sometimes when she eats too much of something she likes very much, it seems almost as if her stomach moaned and complained; but when she denies herself, and don't eat too much, it seems as if it was thankful and glad."

"That's as good preaching as the minister's, Bertie. What more did Miss McLaren tell you about this matter?"

"She taught us a verse one day about 'Keeping the soul on top.' That wa'nt just the words, but it's what she meant."

"Weren't these the words: 'I keep my body under?'"

"Oh, yes! that was it; but it means just the same. If I keep my body under, of course my soul is on top."

"Of course it is, my boy! Keep your soul on top, and you'll belong to the grandest style of man that walks the earth."

Domestic Economy.

Culinary Reform.

EDITORS PRESS:—By RURAL PRESS of Feb. 18th we know that Aunt Jerusha is not silenced, for there she raises her war weapon against our eating, calling on the "Women of California, let's get up a revival!" A revival of what; the finger-and-tooth, raw-meat diet (natural?) of the palmy days of King Arthur's time? Perhaps it would give more time for frilling and frizzing.

Aunt Jerusha! "no more pie,"—no more pumpken pie, nor even peach cobbler? Being of the male persuasion, the thought comes with a sigh. However, as for your "*poor* rich cake recipes," yes, burn them, so say I. But then are there deleterious substances in sugar that you could not give us a *good* poor cake minus the spice and butter, or is the culinary art in its infancy? I think it is.

And you ask, Aunt Jerusha, "Mothers, do you realize that you are destroying your children, both body and soul?" Of course they do not! for the mass of mothers do not know of what the body is made, let alone the soul, how made and repaired, or what effect any particular diet or style of cooking may have—know nothing of what will best make bone, harden the muscle, purify the blood, or of brain food. Is it their fault? Were *they* taught?

Aunt Jerusha, you gently touched the keynote when you said, "I really believe that such dissipation results in more than hard drinking." Uncle Horace is a little more radical, and believes that bad cooking is the first great cause of hard drinking. What more natural than for a person with a foul stomach to want a stimulant, which leads to hard drinking, and that to many other evils. Bad cooking is the prime mover. I boldly assert that bad cooking fills our poor-houses, makes inmates for the asylums, fills to overflowing prisons and jails, making criminal courts necessary, and perhaps courts of justice, also, as well as "meeting revivals" and "temperance lectures"

It is not necessary to reason scientifically (nor could I), step by step, from cause to effect. Everybody knows that they are better, morally, when digestion is good, and more inclined to bad acts when soured by indigestion. Generations upon generations of bad cooking makes of a bad inclination a thoroughbred trait; hence criminals constitutionally. Bad cooking does not consist alone in mixing the greatest possible amount of soda, sugar, lard and spices, with the least possible amount of the staff of life, but is felt in the soggy potato. Even plain fare may be robbed of its nutrient properties.

There are some fairly good hygienic cooks, but the reverse is the rule. And whose fault? The man's that likes pumpkin pie? Inferior cooking is patent; where is the remedy? Yes, Aunt Jerusha, "invade the sanctity of every kitchen with warning words of fire!" Perhaps the effect might be amelioration for present generations. But for the permanent good of coming ages, let's establish (not shake) foundations for happy homes at the school room, with the prospective mothers, by giving them a thorough education in physiology and chemistry, even at the expense of other sciences, making those studies compulsory, giving no graduating diplomas or teachers' certificates except well informed in these studies that are all important. Even make the marriage license hinge on being hygienists in the culinary art. "It's time to demonstrate that morality is a physical and geometrical science," and to revolutionize.

UNCLE HORACE.

Visalia, Cal.

The Cook in Exile.

EDITORS PRESS:—Seeing you took interest enough in my experiments on the grainia-fruit diet to copy one of my articles from the New York *Tribune*, I have thought, as an old correspondent on other subjects, it would be as well to send you a line direct upon the same subject by way of explanation to my many friends for my adopting this, to them, strange way of living, and reasons for continuing it, as we probably shall, the rest of our lives. I had often wondered what would be the effect for a person to live, or try to live, exclusively on grapes, and was studying over the idea when, hearing that those who had been somewhat notorious at Anaheim for living on uncooked food for three years past had returned to the slavery of the cook-stove, like the Israelites going back to the flesh-pots of Egypt, I took the liberty of writing a letter of inquiry to G. R. Hinde. On receiving an answer to the effect that they had no idea of going back to the devitalized food, but had every reason for continuing in the course begun, I concluded to try it for a week or so, and finding the results so remarkable and advantageous, I continued, until it now seems to me strange that anyone could be willing to spend valuable time destroying by fire the fine qualities of fruit and grain, then try to make up for the loss by the addition of salt and sugar, which, in a natural diet, there is no call for, besides suffering ill health more or less of the time as a consequence, and especially in a professed Christian nation where we would naturally expect people to glorify God by living so as to be continually in good health instead of living to gratify an unnatural animal appetite.

As a Christian, it appears to me to be my duty to so live as to have the best health; and if in doing so, I can set an example which, if followed, would relieve the toiling millions of worn-out mothers from the largest part of their drudgery, so that they will be in better condition to raise and have more time to care for the coming generation, I will indeed be thankful. As for those who like to devote their time to cooking, let them enjoy it, and if from the flesh-pots they get perfect health, such as one should have who professes to be a follower of Him who denounced sickness as sin, by saying unto the sick man: "Thy sins be forgiven thee," then let them continue on in that way.

I find, wherever there has been an opportunity to test it, that children take readily to this way of living, and I hope, especially in a fine country like California, they may have more chances to do so. I shall take special pains to find the best form in which to use our natural products, and would be thankful to any one of your readers who are interested to give me the results of any experiments they may make, with such analysis of seed, plants, etc., as may be in their possession or can be procured by them, particularly the seed of grapes and tomatoes, both of which, especially the former, seem to me very valuable. As may be seen by reference to my letter in the *Weekly Bulletin*, of December 21, 1881, "Cheap Living," this diet is not an expensive one, and, if we count the saving of the wages of a cook, his fire, etc., besides doctor's bills and loss of time by sickness, the expenses compared with the old way are as nothing.

ISAAC B. RUMFORD,
S.E. Community, Bakersfield, Cal.

Good Health.

RAPID BREATHING AS AN ANÆSTHETIC.—Dr. M. T. Yates, in a letter published in the *Biblical Recorder*, says of the surgical operation to which he has recently submitted: "My doctors said that they had seen it stated by an American doctor that if a person would breathe as rapidly as possible under an operation, he would not feel the pain of cutting, and they wished to try it on me, to which proposition I assented. Dr. MacLeod superintended the breathing—which was like that of a dog on a hot summer day—holding, out of my sight, a handkerchief in his hand, to be dropped as a signal when he saw the color come to my face, for Henderson, the operating doctor, to go ahead. When MacLeod told me, 'That will do,' I was surprised to find that the operation had been performed. This I have tried three times, and have not at either time felt more pain than is usually inflicted in the case of vaccination. I heard the knife rip through the flesh like the sound produced in cutting leather, but did not feel the pain. What is the philosophy of this kind of an anæsthetic? Is it simply a diversion of the mind?—*Richmond Herald.*

SUGAR MEAL.—A new danger has appeared in feeding "sugar meal," which is sold by the glucose factories for fodder. This meal is supposed to be the non-starchy part of corn, and to have come in contact with nothing but water in the course of its preparation. If this were true there ought to be no harm in feeding it when fresh. The fact is, that in the vicinity of Buffalo, N. Y., it has gained the reputation of sour meal, from its strong acid taste. An unusual amount of cholera infantum has lately prevailed in a city in the western part of New York State, which is claimed to be due to the acid in the milk of the cows fed on this meal. Cheese-makers have had such bad luck in making cheese, which they claim, also, is due to the acid in the meal, that they have, in many instances, refused to receive milk from dairies where this milk is fed.

AILMENTS PRODUCED BY TURPENTINE FUMES. The effects of turpentine on some 300 painters having been studied by a French physican, he now publishes the conclusions, namely, that these effects can never be so severe as to cause death, unless they be volatilized in an extremely confined space—also, that where there are free movement and good ventilation, no liability to fatal accidents exists. The vapors of turpentine coming from different sources, it appears, have not all the same energy, that of the French product, for instance, being far less injurious than the Hungarian or American. The most general form of indisposition exhibited—usually mong new workmen, and directly attributable to the turpentine—are headache, watering of the eyes, coryza, cough gratulations on the larynx, and disordered digestion.

ROAST PORK is the hardest food to digest known to the domestic table. It requires over five hours for the process after being taken into the stomach. Boiled rice will digest in one hour, roast or boiled mutton in three hours, turkey in two hours, beef, fried, four hours, roast or broiled, two and a half hours.

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SAN FRANCISCO:
Saturday, March 11, 1882.

TABLE OF CONTENTS.

EDITORIALS.—Windmills; Notes on Vine and Tree Planting, 169. The Week; The Packers' Exchange; Notes on Irrigation; Blackleg on Cattle, 176. The Ruhl Lift and Suction Pumps, 179. Cellular Growth of Plants; Fraudulent Butter, 177.

ILLUSTRATIONS.—Design for Tank House with Althouse Windmill, 169. Cell Growth and Multiplication as seen with the Microscope, 177.

CORRESPONDENCE.—Los Angeles County Notes, 170. A National Railroad Proposed; Uses and Growing of Bamboos, 179.

THE FIELD.—Bluestone and Smut, 170.

THE STOCK YARD.—Beets as Cattle Food; Animal Combustion, 170.

SERICULTURE.—The Silkworm—Its Education and Reproduction, 171.

THE SWINE YARD.—How to Choose a Poland China Boar, 171.

PATRONS OF HUSBANDRY.—Declaration of Principles; Meetings and Elections; San Diego Citrus Fair; Carrying Wheat from the San Joaquin Valley; Lodi Co-operative Association, 172.

AGRICULTURAL NOTES, from the various Counties of California, 172-3.

HORTICULTURE.—Praeparturiens, viz.: Dwarf Prolific Walnut, 173.

HOME CIRCLE.—The Press and the Plow, (poetry); The Hygienic "Craze;" Who Was She; Aunt Sarah's Fortune; Mother; The Sunny Side of Death, 174. Chaff; Rural Improvement, 175.

YOUNG FOLKS' COLUMN.—Our Puzzle Box; Keep the Soul on Top, 175.

DOMESTIC ECONOMY.—Culinary Reform; The Cook in Exile, 175.

GOOD HEALTH.—Rapid breathing as an Anæsthetic; Sugar Meal; Ailments produced by Turpentine Fumes, 175.

NEWS IN BRIEF on page 173 and other pages.

Business Announcements.

Agricultural Implements, M. C. Hawley & Co., S. F.
The Packers' Exchange of California.
Althouse Windmill, Woodin & Little, S. F.
Insurance Agency, Butler & Haldan, S. F.
Combination Force Pump, P. C. Lewis, Catskill, N. Y.
Dederick's Hay Presses, M. C. Hawley & Co., S. F.
Water Lilies, E. D. Sturtevant, Bordentown, N. J.
Centennial Windmill, T. E. Martin, San Jose, Cal.
Flowering Plants, Chas. T Starr, Avondale, Pa.
Rumson Nurseries, B. B. Hance, Agt., Red Bank, N. J.
Money to Loan, A. Schuller, S. F.
Berkshire Pigs, Jackson & Truman, S. F.
Commission Merchants, Hulme & Hart, S. F.

The Week.

John Chinaman has been in everyone's mouth and ears from end to end of the country during the last week. The demonstration in this city was immense, and the sentiment of the people in favor of making John rather more seldom, so to speak, was unmistakable. The meetings in the interior towns were also expressive against the Asiatic. During the whole week the debate in the Senate at Washington concerning the checking of the immigration of laboring Chinamen for a period of 20 years has continued, and the weight of argument and eloquence has been "agin the hathen." There seems no doubt but that the proposed restriction of immigration will prevail, and we trust the arrangement will reveal hosts of capable and faithful white laborers to carry forward our industries and fill our State with humble American homes.

The week has been rather a disappointment, meteorologically. Cold, drying winds have returned, and much needed moisture has evaporated from the soil. The continuance of these cold north winds rather indicates that there is still rain to come; that perhaps nature has slipped a few cogs, and that our winter may be thrown flat into the lap of spring.

Notes on Irrigation.

The latest volume of the Encyclopædia Brittanica, just issued, has an article on irrigation by Prof. Church, which is, for the most part, of interest to English readers, for it treats of irrigation policies and practices which do not prevail elsewhere. There are, however, some notes which can be compiled therefrom which may interest Pacific coast irrigators. We find one paragraph concerning the existence of the water in the soil and its assumption by the plant, which has some distant bearing upon the amount of water required by a growing crop. The writer claims that soils which do not contain more than 5% to 9% of moisture will yield none of it to the plant, and when such low percentages of water are approached, there is a constant struggle—often fatal to the plant—between the soil and the plant for water. A plant can take no food from the soil unless it be dissolved in water, and thus it happens that a single plant of barley, for example, needs the passage through it, during the five months in which it occupies the ground, of more than an imperial gallon of water. All growing plants contain an immense proportion of water, often 70% to 80%, the turnip 93%, and water-cress as much as 96%.

As might be expected in a country where there is little need to apply water artificially to plants, Prof. Church gives most attention to the irrigation of land for the sake of the manurial matters which are brought on by the water. This is a subject of importance here, for the fertilization of soil by the irrigating stream is an element of value to be always counted upon, except when the water may bring on alkali instead of useful material, and destroy the productiveness of land rather than enhance it.

As to the quality of irrigating water, it is held that clear water is usually preferred for grass land, and thick water for arable soils. Water from moors and peat bogs, or from gravel or ferruginous sandstone, is generally of little value so far as plant food is concerned. River water, especially that which has received town sewage, or the drainage of highly manured land, would naturally be considered most suitable for irrigation, but excellent results are obtained from waters which are not contaminated with manurial matters, and which contain but 8 or 10 grains per gallon of the usually dissolved constituents of spring water. Experienced English irrigators usually recommend as suitable for water meadows those streams in which fish and waterweeds abound. The presence of water-cress, sweet flag, flowering rush, water crowfoot, and floating sweet grass, all indicate a good irrigation water.

In Devonshire and Wales, the refuse water from mines has exercised a very deteriorating influence on the quality of water meadows, necessitating in some cases the total abandonment of irrigation. Water pumped up from mines and that used for dressing mineral ores is found to have lost much of its free carbonic acid gas, its corbonates are converted into sulphates, and it contains sulphate of iron, manganese, cobalt and aluminium, hardly a trace of these metals being present in the uninjured water. Particles of iron and copper pyrites in suspension are even more hurtful than the dissolved substances, for they get converted into sulphates of copper and iron, which are most inimical to vegetation. In water from a Welsh lead mine, there was actually enough free sulphuric acid to cause it to instantly kill the salmon in the river which it entered. The evil effects of the deleterious ingredients of mine water may be considerably reduced by passing the water through conduits filled with chalk or limestone, which neutralizes the free sulphuric acid and converts the soluble metallic sulphates into insoluble carbonates. Streams which receive the chemical wastes from works in which dyeing, paper making, metal working, etc., are carried on, are quite useless for irrigation purposes.

The Packers' Exchange.

An advertisement in another column announces the organization of a "Packers' Exchange" in San Francisco. The directors are the representatives of the leading manufacturers of hermetically sealed goods in San Francisco. Public interest will be excited somewhat no doubt by the announcement of the new organization, and for the purpose of giving some little light on the subject beyond that shed by the advertisement, we secured from one of the officers of the exchange a little description of some of the ends the organization hopes to effect. He assures us that the canners of the Pacific coast have paid out about $1,500,000 annually the past few years for fruits and vegetables, without any concert of action as to a fair estimate of the crop, a proper quantity to be canned, or a proper price to be paid for the materials. As a consequence, they have worked in the dark, and with such poor results that the canning of fruits and vegetables here, instead of being a growing industry, has received a severe blow; and, while nominally profitable, has become one of the closest and most unsatisfactory of the manufacturing interests of the coast. We are assured that it is not the intention to lower the prices of fruit to any extent, or to inaugurate any other radical changes, but rather to average them and place them on such a basis that the fruit grown will always be sure of a market and the canner of a supply. Both will then be in a position, under a system of fair prices, to handle many times the present product, and to make of California fruits a necessity rather than a luxury, as they are at present. Otherwise the fruit grower will find the *demand* decreasing, and the *price* much faster than the demand. "To live and let live" is the idea that is sought to be brought about by making the Exchange the medium of a more intimate relation between the fruit grower and canner. The Exchange will try to tell the fruit grower what is wanted, in a systematic, legitimate way, free of any speculative ideas, and leave it for the latter to work out in the most mutually profitable manner.

The foregoing is a brief sketch of the aims of the Packers' Exchange, as stated to us. It cannot be doubted that much good can be done the canned fruit interest—both those who grow the fruit and those who put it up—by a united effort to arrange matters for mutual advantage. We doubt not the fruit growers will greet the new organization with interest and approval so long as its work is of this character. Should the Exchange find itself strong, it may be led into an attempt to force market values, although such is said to be foreign to its present intention. If this should happen, it will necessitate counter-organization on the part of the growers and the establishment of new canneries, either by the use of others' capital or their own. Nor would this be a misfortune, for it cannot be doubted that canneries here and there in all the fruit districts would be of decided advantage to the fruit interest. As it is, there are too many canners and too many rival interests in the business of fruit preservation, to admit of an oppressive organization.

So far as we can see at present, there is a field for usefulness for the Packers' Exchange, and but little prospect that it could long serve selfish ends, even if it should be disposed to do so.

Blackleg in Cattle.

There has been considerable anxiety and some actual loss from blackleg among the herds of the Pacific Coast during the last few months. We have already given full description of the disease and notes on remedies and methods of treatment, but we find in an article lately written for the New York *Tribune*, by James Law, the eminent veterinarian of Cornell University, some farther notes concerning the disease, the disposition of animals dying by it, etc., which may prove of service to our cattle-growing readers on their distant ranges. He states that the stock which has been exposed to the infection of blackleg, whether from sick animals or infected pastures or places, may attain some measure of protection from taking daily in the food or water some disinfectant which will check the development of any germs that may be present in the mouth, throat, stomach or bowels. For this purpose one drachm carbolic acid and three drachms sulphate of iron may be dissolved daily in the drinking water of each adult animal or sprinkled on its food. Or one drachm of iodide of potassium and one-half ounce chlorate of potassa may be used in the same way. If there is any tendency to costiveness it should be counteracted by roots, apples, potatoes, soft mashes, or by daily doses of two or three ounces of Glauber salts. Constipation usually begets fever and fever strongly predisdoses to the reception of the anthrax germ. Young animals are always most liable to the disease, partly because their tissues are soft and impressible, but largely no doubt because they have not had an opportunity to become insusceptible, through an earlier mild attack. Young growing animals should therefore be kept apart from pastures where blackleg habitually occurs, and if they must be at any time exposed to even the slightest extent, care should be taken to keep them in the most vigorous health, and to prevent them from becoming suddenly plethoric.

To prevent the evil effects of a rapidly increasing plethora, it is desirable to feed well at all times, and never allow the subject to get into too low condition. The use in this connection of linseed cake has the double effect of keeping the beast constantly thriving and counteracting all costiveness and fever. Some seek the same result by giving yearling cattle weekly or semi-weekly doses of half an ounce of saltpeter, or of two ounces Glauber salts; while still others insert tapes or strips of leather or cord through the skin of the dewlap, and smear them frequently with crude turpentine (pine gum) or other irritant, so as to keep up a running sore. These are kept in for weeks or even months, and though not an absolute protection against the disease, yet they serve to materially reduce the mortality. Cattle strange to the pastures should be subjected to the same precaution as young growing cattle. After it has once set in, blackleg runs such a rapid course that treatment is rarely of any avail. In mild cases the use of carbolic acid and sulphate of iron, alternately with chlorate of potassa and iodide of potassium, as advised above, for prevention, and to the swelling oil of turpentine, or carbolic acid in oil (1 to 10) may give good results.

The carcasses of the dead and all the products of the sick should be burned; or, if buried at all, it should be in a dry porous soil, with a covering of quicklime to favor speedy decomposition, and securely fenced in, so that no other cattle can approach the place nor eat the grass grown upon it for several years. If damp or impervious soil only is attainable for burial, then burning the carcasses is far to be preferred. When a pasture has once had an outbreak of blackleg, it cannot be considered safe for several years to come. The purification of such pastures may be expedited by placing them under a rotation of crops ond stirring the soil as frequently as possible, so as to expose the germs to the air and lessen and remove their virulence by changing the medium in which they grow. The grand principle is never to be lost sight of that it is the habit they acquire of using up little oxygen in their growth which fits these germs for growing in the blood, and it is the habit of using up much air that unfits them for survival in the animal fluids where little air can be found.

QUERIES AND REPLIES.

State Fair Premiums.

EDITORS PRESS:—At a recent meeting of the State Board of Agriculture, the consideration of premium lists was deferred until April 13, 1882, for the purpose of ascertaining the wants of those interested therein, and to that end the following resolution was, upon motion of Director Rose, unanimously adopted: "Resolved, That the Secretary be instructed to send last year's premium list and racing programme to prominent breeders, mechanics, farmers, turfmen and others interested, with the request that they look over such portions as come within their scope, and recommend such changes as may be, in their judgment, necessary to be made." In compliance therewith I submit our premium list of 1881 to you for consideration. A revision of the same is deemed necessary, and it is hoped that you will lend us your valuable aid in reconstructing such portions as you are interested in. An early response is desired.—EDWIN F. SMITH, Secretary, Sacramento, Cal.

The above is worth the attention of growers of all kinds of produce who contemplate exhibition at the State fair. There has been much complaint of the unfitness of the premium list and regulations for exhibition, and, as the directors are now disposed to consider all propositions of revision, they should be given an opportunity to profit by the wisdom and experience of all who are interested. We publish the circular of Secretary Smith, as above, with the idea of calling general attention to the subject.

Duroc Swine.

EDITORS PRESS:—I see by your paper different parties' experiences with the red or Duroc hogs. I will tell you my success. In February, 1881, I had brought to Red Bluff by express a pair of pigs four months old, from Laurel's ranch, Monterey. Last August the sow had six pigs, of which she raised five. The 13th of February of this year she had six and saved five, which now are fine, healthy pigs. I have raised hogs for years, and of different breeds, but I consider the Duroc the thriftiest grower of them all. I like them very much. I have now on my ranch quite a number of the half breeds, which I consider very nice. I don't think anyone will beat me, for the length of time I have had mine.—J. A. LONG, Red Bluff, Cal.

Silk Culture.

EDITORS PRESS:—Will you do me the great favor of telling me, through the RURAL or otherwise, where I can obtain information with regard to silk culture. I wish to know whether the Mulberry can be propagated by cuttings, where they can be obtained and the cost, what variety of the Mulberry is best, and in fact all about the matter. You will greatly oblige me if you will reply to this.—MARTHA WILSON, Santa Cruz.

Before this time our correspondent will have seen the page about the mulberry in last week's RURAL. She will also find the first part of a comprehensive essay on the silk worm in this issue, written by Felix Gillet, who has had wide experience in the matter here and in France. The publications of the Silk Culture Association can be had by addressing Mrs. T. H. Hittell, Sec'y., 808 Turk St., San Francisco. The Mulberry cuttings are sent out by the same society, or can be bought from any of the nurserymen.

What Shall He Grow.

EDS. PRESS:—I have several acres of good, moist, rich garden land too wet in winter for wheat, etc. I cannot compete with the Chinese and Italians in raising common vegetables? Now, are there not many other things which pay besides the cereals, and cabbage, lettuce, etc. I find red peppers do well here, but do not wish to depend on this alone. Among the many things cultivated and sold in San Francisco, there must be many things profitable to raise. I want something saleable, dry, ripe, or green, in San Francisco, which it will pay to raise. Is there a good demand for okra? I cannot irrigate, but by cultivation things do well without it.—C., Yountville, Cal.

Who will advise our correspondent. If we had such a piece of land we should probably put it into potatoes, as soon as it was safe to do so. But our correspondent evidently wants to hear of some special crop which has a good deal of money in it. We shall be glad to hear of such.

THE EADS SHIP RAILWAY.—This project is now before Congress, and is being discussed with considerable warmth. The last move made was one of decided advantage to Capt. Eads, and that was the favorable report of the Senate Committee, and their recommendation that the bill giving the United States guarantee to $50,000,000 of bonds under certain conditions should pass. As the subject is one of great interest just at this time, we call attention to the statement by L. F. Moulton, which occupies one of our inside pages this week. Mr. Moulton is a large land owner and farmer of Colusa county, and he regards the Eads' project as the one release from the transportation evils which exist and threaten.

Cellular Growth of Plants.

Last week we had an illustrated chapter on the growth of the tree and the formation of wood. Upon this page we pursue cell growth further, using for this purpose an illustrated paper recently read at the Academy of Sciences by Dr. H. W. Harkness, as follows:

In presenting, as I propose to do this evening for your consideration, the vegetable cell and some facts pertaining to its life history, I shall rely upon the recorded observations of Mohl, Sachs, Cohn and others and shall claim no originality for myself, unless it be in the manner of illustrating the subject.

This tiny speck of matter is year by year assuming greater importance and is being eagerly scanned by men of science. When we take a retrospective view of the progress which has been made in this line of investigation within a recent period, we have good reason for believing that the patient and close observer will be rewarded, by bringing to light many new and valuable discoveries—discoveries, too, of such a nature and of so much importance as to to cast a flood of light upon many of the unsolved problems pertaining to both animal and vegetable life. For in this little, tiny cell is to be found the physical basis of both animal and vegetable life.

To the cell and its multifarious transformations he must turn, would he wish to gain a knowledge of the growth of the trunk, the circulation of the sap, the formation of the leaf, the flower, the fruit, while on the other hand would he seek the ultimate molecule of matter, he must marshal the forces contained within the cell, and from the cell itself go backward to granule, from granule to cytoblast, from cytoblast to fluids, from fluids to gases, and from gases to the spectre—haunted chambers of analytical hypothesis.

The greater number of cells in succulent plants are composed of three distinct layers, first, an outer firm investment which is designated as the cell wall, and which consists of a substance peculiar to itself, termed cellulose. In close proximity to the cell wall lies a second membrane of far greater interest, the primordial utricle, or protoplasmic sac. This is an exceedingly delicate membrane formed from protoplasmic matter, and contains within its walls all of the protoplasm.

As a free body within this protoplasm, we find the nucleus, or cytoblast, an object of great and growing importance. This body is now supposed to have an independent investment of its own.

For the purpose of more clearly illustrating this portion of the subject, I will compare it to an object very familiar to all of you—an egg.

The shell of the egg well represents the cell wall, the lining membrane. The amnion, fitting closely to the shell, will represent the primordial utricle, while the delicate allantois or vitelline membrane, inclosing the yelk, shall represent the investment of the cytoblast. We have all observed that the amniotic membrane lies in such close contact with the shell of the egg as to seem a part of it, yet if the egg be carefully dried we find that as desiccation progresses the membrane separates completely from the shell, and shrinking upon itself still continues to protect its contents.

Were we able to make sufficiently accurate observations of partially dried plants, we should doubtless find the utricle shrunken in a like manner upon its contents, but as our instruments fail us here, we may arrive at the same result by a different mode of procedure.

If we take a thin longitudinal section from near the center of the stem of a calla, and placing it upon a glass slide, allow a few drops of strong sulphuric acid to come in contact with it for a few seconds, we find that the primordial utricle has completely separated itself from the cell wall and, with its contents, is completely exposed to our view, as in Fig. 1. If the acid is allowed to remain a few seconds longer, the cell wall is obliterated and the utricle and its contents set free, and in a condition much like that of the dried egg which has been denuded of its shell. The cell contents may now be examined, and, with the help of chemical reagents, its constituent elements pretty accurately determined. A positive and complete analysis can hardly be hoped for; but it is highly probable that, like the colorless corpuscle of the blood, it contains all of the elements needful for the repair of waste and the building up of new tissue.

Those cells which lie immediately beneath the cuticle are crowded with granules of chlorophyll, while those lying deeper contain more or less starch.

Fig. 2 is designed to exhibit these cells, which give to plants their green color. Fig. 3 shows cells filled with starch granules, a thin slice of potato being used for that purpose; but as starch granules in their natural colorless state do not show to good advantage when mounted in fluids, I applied a weak solution of iodine, which has changed their color to a beautiful blue. Many of the starch cells will be found empty, having been divided by the razor in making the section; the starch has been washed out of them.

Among the many curious and interesting facts already known regarding cell life, the circulation of the cell sap is one of the most curious. This must not be confounded with the general circulation of sap in the plant, from which it is entirely distinct. This movement, called cyclosis, or cell rotation, is a rotary motion of fluids contained within the walls of each individual cell. It is shown in Fig. 4, in which the direction of the movement is indicated by arrows. A current of fluid moves along the cell wall until, reaching an angle, it strikes the next wall, when it turns, and, by another route, finds its way back to the starting point. This movement seems to be necessary to the well-being of the protoplasm, as if interrupted for any considerable length of time the protoplasm loses its vitality. This action is in progress in every cell of the growing portion of every plant, unless checked by external influences, and when we try to realize the aggregate power exerted, we can but admire this as an amazing instance of the results produced by the unseen forces of Nature.

When we consider, that in the millions of cells of each growing plant, in meadow, forest and stream, this movement goes on without pause or cessation, we are able to appreciate the glowing language used by Huxley in describing this phenomenon: "Were our ears so attuned that we might hear these tiny maelstroms, the aggregate volume of sound would exceed the roar of a Niagara."

It has recently been discovered that a mild current of electricity arrests this movement; and here permit me to digress for a moment, in order to say, that in my opinion, recorded many years since, this cell circulation is checked, if not altogether arrested, by the action of our northerly winds. In support of this, I will state briefly one or two of several facts which go far to prove the truth of this theory. Anyone who has observed growing plants during the prevalence of northerly winds, must have noticed that they shrivel and curl before the blast, showing signs of the greatest distress, even if the wind has been blowing but for a short period; on the return of the soft, moist wind, however, the plants resume at once their fresh and vigorous appearance.

These changes can be due neither to desiccation on the one hand nor to absorption on the other, they are far too sudden for that, but they are no doubt attributable to the temporary cessation of cell rotation, brought about by the electrical disturbances which we know take place during the continuance of these winds.

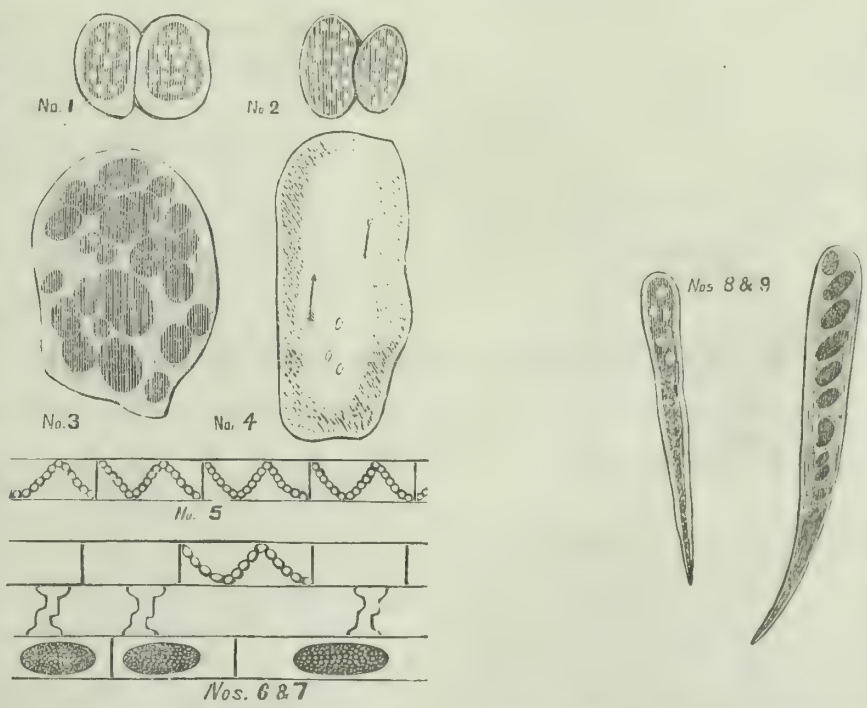
The process of the multiplication of cells varies somewhat, according to the situation and requirements of the plant. In a few hurried remarks made at our previous meeting, I briefly described the process of cell multiplication by subdivision, as it takes place in the protophyte or unicellular plant. I then stated that in most of the protophytes the division was either binary or quaternate, and that this was the simplest form in which we were able to study the process. I propose this evening to describe and so far as possible, illustrate the formation and growth of the cell in two or three species of a higher order of plants. I have here before me a well-known plant called by botanists *Spirogyra longata*, by the children frog's bit, which belongs to a very large order of plants—the Conjugata, so called by reason of the method of formation of the germ cell. This is a long filamentous plant, made up of a large number of cylindrical cells joined together at their extremities; see Fig. 5. The protoplasmic contents of these cells consist of chlorophyll granules, colorless globules, plasmic fluid, and one or more nuclei or cytoblasts. The granules of chlorophyll are arranged in a beautiful spiral within the cell, and give to the plant its vivid green color.

Multiplication by Conjugation.

The manner in which the germ cell is formed in this plant is extremely interesting, and serves to illustrate that of all the species belonging to the family. The process may be readily observed by anyone who is the possessor of a microscope, and the requisite amount of patience. The plants may be found in the proper stage of development in small pools of fresh water during the last days of February and the earlier part of March. In the plants collected during this period, the following process may be observed: It must be remembered that the plant is simply a row of cells. In two plants lying beside each other, slight swellings appear upon the sides of those cells which are contiguous. These protuberances grow in size until they meet and coalesce; immediately after this union, the walls of both are ruptured at the point of contact, forming a free passage between the two cells (see Figs. 6 and 7).

At this moment the protoplasmic contents of each cell shows signs of great excitability, the chlorophyll granules immediately separate and destroy the beautiful spiral threads, and mixing with the rest of the protoplasm, present for a time an appearance not unlike that of steel filings under the influence of a magnet. After a short time, however, the contents of one cell rushes through the opening into the other, where the protoplasm of both instantly combine to form a germ cell of the most vivid green. This process is being repeated in every cell at the same moment of time, and as the result, we have in one plant a row of vivid cells, and in the other only transparent and tenantless ones

There is a curious exception to this rule, however, as I have occasionally observed. The cells of the filaments are sometimes of unequal lengths, hence there must once in a while be an odd one; but this bodes sore disaster to the poor cell, which will be kept out in the cold, so to speak, on account of its failure to meet an affinity. As before stated, the swelling out of the cell wall begins at the same moment along the two filaments; the odd cell protrudes with the rest, but he is doomed to see the cells opposite him affiliating with his neighbors of the right and the left, while he is left forlorn (Figs. 6 and 7). In a short time, however, the swelling subsides, and he submits gracefully to the inevitable, becoming a "bachelor cell." So far as we can judge, however, he seems to rather enjoy the situation, at least for a time; he still retains his beautiful spiral of green, is still an object of admiration and attention, and the eye falls upon him at once, on examining the locality. His companions have all gone over to the other side and left him, on either hand, a long row of tenantless abodes. Finally, however, he assumes a yellow-jaundiced hue, resulting, it may be, from disappointment, then rapidly decays.



CELL GROWTH AND MULTIPLICATION AS SEEN WITH THE MICROSCOPE.

These germ cells, so curiously formed, are not at once set free from the parent cell, but they are retained within the wall of the now dead plant for days, sometimes for weeks, should the conditions prove unfavorable. Were they set free at once they would be in the exact condition of the egg denuded of its shell. Instead of this, they are retained and protected until a cell wall has formed from the cell contents. This being accomplished, the water having meanwhile evaporated, this germ is ready with the first favoring breeze to start out upon its travels.

I need not say to you, ladies and gentlemen, that the little plant I have so feebly described is cosmopolitan in its habit. A germ so well protected and at the same time more buoyant than thistle down, may, when aided by favoring winds, be wafted across oceans or continents, and is equally at home in the pools produced by the melting snows of the Himalayas, as it is on the slopes of the Sierras.

The process I have described is termed "cell multiplication by conjugation." The next in order of importance is that which is termed

Free Cell Formation,

The process of which is thus described by Sachs: "In the protoplasmic body of a cell new centers of formation arise, around each of which a portion of the protoplasm gathers and forms a cell." In illustrating this process I shall make use of a fungoid plant, of the order Sphæriaceæ, discovered by me a few days since as a parasite upon the buckeye. This plant is developed beneath the cuticle of the bark, the first intimation of its presence being a slight nodular swelling upon the branch on which it has fastened. Soon after its first appearance a number of microscopic sacs arise from the stroma. These sacs, which are represented in figures 8 and 9, are filled with delicate protoplasmic granules with several nuclei or cytoblasts. These "mother cells," as they are termed, all develop, in this particular plant, eight germ cells, neither more nor less, in the following manner: At some point in the mother cell we notice a bright spot, or granule, around which a portion of the protoplasm begins to collect and, by growth and accretion, soon assumes the form of a germ cell. We are often able to witness this process in all stages of its development within the walls of a single mother cell, and we may arrest this development at any stage and preserve it for study, as you will see in the specimen under the instrument. As in the former instance, these cells remain within the parent cell until the investment of each has become consolidated into a firm cell wall, when it too is set free.

Although the process lacks the dramatic force of the preceding one, yet it marks a decided advance in the scale of plant development.

Fraudulent Butter.

We lately had a paragraph on the manufacture of oleomargarine in the Eastern States, and some figures showing the vast amounts being shipped to England and the continent. It seems now that the English are seizing the idea that they might as well work up their own refuse fats into butter as purchase the counterfeit stuff from the Yankees. So we find accounts of English patents covering processes of this kind. One will serve to show our readers the process and the materials employed. The fatty matter of beef, pork, or even veal, are conducted into a machine provided with metal knives, to which rotary motion is communicated; there the fats are treated in such a manner as to be brought to a sort of paste; a stream of water passes at the same time through it. The fat is then placed in a vessel to be melted, so that it may always be completely protected from the air. The vessel is provided with a water-bath jacket, and in the interior a serpentine coil for free steam. Two rollers break or crush up the fat, which at a low temperature thus separates all membranes as well as impurities. The melted fat is drawn off to be placed in the granulating and grinding vessels. The third operation is the granulation; this is done alone at a temperature at least 87° Fahr. The next day the fats are submitted to hydraulic pressure. The extraction of the oleic portion is complete and regular. The oleine of the fat is remelted, then added, according to the consistency to be obtained, some white vegetable oil and color, then it is poured into a churn; a certain portion of milk and cream is then added. As soon as it is hermetically full the churn is put in motion; 10 minutes is sufficient to agglomerate the milky substances with the fats. This operation terminated, the tap is opened, and all the semi-liquid material is driven into a tube, which takes it to the bottom of a basin containing cold water, which causes instantly the solid fat to assume the particular granular appearance. The butter is then churned by wood rollers, afterward placed in an agglomerator provided with wood arms, and tubes for alternate currents of hot and cold water. In this machine any deficiency of milk may be restored to give the butter more body, more strength, and at the same time a better appearance.

Thus is the counterfeit butter to be made and given as close a semblance to the genuine as possible. The great problem in England now is how to overcome the depression in the agricultural industry. While statesmen are bend their energies to gain a solution of the difficulty, such enterprises as this are being pushed forward. They will create more depression than all the laws can allay. They will paralyze the dairy production of the country, and thus cut off what seems the most profitable escape from unprofitable wheat growing. Surely the English agricultural producer has chanced upon evil times.

Some curious reactions of milk have been noted by M. C. Arnold: If a little tincture of guiacum be added to fresh milk a blue color is produced; but milk heated to 80° or more remains unchanged. Sour milk assumes the same tint, unless the reaction is checked by the use of mineral acids and alkalies. When a little paste starch mixed with iodide of potassium is introduced into milk to which old oil of turpentine had been previously added, a fine blue band appears at the surface of contact and spreads rapidly. Milk freed from albuminous matter does not give this reaction. If to fresh milk there is first added acetic acid to precipitate the caseine, then some caustic potassa, and lastly a trace of a solution of sulphate of copper, the violet reaction characteristic of peptone does not appear, but if the milk is allowed to stand 15 to 20 hours before this treatment, the violet color is obtained. The blue color, the author thinks, is the result of ozone.

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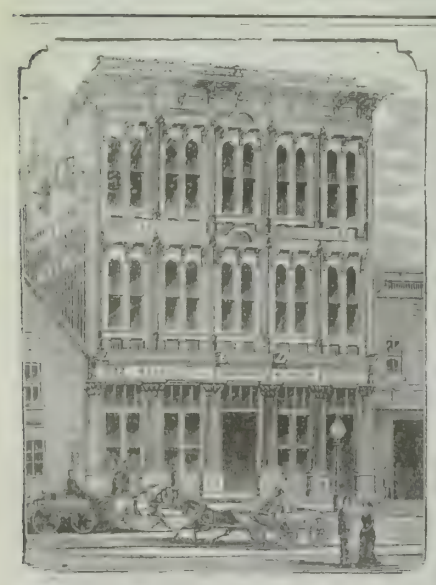

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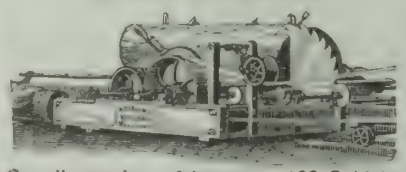

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The Ruhl Lift and Suction Pumps.

We give engravings on this page to show the construction of the pump valves invented and manufactured by F. A. Ruhl, of Stockton. The Ruhl pumps have been widely introduced, and have given excellent satisfaction, both in drawing water from shallow wells and in lifting it from deep wells. They are famous for the amount of water they deliver with ease, and are therefore popular in pumping for irrigation as well as for other purposes. At least 150 of the 8-inch pumps are now in use and they have been distributed from Shasta county on the north, to New Mexico on the southeast, and at intervening points. Many are now successfully lifting water 175 ft., and are guaranteed to work to a depth of 200 ft. The 8-inch pumps deliver 10,000 gallons of water in an hour, and the 10-inch handle 15,000 gallons per hour. The engravings show the two sets of arrangements, one for suction from a shallow well; the other for lifting from a deep well.

In order to give our readers a better idea of the devices and principles involved in the Ruhl pumps, we introduce the following description of the parts: The invention overcomes the difficulty which has been commonly experienced in the construction of valves for lift-pumps, such as the unscrewing by the shock of pumping and the falling of the lower pump-box to the bottom of the well; also, he overcomes the clogging by sand and the rusting in of the valve, which has been frequently experienced. His device is a simple and easy method of securing the parts of the box together, and at the same time providing guides for the valve which will not clog. The engravings show a vertical section of the valve in position. It will be observed that the lower pump-valve is cast with two arms extending upward some distance, and at their upper ends are short lugs projecting inward. These lugs are slotted, so that the bolts can be slipped in from the side without putting them through holes, thus avoiding a great deal of difficulty in small pumps.

The valve seat fits into the lower part of the lower pump valve, and the usual leather washer makes a tight joint between these parts. This seat usually has a screw thread cut upon its outside, and is screwed into this valve from below, but this method is insecure. Mr. Ruhl therefore thickens the metal a little upon two opposite sides, and makes holes through which the bolts pass, extending downwards from the lugs, where their heads rest through the seat, and nuts upon the lower ends serve to draw the whole firmly together.

The valve moves between the valve-seat and the lugs, and has a stem passing down from its center. This stem is guided by passing a hole in the crossbar below in the usual manner.

In order to prevent the valve from turning, and to guide it steadily without liability to clog from sand, the inventor forms grooves upon each side of the valve, corresponding to the position of the rods or bolts, and by means of these grooves the valve slides easily up and down. As these grooves are open upon the outside, it will be impossible for them to get clogged.

By his construction of the arms with the short lugs, Mr. Ruhl is enabled to dispense with the usual crossbar guide, which impedes the flow of water considerably.

The upper pump-valve, which is similar in construction to the lower one, is provided with a crossbar, which is perforated with a vertical bolt-hole, or holes, in its center, and the lower end of the pump-rod has a stout rectangular strap of iron fixed to it. The transverse part of this strap is bolted to the crossbar, and thus gives a secure fastening of the valve to the rod. By this construction, the inventor is enabled to secure the valve-seat and provide guides for the valves at one operation, thus avoiding the insecure fastening for the seat, and doing away with the guide-rods secured to the valve, which are so liable to clog.

The suction pump works on top of the ground, and the suction pipe extends down the well to a depth of not over 33 ft.

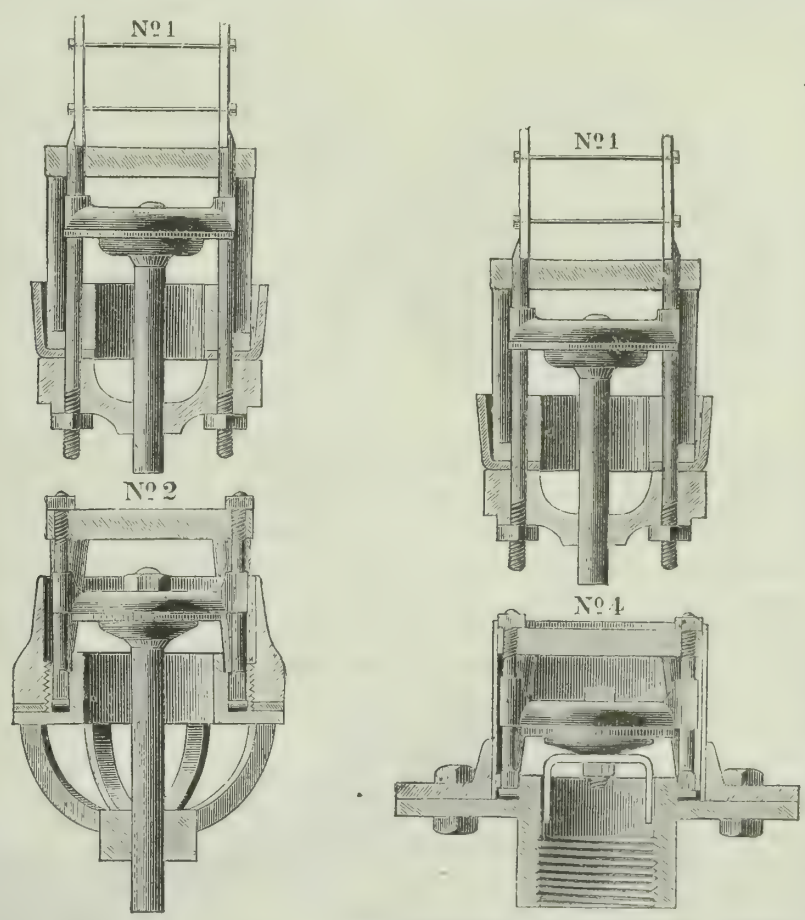
The pipes of the lift pumps are made of heavy galvanized iron, riveted and soldered firmly together, and galvanized flanges are used to put the section together any desired length. A wooden rod is used as a piston, thus relieving the valves of the pressure of the water in long pumps. These wooden rods can be taken out without disturbing the pump when the sucker needs a new leather, thus avoiding the great trouble in pulling out the hole pipes.

The Ruhl pumps are made in various sizes, and any farther information concerning them can be had by addressing the firm as given in their advertisement in another column.

CORNSTALKS AS FUEL.—An Iowa farmer who has both wood and coal on his farm burns cornstalks for fuel to warm his house, and claims that they make the best and cheapest fuel he can get. He uses a large stove, and burns the stalks in tightly-bound bundles, weighing about 40 lbs. each. A bundle burns three hours (without flame) in an air-tight stove. The large stove offers so much radiating surface that it does not need to be very hot. Five bundles a day, or 600 for the winter, suffice to keep the stove going and the house warm.

A National Railroad Proposed.

EDITORS PRESS:—So it appears that the people are to be disappointed again in their expections of relief from the extortionate rates charged for transportation on the railroads. No matter how many railroads we have, as soon as they are ready to run, they will enter into combination with the old ones, and no relief is given the people from the old extortionate rates. This condition of things is now played out, and the people know better than to look farther in that direction for relief. It seems to be a fixed policy with the railroad companies at present to fix the tariff on produce at such a rate as barely to induce the producer to ship his produce, taking the most of the profit to themselves, thereby making large gains, while the producer can barely live. When the Government lent its aid and donated such immense quantities of land to help the companies through with their roads, they expected the roads would be managed in such a way as to be a blessing to the country through which they ran. They little dreamed of the gigantic proportions and dictation they would assume to themselves, and thus make the roads a curse instead of a blessing. Instead of stepping up to the counter and paying the small percentage the Government demanded for their great assistance in building the roads, they adopt every scheme that human ingenuity can devise to cheat the Government out of every cent. Not only this, but they assume to themselves to dictate to the Government the way in which they shall do their business, in spite of the law to the contrary.



DEEP WELL LIFT PUMP. SHALLOW WELL SUCTION PUMP.

It was a great mistake, no doubt, in giving those lands to the railroads at all. Had they kept the lands and built a road themselves, much of the land would have been settled, and the Government would have been receiving a constant income from them, and the settlers saved the enormous prices they have had to pay. Now we know there is but one way out of this difficulty, and that is, that the Government build a road across the continent; a double track to where a branch turns off to Oregon, and fix the price of officers and men, and make them responsible to do their duty well. Then let the road be run at cost, which will enable our producers to live, and our Eastern brethren to get our produce at living rates. Even if every State in the Union had to be rated 1% higher every year to pay for running expenses, they would a great deal more than get their pay back by their exchange of produce and manufactures. Let this standard be raised, and let the watchword be: "A national railroad across the continent!" After that, other roads may be added, if desired.

C.

Santa Cruz Co., Cal.

FAT IN MILK.—To determine the proportion of fat in milk, Prof. Soxhlet shakes up the milk with ether or potassa lye, so that the fat contained in the sample is completely dissolved. When the mixture is allowed to stand a layer is formed on the surface of the liquid, and from a comparison of the supernatant dissolved fat with the other portion of the contents of the vessel the problem may be solved. The specific gravity of the ethertal liquid is increased in proportion to the fat dissolved.

Uses and Growing of Bamboos.

EDITORS PRESS:—The bamboo stems are perfect in size, shape and strength for hop poles at the end of a single summer's growth, when grown from healthy, vigorous plants of two or more years of age. The same size of stems serve in the most perfect manner for bean poles or for grapevine stakes; also for peas, gourds, or any other vines to run upon. They are also strong, light material of the best possible form for use in fencing against fowls, sheep or goats, in fact, any kind of fence where ease of construction, with only moderate strength, are requisites. The largest poles of two years' growth are heavy enough to make fruit ladders, trellis frames and coverings—anything that small timbers of pine may be used for, and in combining lightness and strength, they surpass any kind of timber.

As an article of food for stock they are also of great value. In a few days now the young growth will be started, so that we shall begin feeding the young stems to our milch cows as a "mess" while we are milking. The cows will be in the best of feed at that time, but they will readily leave the millet, sorghum or alfalfa for the bamboo. We cut off the young shoots as large as a man's arm and a foot or two tall, and tender as asparagus, and feed them as a "mess" to the cows, the same as we feed bran or grain during winter, while bamboos are not in vigorous growth.

Another use, and an important one to us on the treeless plains, is their value as fuel. The tops and refuse of the stalks are as good as pine shavings for kindling wood; and in summer when no fuel is needed, except for cooking, many a meal is cooked with the roots and refuse butts, left to season where the poles have been gathered for use about the farm.

The hollow canes make excellent pipes for conveying water and for underground irrigation. A short piece of one of these canes conveys water through the bank of the main ditch into each row of fruit or timber trees, thus giving them a regular, constant supply of water without either attention or labor after the pipes are once set. The children are blowing bamboo whistles; the men are laying out lands and ditches by use of bamboo flag-poles, and the old gentleman is walking with a bamboo cane; the fowls sit upon bamboo roosts or are kept in bamboo coops; in short, the bamboo is indispensible, is used every hour by those who are fortunate enough to have it growing on their farms.

Culture.

They are as easily grown as Lombardy poplars. Roots containing a germ of a sprout are sure to grow, while 90% of the cuttings will grow by simply planting them so that the germ, found at every joint, shall be an inch below the surface. If cuttings of two joints—two germs—be planted, the upper joint should be just at the surface. It takes three years from cuttings for the roots to attain sufficient vigor to make such a growth of top as we have spoken of. The tops should all be cut off every winter until the growth is sufficiently large, then the poles may be left year after year; they will throw out limbs from all the upper joints each spring, and will increase a little—a few feet yearly—in hight, but the chief benefit of age to them is the greater strength and hardness which they acquire by growing year after year.

The growth from good roots on rich soil will be 20 ft. the first year. Cut these off at the surface of the ground; keep the weeds down by hoeing, thin out your young bamboos so as to leave no more than two stems to the square foot, and in good soil you will have stems 50 ft. in hight, and 8 to 10 inches in circumference in a single year's growth. Maunder, in his "Treasury of Botany," one of the best authorities, says: "In the East and West Indies the canes frequently grow from 50 to 60 ft. high; and even in this country (England), they have been known to grow 40 ft. in one season in some of the large palm-houses." The species here spoken of is the *Bambusa arundinacea*, the one that I have found best adapted to our Fresno climate; so superior to any of the half dozen others that I have tested, that I have discarded all the others, except the *B. nigra*, which I retain only on account of the ornamentation of its glossy black canes.

They do not require a great amount of water. In my first setting of them, I made the mistake of giving them too much water, and the result was enfeebled growth, and, in some cases, entire loss of plants. The best culture and irrigation that I have found, is to set the roots on top of a ridge made by four furrows of a two-horse plow; then fill the furrows on either side, and mulch heavily with stable manure, and saturate this manure about twice a month during the dry season. W. A. SANDERS.

Sanders, Cal.

Power of the Microscope.

The magnifying power of the microscope has been brought by modern improvements to about 100,000 diameters. There is a difficulty in determining the exact degree of magnifying power exerted, the only method of comparison being "the apparently barbarous one of placing one eye to the instrument and looking at a finely graduated plate of known dimensions, and looking with the other eye at a common foot-rule at a proper distance for ordinary sight, and with practice bringing the objects together in the field of view."

It has been found that in microscopic observations the use of the electric light makes it possible to illumine at least 500 times stronger than with gas, and that in other important respects the new light is far superior to the old. By what is known as Clevalier's method, the light is separated by its difference in refrangibility so that the heat rays are nearly excluded, and only the luminous rays thrown on the objects to be examined.

Bold as the attempt may seem, microscopists have undertaken, by means of the extremely minute observations they are now able to make, to estimate the size of the ultimate elemental particles or atoms of which all matter is composed. This measurement has not as yet, it is true, been made with exactness; but it is claimed to be well ascertained that these ultimate particles cannot be over one twenty-millionth of an inch in diameter. The startling belief is expressed that the common house-fly is able to see and distinctly recognize these inconceivably minute particles, its eye having been found equipped with a peculiar circular muscle, unknown to early entomologists, which enables it to so change its focus and apply its lenses as to attain this incredible visual power.

The most skillful microscopists, with their most effective instruments, are able to examine the form, color and nature of monades one hundred thousandth of an inch in diameter, which is a long way off from the delicate precision above indicated, but still can hardly be called a coarse or clumsy way of investigating material phenomena. The best of human eyes, without artificial aid, can see no objects much smaller than one three-hundredth of an inch in diameter.—*Mechanical News.*

THE FARMERS' MUTUAL INSURANCE CO.—That company, which was known as the California Farmers' Mutual Fire Insurance Association, brought suit, during the past few days, in Justice Clough's court, against a batch of 100 recalcitrant members. The entire amount at issue, though aggregating less than $10,000—the several liabilities of the defendants ranging all the way from $10 to $300, none running higher than the monetary limit of the inferior courts of jurisprudence—involved an important economic principle. Similar suits have been brought in the Justice's Court for more than a year, all involving the same issue, all adjudged in favor of the association, and all carried up to the Superior Court, where the decision of the lower court was affirmed. Already 962 out of about 1,100 dissatisfied members have been successfully sued. The association has been out of existence since 1879. It was organized in 1874 on the mutual plan, each member paying 2% of the amount of his insurance, and pledging himself to pay his pro rata share of the losses sustained by any other member of the association. This mutual agreement was to last for five years, but members were allowed to withdraw at any time on paying such losses as had been sustained up to the time of withdrawal. In 1879 the association was compelled to suspend business on account of the reluctance of the members to pay their assessments. Since then the representatives of the paying members have been engaged in trying to collect the amounts due by the others, of whom but about 100 remain. The suits hitherto brought have been adjudicated upon the similar issues, and with the same result.—*Morning Call.*

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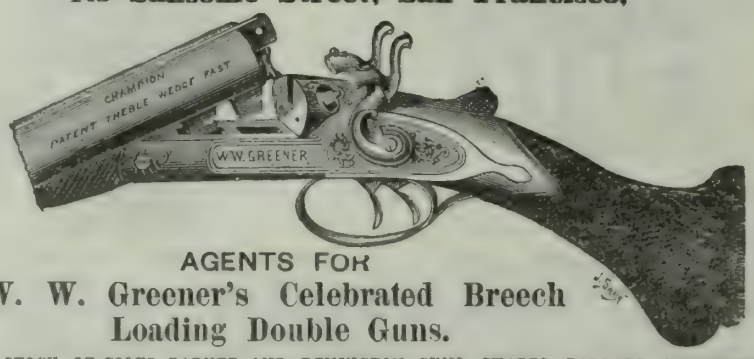

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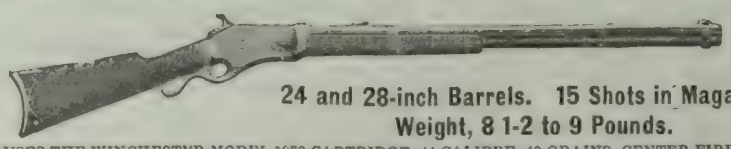

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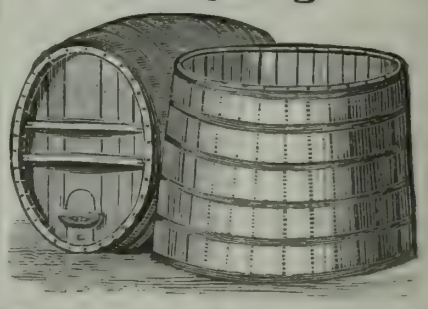

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By L. F. Moulton.

To the Mechanics of California:

The farmer is full partner with the San Francisco and other mechanics and manufacturers. Until we can get cheap freights we cannot raise wheat to load ships to foreign countries, that can bring back *cheap* or *half* freights, like coal, iron and all other raw material, which is required to manufacture all classes of goods and machinery, cheap and good enough to compete with Eastern manufactured articles, that will be brought at sufficiently low rates on the return wheat cars, so as to crush out our flourishing manufactures on this coast. It is reasonable to expect that if either become crippled by having to pay full freights—say one cent per pound one way and *empty* the other way—that one of the partners must be crushed, thereby crushing both. Once our farming, our manufacturing interest, gone or crippled, and all other interests dependent upon them once crippled, then the railway companies would have to pay their taxes instead of refusing as now. If they did not it would be hard indeed on those left who had property and could not control the government in their interest.

To the Farmers of California:

Our great distance from market is our great misfortune. The actual cost of transportation absorbs our *profits*. The past history of high freights is a terrible lesson for *us* to study. Is there any reason to hope that it will be better? We see no reasonable grounds for hope in the future. It has cost one and one-fourth cents per lb. to market our wheat. This is more than it is frequently worth in the East. It would be so to-day were it not for the prospect that there would *not* be wheat enough grown to load the ships on the way this year. The railroad, it may be claimed by its *agents*, is now carrying for 65 cents per hundred to the very markets that are sometimes glad to get 65 cents for their wheat. The head railroad agent two weeks ago said they could not carry wheat for less than one cent per pound to New Orleans; then it would have to be reloaded in that *yellow fever climate* on to Liverpool ships; so it would then cost more than 1¼ cents freight to Liverpool; then add our cost of raising, sacking and getting to the nearest shipping point, and we would be toiling with no other future than *inevitable ruin* before us. If we have a little lower freights *now*, it will be just what we have *dreaded* and before pointed out; for do you suppose ships will again return to put themselves under the despotic power of that Railroad Company that has proven itself entirely *soulless* and terribly despotic and grasping? Yes. In every instance where they had the *power* they have proven themselves tyrants. Do you suppose they are any different now? You certainly could not be so silly as that—you know better. The Hon. W. S. Green, in a well written article in the Colusa *Sun*, about a year ago, pointed out the fact that the railroad company would carry freight low for one season in order to discourage the *return* of ships. Of course it created some adverse criticism by the *railroad press*. I expected, and every other farmer in the State expected, to find such to be the case; and we dreaded it, for the same reason that the sailor dreads the calm more than the storm. We need the *storm* of *competition* to *save us*. But no matter how much competition we have, we can not get rid of the fact that by water we are 14,000 miles, *away* from market; and by rail it *actually costs* more than we can make to raise it and compete with the fast increase of wheat produced nearer to market. We *must* have a *cheaper route* where grain will not on the one hand have to be carried 14,000 miles or be *reshipped* in *sickly* ports on the other. In the last Legislature the questions of Lesseps and Nicaragua canals were urged, but no one *bit* at such *costly* or *distant* bait; while our legislators were guarding the interests of the people they could not favor such chimerical schemes. In the House they passed without opposition a bill endorsing Capt. Eads' Ship Railroad bill. In the Senate the Canal bills were equally unpopular; and Senator Langford offered the following concurrent resolutions, which were referred to the Committee on Commerce and Navigation, and were favored by them, but owing to the *dead-lock* on other bills there was no further action taken.

Senate Concurrent Resolution No. 18.

Introduced by Mr. Langford, Jan. 21, 1881, and referred to Committee on Commerce and Navigation. Concurrent Resolution relative to building a Ship Railroad across the Isthmus of Tehauntepec.

Whereas, Owing to the great extent of the Pacific coast, its vast agricultural, mining and commercial interests and its national importance in time of peace, and especially in time of war in helping to promote the unity of our nation, which is bounded by the two great oceans, and vindicate the Monroe Doctrine by every honorable means in our power, and advance the principles of true representative government by sustaining our position as the leading government in the world, recognized as the leader in modern civilization and worthy of this century, a period in the history of the world that has made more progress than all the distant past; and whereas the present routes of transportation for our leading low-priced staples of wheat, etc., will not bear the high prices necessary to the present rates on so great a distance as 14,000 miles of transportation around Cape Horn, therefore,

Be it Resolved, By the Senate of California, the Assembly concurring, That our representatives in Congress be requested and our Senators instructed to use all honorable means to hold our present advantage and still keep the lead worthy of us as a great nation by assisting our own engineer, Capt. Eads (who has been such a complete success in all his engineering efforts in constructing the greatest works of the age), in his efforts to procure assistance from our government in building a Ship Railroad across the Isthmus of Tehauntepec.

The three routes are now before Congress. Mr. Page, Chairman of the Commerce Committee, is opposing the Tehauntepec bill, in a very unfair manner, in the interest of his *friends*, the railroad company. Mr. Page represents many farmers as well as the railroad company, whose interests, he *ought* to *protect*, instead of working every way in his power *against* them; but it is to us a humiliating fact that the railroad company can name the chairman of committees—and, in short, run both the State and National Governments, and leave us to pay their expenses for the privilege of being governed by them.

The Ship Railroad is our only hope; we must make our representatives understand our wishes. The Panama Canal is the better of the two canals, but we have got to *back down* from our long-cherished Monroe Doctrine if we let monarchies get control of it, as the English have the Suez. Then again it will take twenty-five years to build it. There is 123 inches of rainfall, and it is thirty feet below sea level, with unknown quantities of water to contend with, having no drainage for thirty feet in the bottom. It is one of the sickliest climates in the world. The Nicaraugua I examined thirty years ago. I thought then as I think now, that it can be built; but a canal with "locks" is too slow, too costly and takes too long to build, for locks belong to a former age. Nicaraugua is also a bad climate—they have *jigger* and other fatal pests to contend with. This progressive age demands (if at all) a canal without locks (and it may be built by *future* generations), but *we need in the next four years* the railroad to cross our ships from ocean to ocean. To defend so *long a coast* as we would have to *defend*, to *enforce* the Monroe Doctrine and pay expense of wars would build *several* Ship Railroads. Then again it would be the quickest way to *settle* the Monroe Doctrine to build *our home route* from the Gulf of Mexico instead of going so *far* as Nicaraugua or Panama to get into a row—and the *safest* way to avert a war is to *hurry* up the *Ship Railroad*. Then declining monarchies will not build another route for glory alone. If Eads' concession from the Mexican government is passed under control of our government, as *provided in this bill*, then it *protects us* from these soulless corporations; but let *him be broken down* by *Page* and the railroad company, then his franchise will have to pass into *other* than *United States possession*; the railroad company will be sure to get a *controlling interest*, as they have just got of the new railroad, or else they will *pool* their issues as they have with the Panama Railroad. Our hope is in this cheap and speedy Ship Railroad, and it under control of the United States Government instead of the private aristocratic despotic R. R. Princes.

The engineering features of the Ship Railroad having been criticised by some of our best men, Admiral Ammen wrote to Sir Edward Reed—the best authority probably now living—for his views on the Tehauntepec Ship Railroad. He gives his own views as well as other letters addressed to him. Below find a few strictly correct extracts from them, also extracts from other letters addressed to Capt. James B. Eads, all from the *best engineers in England, Mexico* and *America*, which will be of interest to all desiring to inform themselves upon this great, this new, and this momentous question. They are as follows:

EADS' MEXICAN SHIP RAILWAY.

The greatest grade would be about one-third that of the Central Pacific, and that for not to exceed one-tenth the entire route, with rest of very easy grades.

Nathaniel Barnaby, the present Chief Constructor of the British Navy, says he thinks it entirely practicable to lift loaded ships from water and conduct them over railroads without as much straining as an ordinary sea passage.

Mr. John, who was the former scientific adviser of the Committee of Lloyd's Register of British shipping, and now is Manager-in-Chief of the Barron Shipbuilding Co., builders of the City of Rome (13,500 tons register), says the practice of lifting large sized ships clear out of the water is an every day occurrence; the convevance of them over a railway is a simple matter, certainly, not outside the reach of Civil Engineers.

George Forbury Lyster, Engineer-in-Chief of the Liverpool docks for the last twenty years—the Alexandra dock, constructed from his designs, costing $25,000,000, and capable of docking the Great Eastern, is said to be one of the wonders of the world. He says, I have been able to give the engineering feature a very careful consideration, and have concluded, that if the permanent way, cradle arrangements, and general details are carried out in the ingenious and substantial manner you described, there will in my judgment, be little or no difficulty in transporting properly constructed ships from sea to sea with entire convenience and safety.

Mr. Fowler, who was consulting Engineer of the Egyptian Government, Engineer-in-Chief of the Metropolitan (underground) railway of London, is now building the largest bridge in the world. He is Past-President of the Institute of Engineers in England; recognized as one of the ablest and most experienced of living Engineers. He says: When acting as Consulting Engineer to the Egyptian port, I was instructed to prepare a project for the transport of steamers and other vessels from one level to the other, at the first cataract of the Nile. After a very careful investigation of the alternative plans of canal and ship railway, on the spot, I decided in favor of the railway, having satisfied myself that there was no mechanical difficulty in carrying ships of any size without injury to themselves, on a properly designed car or cradle, over a solidly constructed railway.

Mr. E. Leander Williams, Chief Engineer of the Trent & Mersey Canal, and originator of the celebrated Anderton Lift (raising section of canal to connect with river Weaver). France and Belgium have ordered similar ones built of vast size. He says: I consider your plan for a ship railway quite practicable, and that it may be developed into a sound commercial enterprise. When I first proposed to lift loaded boats vertically fifty feet, so as to pass them in three minutes from the river Weaver to the Trent & Mersey Canal, without locks, many persons considered my scheme visionary, yet it has worked without a hitch for the past seven years. I believe your ship railway only requires carrying into execution to prove most successful in every way.

Lionel B. Wells, present Engineer of the Anderton Lift, says, I am satisfied that the proposal of Captain Eads to raise ships by mechanical means and convey them over land on a railway, and on carriages especially designed for the purpose, is one which is feasible and ought to succeed, and that the strains on the hull may be more accurately calculated and provided for on land than is possible when ships are subject to the varying conditions inseparable from a sea passage in stormy weather.

Sidengham Duer, the constructor of Bombay docks, says: At first I was prejudiced against the ship railway for want of proper examination, but now, after careful thought on this subject, I feel that there ought to be no doubt as to the safety of a ship at rest on a properly constructed carriage. My experience fully justifies me in saying that a large ship can be as readily and safely placed on a carriage as a small one can. Again, when I reflect on the shocks and blows of heavy seas and the large portions of the ship's surface that are at *times entirely out of water*, I begin to wonder why any one should doubt that it would be as safe, or even safer, on a well-constructed railway than when so tossed and buffeted about in what we have hitherto regarded as its proper element. In the Bombay docks a ship could be lifted off its keel, and when the bilge-blocks are carefully introduced *under* the *water* while the ship is afloat, it must be as free from strain as on smooth water, and the deck beams must be amply sufficient to resist any outward thrust that can arise from the cargo. There is no danger or difficulty in placing a loaded ship on a carriage suitable for a railway of transporting that ship and carriage from the water and draw it quickly and safely across the Isthmus, while being perfectly practicable, so far exceeds in *grandeur* anything that man has yet attempted.

Messrs. Clark and Standfield. Mr. Clark was the Chief Assistant of Robert Stephenson in the building of the celebrated tubular bridge over the Nenai Straits, and is the Engineer who introduced the hydraulic vertical lift system at Bombay, Malta and London; working satisfactorily, as we understand. It will be requisite to transport loaded vessels of the weight of 4,000 to 6,000 tons, more or less, on the railway at the rate of about six miles per hour, and to raise vessels out of the water on a railway car, not to exceed 46 feet, and deposit them on the rails in a time not exceeding thirty minutes; the *hydraulic system* would probably be the most rapid, but probably the most costly. At the Bombay Hydraulic dock we have lifted weights up to 12,000 tons, with seventy-two presses, fourteen inches diameter and thirty-six foot stroke. At the canal lift at Fontinette's, we employ presses with rams six feet seven inches in diameter, with a fifty-foot stroke. Each of these presses will raise a dead weight of 1,000 tons through a hight of about fifty feet in three minutes. It is evident that a few presses such as these would more than accomplish the work required. Our ordinary depositing dock, similar to that at Sebastopol, which raises vessels of 6,000 tons, would also meet the requirements of the case very satisfactorily. We are now constructing a second of the docks of 10,000 tons for the Russian Government. We have designed one of these docks for the Italian Government to raise iron-clads of 15,000 tons weight, with a lift of 30 feet; there would be no difficulty in modifying to 46 feet, and this form of dock raises the vessels out of the water and deposits them on a gridiron stage in a most convenient manner for railway transport. We apprehend no difficulty in transporting the largest loaded ships on railway cars with absolute safety.

Emmerson, Murgatroyd & Co., are contracting engineers who constructed the Anderton Lift and the Hydraulic Docks at Malta and Bombay. They say: We have no hesitation in guaranteeing the lifting of a fully loaded ship or steamer of 8,000 or 10,000 tons weight on a railway car of the sea or harbor level to that of your permanent way, in 30 minutes, with absolute safety to the ship and the works, where the lift is not over 50 feet vertically. We will undertake to construct everything at each end of your line, ready to attach the locomotive to the car, or furnish any number of such cars as required.

Mr. W. Pearce, sole proprietor of John Elder & Co.'s works, Goran, near Glasgow, says: The heaviest armor-clads may be lifted out of the water without any damage; 5,000-ton ships may be docked and loaded without any injury whatever. It is my opinion that a ship railway for 5,000-ton vessels may be constructed and worked successfully, provided the land is solid and moderately level.

Mr. B. Baker, an eminent engineer of London, says a vessel that would not break up at sea in an ordinary gale would not be injured by transport in a well-constructed car on a suitably formed railway.

Don Francisco de Garay, present Engineer of the Valley of Mexico, made member of the Legion of Honor by the French government, was sent by the Mexican government to the Canal Convention at Paris in 1879. He denies Mr. McAlpine's statement that there are cuts of 800 feet. There is but one cut as great as 312 feet maximum depth, but the ridge that it divides has only 2,500 feet in thickness. This is good for drainage and blasting. I have no grade above two per cent. and for no greater distance than two and a half miles. McAlpine admits we may run one mile per hour. If we begin with one mile on the ship railway, before long we will run ten or fifteen miles per hour.

William Sooy Smith, in charge of the tunnel under the Hudson River, says: As part of the designs of a canal around Niagara Falls, on the American side, which I made in the year 1857, I planned a ship railroad to carry vessels navigating the Western Lakes down the side of what is called the mountain, near Lewiston. The study given to the subject at that time convinced me of the entire practicability of moving ships of the largest size over land safely, expeditiously and economically. This conviction has been strengthened by all the investigations and observations made upon the subject ever since. The ship railway will only be enlarging what is now in successful operation. I think you can work it out, and that you have selected the best possible place in which to prove it both practicable and profitable.

Mr. Edward Hartt, one of the oldest and ablest constructors in the United States navy, says: On the railroad not exceeding one or two feet grade in the one hundred there can be no mechanical difficulty in the way of transporting loaded ships by railroad with entire safety to the vessels whether they be built of wood or iron. With sufficient wheels and rails on the road-bed, fully loaded vessels can be transported without straining their hulls. The speed will depend entirely upon the size and number of the locomotives. The ship railway plan possesses the advantage of more rapid transit for the vessels, and its capacity could easily be increased to meet the wants of commerce.

H. L. Fernald, United States Naval Constructor, says: Your railroad has one important advantage over the railway canal, that the vessel's bottom, propeller, etc., can be examined, and if necessary cleaned in transit, even better than in a dry dock.

Q. A. Gilmore, President of the Mississippi River Commission, thinks the railroad feasible and practicable as an engineering and business proposition.

Mr. Henry Flad, President of the Board of Public Works in St. Louis, says that the first cost of the construction of a ship railroad will probably take but one-quarter of that of a ship canal, will probably take but one-third of the time in constructing; that ships can be transported on such railroad with absolute safety; that the cost of maintenance will be less for a railroad than for a canal; and that it will be a safe investment.

Mr. C. Chanute, Superintendent of the Erie Railway, says: I see no reason why the railway should not be worked at ten miles per hour; and assuming it to be sixty miles long, why a steamer cannot be transferred from ocean to ocean in twelve hours.

Commodore Shufeldt, United States Navy, says: I am of the opinion that Tehauntepec possesses the best route for transit. I do not see why a railroad capable of carrying a ship could not be built. The fact of a harbor twenty-five miles long on the Atlantic side is of the utmost importance.

Col. C. Shaler Smith says it will be a serious reflection on the American engineers and patriotism of our statesmen if foreign capital and foreign skill are to perform the work of severing our continents and then pocketing the profits of an enterprise, most of the cost of which must eventually be paid by our citizens in the shape of tolls upon our bi-oceanic coasting trade.

B. M. Harrod, of the Mississippi River Commission, formerly State Engineer of Louisiana, says: It seems to me to have the great merits of excluding the necessarily uncertain elements in the estimate for any canal.

T. C. Clark, of the firm of Clark, Reeves & Co., railroad and bridge engineers, says: I desire to have my opinion on record that your ship railway is practicable to construct and can be maintained as easily as any other railway having as large a tonnage; and that vessels of 4,000 tons can be carried across without injury to themselves or their cargoes.

Gen. G. T. Beauregard, formerly a member of the United States Corps of Engineers: I see no difficulty in constructing a railway strong enough to carry out the object referred to. It is only a question of the strength of the cradle and distribution of weight on a sufficient number of rails and wheels, which can certainly be accomplished by any engineer of ability and ingenuity. It is therefore safe to assume that the current expenses and those in maintenance would not exceed fifty per cent. of the gross receipts, which would be more profitable than from a canal costing propably two or three times more than a ship railway and requiring three or four times longer to build, thereby increasing greatly the amount of interest alone on the actual cost of the canal. The number of trucks could be increased to carry a greater number of vessels per day. It would be practicable to build a railway where a canal would be impossible. To estimate correctly, where built partly under water or liable to be submerged or interrupted by water, it would be impossible to estimate the cost of construction of a canal.

Mr. J. J. Williams, who has made railroad surveys on the Isthmus of Tehauntepec, says: Having carefully examined the plans and being thoroughly familiar with the topography of the Isthmus, I desire to express my full conviction of its entire practicability.

Mr. E. L. Corthell, engineer of the bridge across the Mississippi River at Louisiana, engineer at the jetties, etc., says: I believe the ship railway for the transportation overland of the largest vessels can be made entirely successful, and the ships can be transported more rapidly by the railway than by the canal and with equal safety.

H. D. Whitcomb, sent by the United States government to Europe to report upon the jetty system, says: The idea is worthy of the age, and to make it a success you have simply to expand the details of the old marine railway.

E. A. Fuertes, of Cornell University, says: The *Great Eastern* could be carried safely over land upon rails with less strain to her timbers than in any ordinary sea voyage. All routes outside the Gulf of Mexico will be detrimental to the most vital interest of the United States and a source of great danger to our national stability. I can assure you, upon knowledge of every inch of the ground, that you will find no difficulty about curves, grades or bridges. The ascent of the Atlantic slope will offer no more difficulties than the Hudson River Railroad. On the Pacific side, either one of the three passes, all on no steeper grade than twenty-five to thirty-five feet per mile, excellent cement material, abundant native labor, a remarkably healthy climate, is all that is desired. I think the railroad will very soon handle 30,000 tons of freight daily.

Capt. Silas Bent, formerly an officer of the United States Navy, who has made a study of winds and currents of the ocean, claims great advantage of the trade winds for a Tehauntepec route; thinks it could be built for one-third, and would be for the political well-being of our country.

Sir Edward J. Reed, Member Parliament, claimed to be highest authority on this subject in the world, says: The weight of a car to carry a 4,000-ton ship need not exceed 500 tons, or one-eighth deadweight. Although there would be obvious conveniences in keeping the ship always afloat (in tank) during transit, I am of the opinion that this would invoke unnecessary expense, and that no sufficient reason exists for pursuing this plan. I prefer lifting directly out of the water; then it is easiest to protect the bottom instead of hauling out of the water on an inclined carriage; the strain of a direct lift is less than a ship is liable to in a storm. Ships and cargo have been lifted high and dry at Malta without any injury. It would not be necessary for a special cradle for each ship. A wooden vessel three hundred feet long when lifted on the crest of a wave twenty feet high from hollow to crest, tends to produce hogging, but is reversed while in the hollow. A gradient of forty feet per mile, at slow speed, a good engine will draw 800 tons; six engines would be sufficient for ships and cradle, with extra engines over the worst places. Eight hundred wheels I think sufficient, but could be extended any time. Coal could profitably be hauled for ¼ ct. (½ ct. per mile); if we assume the distance 150 miles across the Isthmus, the cost would be 75 cents per ton. Suppose we assume it twice as expensive, that makes it $1.50 per ton across the Isthmus of Tehauntepec. I am creditably informed that $20 per ton is paid from San Francisco to Liverpool (or 80 shillings, and as high as 87 shillings were paid). I have no words but those of encouragement for the ship railway.

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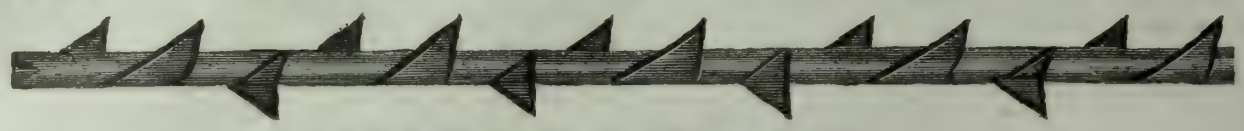

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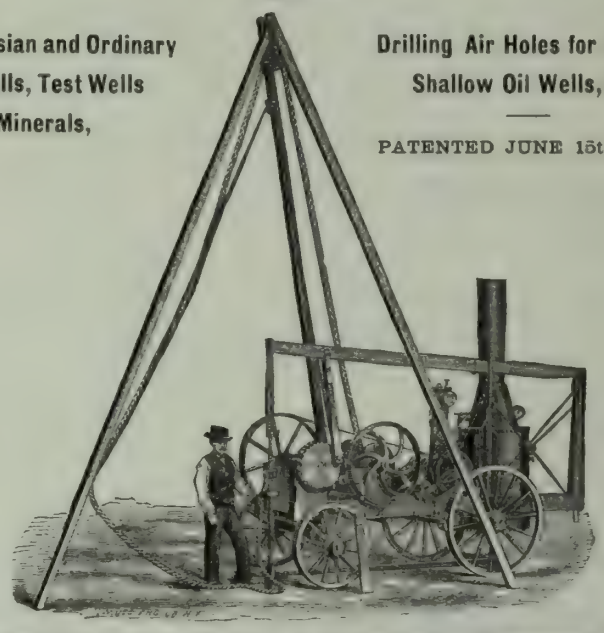

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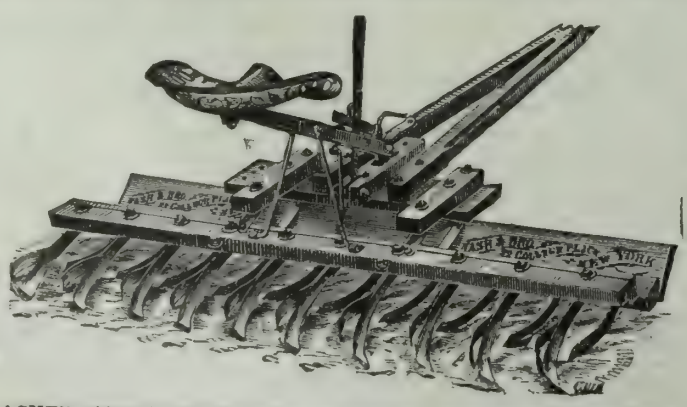

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T. WAITE, Brighton, Sacramento Co. Breeder of Thoroughbred Berkshire Hogs and choice Imported Poultry. Took Premium State Fair, 1880 and 1881 of Leghorns (brown and white), Speckled Hamburgs, Plymouth Rocks and Pekin Ducks.

JOHN RIDER, Sacramento, Cal. Breeder of Thoroughbred Berkshire Swine. My stock of Hogs are all recorded in the American Berkshire Record.

ELIAS GALLUP, Hanford, Cal., Breeder of Poland China Swine. Stock recorded in American Poland China Record. Are descendants of the celebrated McCrary-Bismarck, bred by D. M. Magie, Oxford, Ohio. Took five First Premiums at State Fair in 1880.

TYLER BEACH, San Jose, Cal. Breeder of thoroughbred Berkshires of stock imported by Gov. Stanford

BEES.

J. D. ENAS, Sunnyside, Napa, Cal., Breeds Pure Italian Queen Bees. Comb Foundation.

MAKE HENS LAY.

An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable. Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

IMPORTANT!!!

That the public should know that for the past ELEVEN years our SOLE BUSINESS has been, and now is, importing (OVER 100 CARLOADS) and breeding improved Live Stock—Horses, Jacks, Short Horns, Ayrshires and Jerseys (or Alderneys) and their grades; also ALL THE VARIETIES of breeding Sheep and Hogs. We can supply any and all good animals that may be wanted, and at VERY REASONABLE PRICES and on CONVENIENT TERMS. Write or call on us. LICK HOUSE, San Francisco, Cal., October 22, 1881 PETER SAXE & HOMER P. SAXE.

PETER SAXE & SON

PURE BRED POULTRY.

Langshans, Cochins, Brahmas, Leghorns, Plymouth Rocks, Dorkings, Pekin and Rouen Ducks, Bronze Turkeys, Etc.

I have a large stock of the above varieties for Sale Cheap, considering the quality of stock. For further information, send 3 cent stamp for new circular and price list to **R. C. HEAD, Napa, Cal.**

Oakland Poultry Yards.

Cor. 17th and Castro Sts., Oakland, Cal.

GEO. B. BAYLEY, Importer and Breeder of all the best known and most profitable varieties of Land and Water Fowls. Brahmas, Cochins, Houdans, Leghorns, Polish Hamburgs, Bronze Turkeys, and the new fowl, American Sebright, or Eureka. Agent for the Pacific Incubator; capacity, 500 eggs. Guaranteed to hatch 90% of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season. Price, $90. For further particulars send stamp for illustrated circular to GEO. B. BAYLEY, Box 1771, San Francisco.

IMPROVED

EGG FOOD

To Keep Hens Healthy

AND MAKE THEM LAY.

The IMPROVED EGG FOOD is composed of more than twenty-five different articles. Every article tested by chemical analysis and thereby shown to possess the desired qualities to keep hens healthy and make them lay, as well as to promote the health and cure every disease of young chickens, ducks, turkeys, geese and every kind of fowl.

The IMPROVED EGG FOOD is now fully decided (by hundreds who have tried it), to be indispensable to all who keep poultry and would make them profitable. To those who have not tried it, I would say, GIVE IT A TRIAL. I am manufacturing this in large quantities, and have reduced the price accordingly.

1-lb. Boxes, 40 Cts. 3-lb. Boxes, $1.
10-lb. Boxes, $2.50. 25-lb. Boxes, $5.

B. F. WELLINGTON, Prop'r.

Also, Importer and Dealer in Seeds.

425 Washington St., San Francisco.

GEO. TREFZER, Napa City, Cal.

Breeder and shipper of the following varieties, will sell after this day at greatly reduced prices, as sickness in the family compels me to reduce my stock. My breeding yard of Black Cochins (1 cock and 7 fine hens), all good birds, including my imported trio for which I paid $25 in the East—eggs, $2 per setting. My breeding yard of Brown Leghorns, consisting of 1 fine imported cockerel and 10 fine hens for $20; eggs, $2 per setting, or 2 settings for $3. White Leghorn eggs, $2 per setting or 2 settings for $3. Have as fine a White Leghorn cockerel in my breeding yard as can be found in America. Plymouth Rocks, $6 per pair or $8 per trio; eggs, $2 per setting, or 2 settings for $3. My Plymouth Rocks breeding yard consists of 1 very fine imported cockerel from James E. White, and 8 fine hens and pullets. Langshan eggs, $4 per setting; no fowls or this variety for sale this season. Pekin Ducks, $2 each; eggs, 11 for $2. Toulouse Geese eggs, $4 per setting of 6. Anybody that wants to buy fine Fowls for little money have an opportunity to do so now. Please address as above.

LAUREL RANCH!

Thoroughbred

Spanish Merino SHEEP.

We offer for sale 400 HEAD OF YOUNG EWES AND RAMS. Prices always reasonable and terms liberal. Quality and condition superior to any flock in this State.

J. H. STROBRIDGE, Haywards, Alameda Co.

E. W. PEET, Agent.

CARP FISH

FOR SALE.

Can be forwarded by express, or rail or water, with safety. Inquire of LEVI DAVIS, Forestville, Sonoma County, Cal.

To Fish Raisers.

I am now ready to sell Carp which were imported from Germany in 1872, in lots to suit. Address

J. A. POPPE, Sonoma, Cal.

Holstein Cattle.

CLYDESDALE AND HAMBLETONIAN

HORSES.

The largest and deepest milking herd of Holsteins in the world. 225 head, pure bred, mostly imported, males and females of different ages.

A Large and elegant stud of imported Clydesdale Stallions and Mares of all ages

Hambletonian Stallions and Mares of superior breeding. Personal inspection invited. Separate catalogues of each class, and milk records of cows mailed free on application. All inquiries promptly answered. State that you saw this advertisement in the PACIFIC RURAL PRESS.

SMITHS & POWELL,

Lakeside Stock Farm, Syracuse, N. Y.

Short Horn Bulls For Sale.

The undersigned now have for sale a few choice Thoroughbred and high grade bulls from the best milk strains. Our herd consists of "Young Marys," "Daisies," "Imp Britannias," etc. Prices Reasonable.

HYDE & MOORE, Visalia, Cal.

ITALIAN SHEEP WASH.

EXTRACT OF TOBACCO.

Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

SCAB OF THE SHEEP.

The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

For particulars apply to CHAS. DUISENBERG & CO. Sole Agents, 314 Sacramento St., San Francisco.

JACKS FOR SALE.

We have just imported a carload of

THOROUGHBRED KENTUCKY AND MISSOURI

JACKS,

From yearlings up to nearly 16 hands high. Will guarantee them sound, good performers, and sure foal-getters.

Also, for sale, one THOROUGHBRED STALLION, "Young Lodi," sired by "Old Lodi," and he by "Old Lexington," of Kentucky.

Price, from $300 to $1,000.

Crow's Landing (near Modesto), Stanislaus Co., Cal.

A. M. & E. W. CROW.

February 1, 1882.

OIL CAKE MEAL.

Best Food for Milch Cows Or Fattening Stock.

CHEAPEST FEED FOR SHEEP.

FOR SALE BY

KITTLE & CO.

202 California St., S. F.

Calvert's Carbolic

SHEEP WASH.

$2 per Gallon.

After dipping the Sheep, is useful for preserving wet hides, destroying the vine pest, and for wheat dressings and disinfecting purposes, etc. T. W. JACKSON S. F., Sole Agent for Pacific Coast.

JOHN JENNINGS.

Hooper's South End Grain Warehouses,

Cor. Japan and Townsend Sts., S. F.

First-class Fire-proof Brick Building. Capacity, 10,000 tons. Goods taken from the Dock and the Cars of the C. P. R. R. and S. P. R. R. free of charge. Storage at Current Rates. Advances and Insurance effected.

GRANGERS' BANK

Of California,

SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,000,

In 10,000 Shares of $100 each.

Capital Paid up in Gold Coin, $531,200.

Reserve Fund and Paid up Stock, 21,178.

OFFICERS:

JOHN LEWELLING.....President
A. D. LOGAN.....Vice-President
ALBERT MONTPELLIER.....Cashier and Manager
FRANK McMULLEN.....Secretary

DIRECTORS

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CURRENT ACCOUNTS are opened and conducted in the usual way, bank books balanced up and statements of accounts rendered every month.

LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

GOLD and SILVER deposits received.

CERTIFICATES OF DEPOSIT issued payable on mand.

TERM DEPOSITS are received and interest allowed as follows: 4% per annum if left for 6 months; 5% per annum if left for 12 months.

BILLS OF EXCHANGE of the Atlantic States bought and sold.

ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1882.

SPECIAL STOCKHOLDERS' MEETING.

Grangers' Business Association,

OF CALIFORNIA.

Five Directors of the above-named corporation, and stockholders thereof, representing more than one-tenth of the stock issued, having made a written request to the President to call a special meeting of the stockholders, therefore, pursuant to such request, notice is hereby given that a special meeting of the stockholders of the Grangers' Business Association of California will be held at the office of the Association, No. 38 California street, San Francisco, on Wednesday, the 15th day of March, 1882, at the hour of 1 o'clock P. M., for the purpose of considering the question of making a sale of the property of the Association, and for the transaction of such other business as may come before the meeting.

DANIEL INMAN, President.

Attest: AMOS ADAMS, Secretary.

CHEAP CASH GROCERIES

— AT —

NEUMAN'S.

All kinds of Fancy and Staple Groceries, wholesale and Retail, at their Stores,

323 to 331 Sixth St., 1307 Polk St.,

— AND —

1144 AND 1146 FOLSOM ST., S. F.

Goods delivered to any part of the city, or to any railroad, steamer or vessel, free of charge.

Country Orders Specially Solicited.

All such orders must be accompanied by a check or cash. All goods promptly delivered and warranted as to quality.

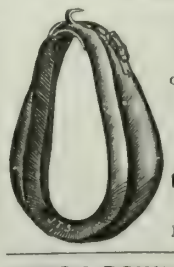
Orders most respectfully solicited.

J. T. STOLL'S

OPEN TOP

IMPROVED HORSE COLLAR

Patented Jan 18th, 1881.



It saves your horse's neck.
It is the best Collar in use.
It can be adjusted to any shape or any animal's neck.

Send for sample.

JOHN T. STOLL,

Harness and Saddle Manufacturer,

NO. 610 K ST., SACRAMENTO

HORSE-POWER ROTARY PUMP.

The most complete, compact, durable and effective machine for pumping and other light work. No jerk or jar; runs easy and gives a continuous stream of water. Is light, portable, convenient to move or set in operation. Capacity, 2,000 gallons an hour, with one horse. Weight, all told, 600 lbs.

R. M. BEEBEE,
Gridley, Butte County, Cal.

The American Driven

WELL WATER SUPPLY SYSTEM

FOR MINING, IRRIGATION, MECHANICAL DOMESTIC & MUNICIPAL PURPOSES

Send for Circulars.

BABCOCK, HOWARD & CO.,

40 Merchants' Exchange San Francisco, Cal.

GUNS

Lowest prices ever known on **Breech-Loaders, Rifles, and Revolvers.**

OUR $15 SHOT-GUN

at greatly reduced price. Send stamp for our New Illustrated Catalogue (B)

P. POWELL & SON, 238 Main Street, CINCINNATI, O.

CHEAP CASH GROCERIES.—By reference to our advertising columns, our readers will find a card from the Neuman Bros., of this city in which they offer all kinds of fancy and staple groceries, wholesale and retail. These gentlemen were well known a few years ago for their efforts to introduce the manufacture of silk into this State. Of late years, however, they have turned their attention to the more practical and more profitable business of supplying their fellow-citizens with groceries, fancy and staple, at wholesale or retail. They have three large stores in this city, to-wit: 323 to 331 Sixth street; 1307 Polk street, and 1144 and 1146 Folsom street. At their principal store, on Sixth street, they offer a very large stock of goods, either wholesale or retail. Country orders are especially solicited. Ranch owners who buy largely and country dealers and shipmasters will do well to call at that store, where they will be sure to have their orders supplied at the lowest current rates, and promptly delivered to steamer, vessel or railroad free of extra charge and warranted as to quality. Families in this city are also promptly served. As they sell for cash, they are not compelled to average on their paying customers the losses by bad debts, as is always the case with those who sell on credit.

SORGHUM HANDBOOK.—We have received a copy of Blymer Manufacturing Co's Sugar Handbook for 1882. It contains much information concerning the Sorgo and Imphee canes, their varieties, culture and manufacture. Whilst comprised in small compass and furnished to all applicants free, we believe it to be the best practical manual of the Chinese and African canes published. As there seems to be a general revival of the public interest in cane culture, this little pamphlet may be found of value for reference.

WE wish to call the attention of our readers to the importance of raising the best of any kind they have on the farm. It is as cheap to raise a good article as a poor one. The hog is a source of profit to the farmer, and those who believe in the Berkshire breed will do well to see Jackson & Truman's, which they have on their farm at Mountain View. They imported from England in the spring of 1880 a pair of very choice Berkshire hogs from a celebrated English breeder and have now for sale some very fine young pigs. The pedigrees of the pair imported are given as follows: Pure-bred Berkshire sow "Black Bess," sire "Tiger 2nd," winner at Atherstone and Wolverhampton, 1879, dam 'Black Bess," by "Tiger 1st." Graded "Tigress," winner at Gloucestershire, Worcestershire, Leicestershire and Staffordshire, in 1877 and 1878. Pure bred Berkshire boar "Black Jack," sire "Jack," dam granddaughter of "Lady Henley."

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

A TURNED LEAF will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances. The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

POSTMASTERS having their attention directed to this notice by the publishers, are requested to act as agent for this paper (whenever they can do so without interference with our published list of solicitors), and we will allow them a favorable commission on subscriptions, as per terms published elsewhere.

REMITTANCES to this office should be made by postal or deposit registered letter, when practicable; cost of postal order, for $15 or less, 10 cts; for registered letter, in addition to regular postage (at 3 cts. per half-ounce), 10 cts

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

ANNUAL STATISTICIAN of 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 816 California st. Price, $4.

Try the Rural Press for 25 Cts. a Month.

Tell your friends that they can have the PACIFIC RURAL PRESS mailed to them one month on trial for 25 cents. Four back Nos. will be added on receipt of 10 cents additional—making eight copies for 35 cents. It is a handsomely printed and illustrated home journal. Mail it to friends abroad.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired), be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

OUR attention has been called to the remarkable curative properties of Burnham's Abletene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts and $1 per bottle.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Mar. 8, 1882.

The "call" business on the Produce Exchange has proceeded during the week. The sales during this week have been lighter than last, but some trading has been done every day. The following is a review of the transactions on call during the last five days: Wheat, 75,700 centals, valued at $120,906; Barley, 26,400, at $41,623; Oats, 500, at $906; Beans, 400, at $1,530; Corn, 400, at $740; Rye, 200, at $410; Bran, 4,700, at $3,861; Potatoes, 275, at $511; Hay, 50 tons, at $700; Bags, 370,000, at $2,998. Total value, $204,185.

The Wheat trade has been rather out of condition this week, owing to unfavorable advices from abroad. There have been very large imports of Wheat in the English market, and it would seem that a little time should be given to clearing away. The latest from Liverpool is as follows:

LIVERPOOL, March 7.—Wheat: California, spot lots are dull, at 9s 9d@10s. Cargo lots are weak; the rates are 44s 6d for just shipped, 47s 6d for nearly due and off coast.

The Foreign Review.

LONDON, March 6.—The Mark Lane *Express* in its review of the British Grain trade for the past week, says: The rainfall stimulated the growing crops, Wheat presenting a strong and healthy appearance. Deliveries of native Wheat lessened considerably, the demand being very restricted, prices continued to drop, Flour continually cheapening and foreign Breadstuffs declining. The market closed cheaper for all descriptions, Flour being very much depressed. It appears now certain that the market will be overdone with foreign Flour. Maize closed cheaper. Mixed American on Friday sold at 28s, ex-ship, being a decline of 6d. Grinding Barley and Oats are dull. Cargoes off coast are dull and weak. There were 10 fresh arrivals, 8 sales and 6 withdrawals; 3 cargoes remained on sale on Saturday, including 1 American Spring and 1 Californian. Trade in forwards is dull and drooping. Sales of English Wheat during the week were 34,363 quarters, at 44s 9d per quarter, against 31,525 quarters, at 41s 7d per quarter, for the corresponding week of last year.

Freights and Charters.

A statement of tonnage in and to arrive at this port was as follows:

	1881.	1882.
Engaged, Wheat, tons	53,392	61,070
Disengagen, tons	11 121	31 657
To arrive, tons	178,876	224,591
Total, tons	243,389	317,348
Increase for 1882		73,959

The present freight rate is about 50s for iron.

Eastern Wool Markets.

NEW YORK, March 5.—Buyers and sellers are still inclined to much caution, and the general tone of business in consequence lacks spirit and animation, the movement of supplies finding its base principally in early and actual requirements of consumers, with no very positive change in prices, though there is an absence of inclination toward anything better than simple steadiness. The position this week has been somewhat benefited by advices from the London sales, which have opened rather better than anticipated, and agreeable disappointment in this respect appears to make operators a little more cheerful. All buyers who have come to hand, however, were received with much attention, and, if willing to pay former rates, obtained the supply called for, with a slight probability of gaining a small fraction in close negotiation. In brief, the position may be written of as moderately active and nominally steady, with very few expressions of a buoyant character among holders. Foreign grades are slow and unchanged. Sales include 115,000 lbs fall California at 14¾@29c; 7,000 lbs spring at 20c, 10,000 lbs scoured at 64@72c.

BOSTON, March 7.—The market is steady and firm under continued favorable advices from London. Sales of Ohio and Pennsylvania fleeces are quoted at 43@45c for X and XX, choice selections, 46; Michigan and Wisconsin XX, 42@43c; medium and No. 1 fleeces, 45@48c; combing and delaine selections are firm, in a range of 46@50c for fine delaine and medium combing; unwashed combing is selling at ruinous prices as to quality; low and coarse is saleable only at low figures. The demand runs on fine grades. California Wool is unchanged, and stocks sold up close. Pulled Wools are firm, and have been in demand; sales low and good supers at 30@43c, choice Eastern and Maine, 45@52½c. Foreign Wool is firm, and sales of Australian, Montevideo and Cape have been made at full prices.

London Wool Sales.

LONDON, March 6.—To-day 10,000 bales of Wool were sold, principally Port Phillip and Adelaide. A good spirit was manifested and previous quotations were maintained.

BAGS—The trade is dull; $8 90 per 100 was asked on Call for Calcuttas, July delivery.

BARLEY—Call sales of 25 tons No. 1 Feed, 25 days storage, $1.73¾; 200 ctls do, seller 5, $1.73¾; 25 tons do, July, $1.45. For No. 1 Brewing, April, $1 85 was asked; for No. 2 do, May, $1 80 was bid and $1.82½ asked; for No. 1 Feed, with 30 days' free storage, $1.72½ was bid and $1.75 asked. Other bids for No. 1 Feed were $1.55 for April, $1.50 for May, $1.45 for June, $1.55 asked; for September, $1.40 asked. For No. 2 Feed, June $1.42½ bid and $1.50 asked; for September $1.32½ bid and $1.35 asked. An offer to sell No. 1 Chevalier at $1 70, Decoto delivery, season's storage paid, was not taken.

BEANS—Beans are very quiet 200 ctls No. 1 Bayos, sold on spot at $3 25 per ctl.

CORN—Some Eastern Corn is being brought overland at a freight rate of 65c ⅌ ctl in bulk. No sales have been reported for a day or two.

DAIRY PRODUCE—Butter is coming in more freely again, but prices are unchanged as yet. Cheese is cheapening a little.

EGGS—Eggs have dropped to 19@21c ⅌ dozen.

FEED—Bran is held at $18 50@$19. 25 tons May delivery, sold at $14.75.

FRESH MEAT—Choice Beef is sold up to 8c; other meats are unchanged. Much poor Pork, Mutton and Lamb is arriving.

FRUIT—There is little change in values. Limes are still up, but there are fresh lots of Mexican Limes in the harbor, and lower rates are expected.

HOPS—Hops are still lifeless and rates unchanged. From New York, by mail, comes the *Producers' Price Current* of February 25th, which says: The market is very dull and there is sufficient stock offering to give buyers an advantage of about 1c; we consequently shade our quotations to more nearly represent selling values.

OATS—Oats are held above the market and are firm. Sales are few; $1.85 is asked for choice No. 1 Oats.

ONIONS—Prices range from 90c to $1.10.

POTATOES—There has been a farther advance. Humboldt Peachblows have sold on Call at $2.25 per ctl.

PROVISIONS—There is a good export trade for various points on the Pacific, and the feeling is firm, although prices have not changed.

POULTRY—Prices are better all around. Turkeys are higher than for several weeks.

VEGETABLES—Asparagus is reduced to 25c per lb. Rhubarb goes at 10@15c. Cauliflower has advanced to 90c@$1 per doz.

WHEAT—Business is very light. The only sales on the Call Tuesday were: 200 tons No. 1 White, alongside ship at Mission Rock, $1.65; and 50 tons No. 1 Amber, Mission Bay, seller 5, $1 60. On an extra choice there were neither offers nor bids. For new No. 1 White, July, $1.60 was bid. For No. 2, spot, $1.62½ was bid. For No. 2 Amber, March, $1.55 was bid and $1.60 was asked. For extra choice Sonora, Port Costa, $1.65 was bid for March and April. For No. 1 Sonora, March, $1.62½ was bid and $1.65 asked; for new July, August or September, $1.50 was bid. For new No. 1 White, July, $1.60 was bid and $1.65 asked. To-day, Wednesday, the only sales were of new Wheat, for instance: 100 tons July, new, No. 1 White, $1.62½; 100 tons No. 1 Sonora, July, new, Stockton, $1.57½.

WOOL—Sales are small and rates as before.

Domestic Produce.

WHOLESALE.

WEDNESDAY M., March 8, 1882.

BEANS & PEAS.		Pecans	13 @ 15
Bayo, ctl	– @3 50	Peanuts	6 @ 6½
Butter	3 75 @4 25	Filberts	14 @ 15
Castor	3 50 @4 00	**ONIONS.**	
Pea	– @4 75	Red	– @ –
Red	– @3 00	Silverskin	90 @1 10
Pink	– @3 00	Oregon	– @ –
Large White	3 00 @3 25	**POTATOES.**	
Small White	– @4 75	Early Rose	1 90 @2 00
Lima	– @6 00	Petaluma, ctl	2 15 @2 25
Field Peas, blk eye	50 @1 75	Tomales	2 10 @2 20
do, green	2 00 @2 25	Humboldt	2 10 @2 25
BROOM CORN.		" Kidney	– @1 75
Southern	3 @ 3½	" Peachblow	2 00 @2 25
Northern	4 @ 6	Jersey Blue	– @ –
CHICORY.		Chiffey Cove	– @ –
California	4 @ 4½	River, red	1 90 @2 00
German	6½@ 7	Chile	1 50 @1 55
DAIRY PRODUCE, ETC.		do, Oregon	1 75 @1 90
BUTTER.		Oregon Peerless	– @2 00
Cal. Fresh Roll, lb	30 @ 33	Sweet	1 00 @1 25
do Fancy Brands	– @ 34	**POULTRY & GAME.**	
Pickle Roll	– @ –	Hens, doz	5 50 @ 6 50
Firkin, new	25 @ 30	Roosters	5 00 @ 8 00
Eastern	18 @ 22½	Broilers	5 00 @ 7 00
New York	– @ –	Ducks, tame, doz	7 00 @ 8 50
CHEESE.		Mallard	2 00 @ 2 50
Cheese, Cal., lb	17 @ 18	Sprig	1 50 @ 1 75
EGGS.		Teal	75 @ 90
Cal. Fresh, doz	19 @ 21	Widgeon	1 00 @1 12½
Ducks	– @ –	Geese, pair	1 50 @2 00
Oregon	– @ –	Wild Gray, doz	1 75 @2 00
Eastern, by expr'ss	– @ –	White do	50 @1 00
Pickled here	– @ –	Turkeys	13 @ 16
Utah	– @ –	do, Dressed	14 @ 18
FEED.		Turkey Feathers, tail and wing, lb	10 @ 20
Bran, ton	15 50 @19 00	Snipe, Eng	2 00 @2 50
Corn Meal	42 00 @43 00	do, Common	50 @ 75
Hay	11 00 @16 00	Quail, doz	75 @ 80
Middlings	28 00 @30 00	Rabbits	1 00 @1 25
Oil Cake Meal	– @30 00	Hare	1 50 @1 75
Straw, bale	– 62½@– 70	Venison	5 @ 7
FLOUR.		**PROVISIONS.**	
Extra, City Mills	5 25 @5 50	Cal. Bacon, extra clear, lb	12½@ 13½
do, Co'ntry Mills	4 75 @5 00	Medium	12 @ 13½
do, Oregon	4 75 @5 12½	Light	13 @ 14
do, Walla Walla	4 50 @5 00	Lard	13 @ 16
Superfine	3 50 @4 25	Cal. Smoked Beef	11½@ 12½
FRESH MEAT.		Shoulders	9½@ 10½
Beef, 1st quality, lb	8½@ 9	Hams, Cal	12½@ 13½
Second	5½@ 6½	do, Eastern	15½@ 16½
Third	4 @ 4	**SEEDS.**	
Mutton	6½@ 8	Alfalfa	12 @ 13
Spring Lamb	14½@ 15½	do Chile	– @ –
Pork, undressed	8½@ 9	Canary	3½@ 4
Dressed	8½@ 9½	Clover, Red	14 @ 15
Veal	7½@ 8	White	45 @ 50
Milk Calves	7½@ 8	Cotton	– @ 20
do, choice	– @ 10	Flaxseed	2½@ 3½
GRAIN, ETC.		Hemp	– @ 5
Barley, feed, ctl	1 65 @1 75	Italian Rye Grass	25 @ –
do, Brewing	1 80 @1 85	Perennial	25 @ –
Chevalier	1 65 @1 70	Millet, German	10 @ 12
Buckwheat	– @1 75	do, Common	7 @ 10
Corn, White	2 00 @2 25	Mustard, White	12½@ 2½
Yellow	1 87½@1 90	Brown	2½@ 3
Small Round	1 87½@1 90	Rape	2½@ 2½
Oats	1 75 @1 85	Ky Blue Grass	20 @ 25
Milling	1 87½@1 95	2d quality	16 @ 18
Rye	2 25 @2 30	Sweet V Grass	– @ 75
Wheat, No. 1	– @1 65	Orchard	20 @ 25
do, No. 2	1 60 @1 62½	Red Top	– @ 15
do, No. 3	1 45 @1 50	Hungarian	8 @ 10
Choice Milling	– @ –	Lawn	30 @ 40
HIDES.		Mesquit	10 @ 12
Hides, dry	– @ 18	Timothy	9 @ 10
Wet salted	9½@ 11	**TALLOW.**	
HONEY, ETC.		Crude, lb	6½@ 7
Beeswax, lb	23 @ 25	Refined	9½@ 10
Honey in comb	14 @ 18	**WOOL, ETC.**	
Extracted, light	9 @ 10	FALL—1881.	
do, dark	7½@ 9	San Joaquin	9 @ 14
HOPS.		do, Lamb	13 @ 15
Oregon	20 @ 21	Southern Fall	9 @ 12
California, new	24 @ 26	do lambs	13 @ 14
Wash. Ter	23 @ 24	Northern, free	16 @ 20
Old Hops	– @ –	do, defective	14 @ 16
NUTS—Jobbing.		Mountain, free	16 @ 18
Walnuts, Cal	10 @ 11	do, slightly seedy	13 @ 15
do, Chile	7½@ 8	Humboldt & Mendocino	18 @ 21
Almonds, hd shl'd	8 @ 10		
Soft shell	14 @ 15		
Brazil	10 @ 11		

Gold, Legal Tenders, Exchange, Etc.

[Corrected Weekly by SUTRO & Co.]

SAN FRANCISCO, March 8, 3 P. M.

SILVER, ¼.

GOLD BARS, 890@910. SILVER BARS, 10@18 ⅌ cent. discount.

EXCHANGE on New York, ¼ premium; London, 49½@49¾; Paris, 5.20 francs ⅌ dollar; Mexican dollars, 89½@90½.

NEW YORK (4 per cent), 118.

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., March 8, 1882.

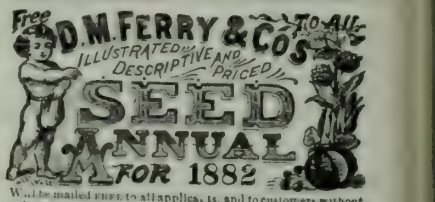
FRUIT MARKET.		Pears, sliced	– 9 @– 9½
Apples, bx	1 00 @ 3 00	do whole	– 7 @– 8
Bananas, bnch	2 50 @ 4 00	Plums	– 5 @– 6
Cocoanuts, 100	6 00 @ 7 00	Pitted	– 13 @– 14
Cranberries, bbl	12 50 @14 00	Prunes	– 9 @– 12½
Limes, Mex	17 00 @20 00	Raisins, Cal, bx	– – @ 2 50
do, Cal, box	2 00 @10 00	do, Halves	– – @ 2 75
Lemons, Cal, bx	1 50 @ 3 50	do, Quarters	– – @ 3 00
Sicily, box	6 50 @ 7 50	Eighths	– – @ 3 25
Australian	– – @– –	Zante Currants	– 8 @– 10
Oranges, Cal, bx	1 50 @ 3 00	**VEGETABLES.**	
do, Tahiti M	– – @– –	Artichokes, doz	– – @– 50
do, Mexican	15 00 @17 00	Asparagus, lb	– – @– 25
do, Loreto	– – @– –	Beets, ctl	– – @– 65
Pears, bx	– – @– –	Cabbage, 100 lbs	75 @ 1 00
Pineapples, doz	7 00 @ 8 00	Carrots, sk	75 @– 90
DRIED FRUIT.		Cauliflower, doz	90 @ 1 00
Apples, sliced, lb	– 6 @– 6½	Garlic, lb	– 1½@– 2
do, evaporated	– 10 @– 11	Lettuce, doz	10 @– –
do, quartered	– 5 @– 5½	Mushrooms, lb	– 15 @– 18
Apricots	– 15 @– 17	Okra, lb	– 5 @– 8
Blackberries	– 14 @– 16	Peas, green, lb	– 10 @– 12½
Citron	– 28 @– 30	Parsnips, lb	– – @– –
Dates	– 9 @– 10	Rhubarb	– 10 @– 15
Figs, pressed	– 4 @– 6	Squash, Marrow	
do, loose	– 3½@– 5	Hat, ton	10 00 @12 00
Nectarines	– 14 @– 15	Tomatoes	– 7 @– 10
Peaches	– 11 @– 11½	Turnips, ctl	– – @– 75
do pared	– 14 @– 18		

Signal Service Meteorological Report.

SAN FRANCISCO.—Week ending March 8, 1882.

	Mar. 1	Mar. 2	Mar. 3	Mar. 4	Mar. 5	Mar. 6	Mar. 7
HIGHEST AND LOWEST BAROMETER.							
	30.183	30.127	30.341	30.382	30.360	30.369	30.323
	30.078	30.070	30.127	30.331	30.288	30.235	30.206
MAXIMUM AND MINIMUM THERMOMETER.							
	60	55	52	54	55	58	59
	51.5	47.5	43	43	45.5	46.5	48
MEAN DAILY HUMIDITY.							
	88	74.7	56	77.7	63.7	35.3	41.3
PREVAILING WIND.							
	W	W	W	W	NW	N	W
WIND—MILES TRAVELED.							
	184	213	285	182	237	320	283
STATE OF WEATHER.							
	Cloudy	Fair.	Clear.	Fair.	Clear.	Clear.	Clear
RAINFALL IN TWENTY-FOUR HOURS.							
	.04	.02					

Total rain during the season, from July 1, 1881, 11.28 inches.



Will be mailed FREE to all applicants, and to customers without ordering it. It contains five colored plates, 600 engravings, about 200 pages, and full descriptions, prices and directions for planting 1500 varieties of Vegetable and Flower Seeds, Plants, Fruit Trees etc. Invaluable to all. *Michigan* grown seeds will be found more reliable for planting in the *Territories* than those grown farther South. We make a specialty of supplying Market Gardners. Address,
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Makes to order Gents' Fine French Calf Boots from $6 to $10; Gaiters from $3 to $6; Alexis from $3.50 to $5; Mens' Heavy Kip Boots, $6; Oxford Ties, French Calf, $4; California Leather, $3.50; Men's Working Shoes from $2.50 to $3; Children's Shoes made to order. Persons in the country ordering to the amount of $12, I pay the express charges. I sell nothing but my own manufacture.

100 All New Style Best Quality Lithographed CARDS Your Name in Fancy Lettering Printed On All FREE! We send this the most Elegant pack ever published-free to every one sending 10 cts. for our new price list, & Illustrated Premium List. Agents Large Sample Book & 100 samples 25 cents. Address, STEVENS BROTHERS, Northford, Conn.

YOUR NAME on 50 fine Chromos, or 40 Comic transparent cards, 10c. Wise & Co., Clintonville, Ct.

25 GILT-EDGE CARDS, name elegantly printed, 10c. AM. CARD CO., No. 83 Nassau St., New York City.

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CONCENTRATED

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Manufactured by

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AMERICAN LYE

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Purest, Strongest and Best.

IT WILL GO FARTHER THAN ANY OTHER.

AN INSECTICIDE

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FERTILIZER.

CONCENTRATED LYE has proved itself where used of sufficient strength to be thoroughly reliable and effectual, and has the great property of fertilizing the tree and soil, as potash is one of the natural constituents of both, and is required for the health of the tree. Its use is therefore recommended. Sixty pounds of the Concentrated Lye of the American Lye Co. is equivalent to 100 pounds of commercial potash.—*Report to San Jose Horticultural Society, 1881.*

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Later!

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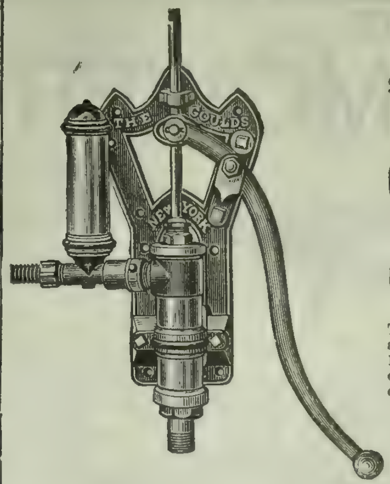

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This Pump has been gotten up expressly for the purpose noted. The working parts are constructed entirely of Brass and are not affected by the corosive solutions used in them. The sale of over 100 of these Pumps last year—principally in the Santa Clara valey is strong testimony as to their merit. Further information can be obtained by addressing the Agents,

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The New Work on this important and interesting subject, by T. A. Garey, will be issued in good style and print on or about the 20th of March, 1882. It also embraces a valuable appendix on Grape Culture by L. J. Rose. In all some 220 12 mo. pages. Mailed (postpaid) in stiff cloth binding, for $1.25; in flexible cloth, $1.

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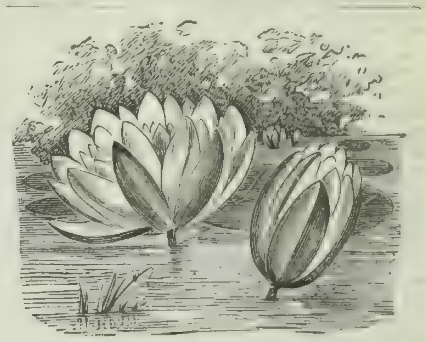

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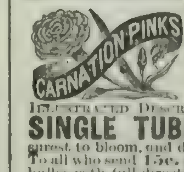

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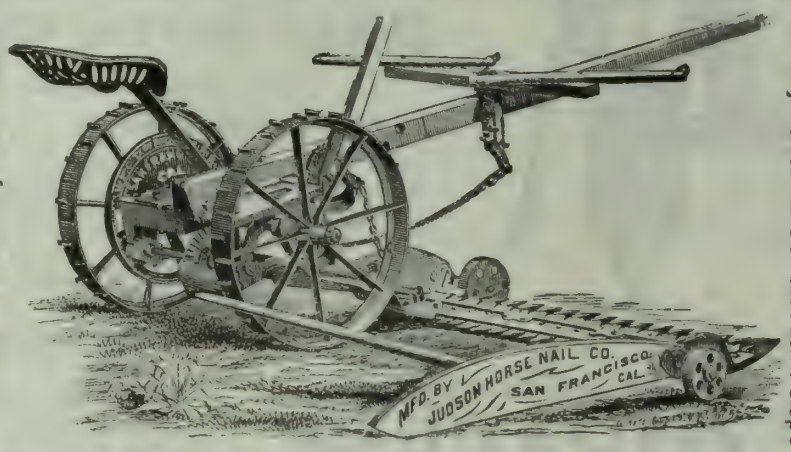

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CALIFORNIA GROWN TREES,

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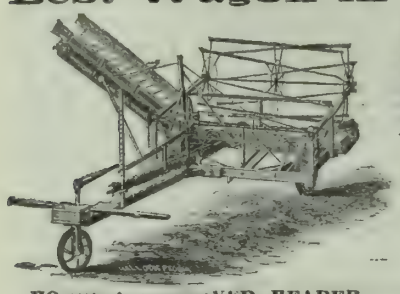

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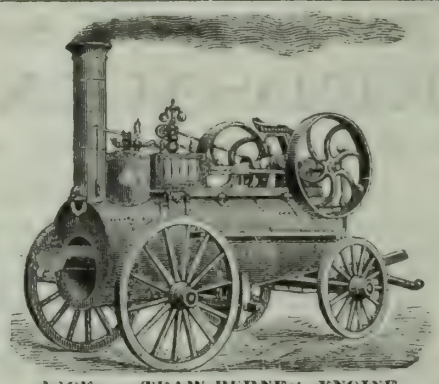

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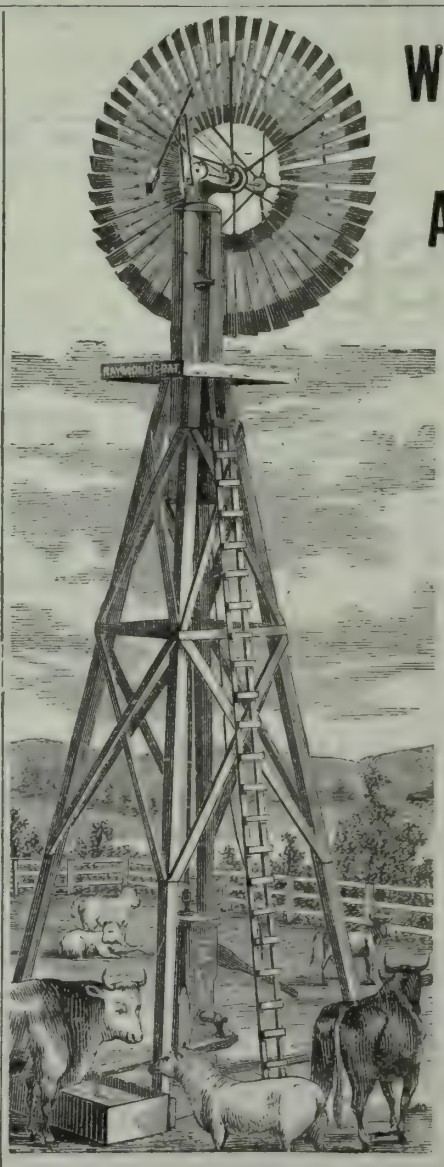

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PACIFIC RURAL PRESS

SOUTHERN CALIFORNIA HORTICULTURAL EXTRA—24 PAGES.

Volume XXIII.] SAN FRANCISCO, SATURDAY, MARCH 18, 1882. Number 11

New Berries.

As this issue of the RURAL is largely devoted to horticulture, we choose for illustration three of the most prominent of the new berries brought out by Eastern propagators, and which will ere long find, if they have not already found their way to California fields. In making this showing, we draw freely from the beautifully illustrated catalogue of J. T. Lovett, of Little Silver, New Jersey, who is well known both East and West as a grower of small fruits and the plants thereof. The most notable of the group is the Manchester strawberry, which comes to the front adorned with all the praise which Eastern fruit experts can speak of a berry. This berry originated by chance. It seems that the first plant was found growing in a neglected spot in an old garden at Manchester, N. J., about ten years ago. There were growing on the place at the time, Russell's Prolific, Wilson, Jucunda, Agriculturist and a half-dozen or more of other kinds, but as it was found growing a distance from any other strawberry plants, its parentage can only be surmised. From close observations of the blossoms, plant in different stages of its growth and fruit, it is thought to be a cross between the Russell and Jucunda; but this is purely conjecture, there being no data on which to base such a conclusion. Even while overgrown with weeds, it was so large and fine that the discoverer transferred the offspring to the field; when the results were so extraordinary, that even without cultivation or fertilizers, he planted as quickly as he could obtain the plants a large patch of it, and has been extending his plantations ever since.

The excellence of the berry attracted the attention of Mr. Lovett, and he arranged for a sort of a field congress of the leading small-fruit lights of the vicinity of New York, to pass upon the merits of the berry, give it a name, etc. This meeting was held last July, and the result was a great triumph for the fruit and the gift of a name—the Manchester, from the place of its origin. The reports of the meeting as given by the New York agricultural newspapers are before us. The *American Agriculturist* says: After inspecting the plants in the field, and the fruit at the table, they gave as the "sense of the meeting," comparing it with the Wilson, side by side on the same ground: "1. In size it averages one and a half larger. 2. Of much better flavor. 3. It is far more attractive in appearance. 4. The plant is double the size and much more vigorous. 5. It carries the fruit higher from the ground. 6. The yield is one-half greater. 7. In firmness it fully equals the Wilson." We should have differed as to Nos. 2 and 3. It is not only of "much better flavor," but it has a very good flavor, which the Wilson has not; it is not only "far more attractive in appearance," but is really attractive in appearance—being bright at the end of four days, while the Wilson begins to be dull as soon as it is picked.

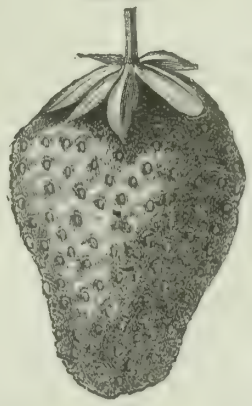
The Manchester receives its exact description from the pen of Peter B. Mead, an eminent pomologist, as follows:

Form, oblate-conical. Size, large. Color, scarlet. Flesh, pink, firm but melting with a rich sub-acid juice, and a decided aromatic flavor. Leaf-stalk, reddish, as are also the runners. Flower-stalk, stout. Flower, pistillate or imperfect. Plant, robust and very productive. Quality, very good, to best. The plant is seemingly well adapted to very light soils, and will doubtless find itself at home throughout a wide range of country, and prove itself to be especially valuable for market, whether near or distant.

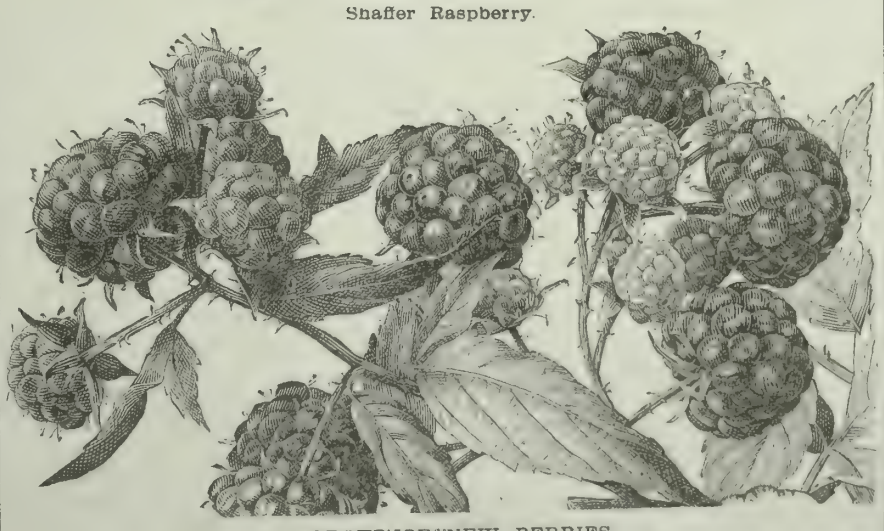
Other marks and characteristics of the Manchester are given by Mr. Lovett as follows, some of which we annex: It is very firm, keeping its color and flavor and *remaining* firm longer than any other variety. It is large and exceptionally uniform. In form it is as near perfect as can be desired, and remarkably regular; resembling Cumberland Triumph. It is exquisitely beautiful, being of the most brilliant scarlet, with smooth surface, and prominent bright golden seeds. It is of superb quality—being much sweeter and richer than any other *productive* variety. In this it resembles in a marked degree the highly flavored pioneer, Hovey's Seedling. It is wonderfully prolific—producing fully doubly as much as the Wilson. It is a very vigorous grower, with large, luxuriant, glossy foliage, and putting out large pink runners. It makes plants but moderately, showing a disposition to stool, resembling in habit of growth

Manchester.

Bidwell.



Shaffer Raspberry.



A GROUP OF NEW BERRIES.

Sharpless somewhat, although entirely distinct in other respects. It continues in fruit for a long season. It endures drouth better than any other variety. During the fruiting season of 1880, such a drouth prevailed in Manchester, as to literally burn up both plants and fruit of the Wilson, and other varieties in the same rows with Manchester, while it perfected its large crop of large berries without faltering.

Another new berry which has achieved a fine fame is the Bidwell. This variety originated in Michigan. The plant is perfection itself in vigor, forms large stools, and is very prolific. Berries average large; conical, with slight neck, but quite irregular; bright crimson, somewhat glossy, above medium in quality, and for a large berry unusually firm. An admirable variety for the amateur, and may prove profitable for market, but one that needs good culture.

The lower figure in our group is a new raspberry called Shaffer's Colossal. It is described as "the largest raspberry in the world"—a regular leviathan among raspberries, as is the Sharpless among strawberries, and as "hardy as Turner." It is of the class represented by New Rochelle—called hybrids by some, but described as a distinct species by Fuller, who denominates it *R. Purpurea*. It originated in Monroe county, N. Y., over 12 years ago, during which time it has been subjected to the severest tests, and is said to be a wonder of vigor and productiveness, and averages larger than any other raspberry in existence—high praise, certainly, but from a source that can be relied upon with full confidence. Downing describes it as "quite firm, flesh sprightly sub-acid," adding, "it is certainly a promising variety." In color it is of a purplish hue; and in time of ripening, late, ripening with the Gregg. As a raspberry for canning it is claimed to be unapproachable, and of special value for drying.

NUMBERS of sheep in New Mexico are dying from an epidemic, and a poisonous weed, known to the natives as *la llerva*, is destroying many horses and mules, the only stock that will eat it. This weed appears in New Mexico every few years, is of a rank growth, and should be guarded against by travelers who are not familiar with its fatal effects.

The Citrus Fairs.

Two fairs will serve as the exponent of the progress of California in citrus fruit culture during the year. One at San Jose is in progress as we write. It will be of value to the county, as are all such competitions for excellence and opportunities for increasing neighborly feeling and acquaintance. Next week the new pavilion at Riverside will open its doors to receive what will probably be the finest display of semi-tropical fruits ever made in this State. The Riverside *Press* announces that the several districts famous for their citrus fruits will send forward their best material, and it is probable that the fair will be what its name indicates—an institution of southern California, as well as the pride of the thriving colony of Riverside.

We have endeavored to make this issue of the PRESS of especial pertinence to the fair season in the southern half of the State. On another page may be found the premium list at Riverside, and the programme for the exhibition so far as it has been laid down by the managing committee. We give also much space to what is probably the most comprehensive compilation of facts concerning the growth of fruit in Southern California ever made in a single issue of a newspaper. The success of the different varieties of fruit in the different parts of the State is a matter of the greatest importance to growers, and we have confidence in the data presented because it is contributed by the growers themselves. An extra edition of this week's PRESS will be printed for circulation at the Riverside fair, and we invite all those into whose hands the paper may come for the first time, to give us the substantial encouragement of their support, and aid us with their experience and observation in all departments of agricultural effort. There are hundreds of intelligent and enterprising people now home-seeking in Southern California, and we are quite sure that what they may see of the fruits of labor and investment at the Riverside fair will go far to win them to throw in their lot with the energetic and honorable men and women who have brought the glories of successful industry to adorn the lovely land. It is our ambition to promote the success of all who set out to carry on this industrial development of our State, and as we gain for them the ripened experience of the elders in the newer life of California, we are able to point the way to their own success by showing forth the practices and materials which have been found most trustworthy.

Let there be a grand rally at the Riverside fair. The colony has a multitude of kindly, hospitable people, and people who have demonstrated their horticultural talents by the most unmistakable evidence. There will also go up a multitude from the other beautiful settlements of Southern California. It will be an occasion of kindly greetings and cordial congratulations. Let all who can attend.

A LAKE COUNTY LEMON.—S. W. Shaw brings us a very fine lemon as a specimen of those now growing at Buckingham Park, Clear Lake, in Lake county. The lemon is apparently a Sicily seedling, of good size, thin sweet rind, and thin dividing tissues. The tree on which it ripened bore about 200 lemons this year. It was planted out from the nursery five years ago. Buckingham Park is close to the lake shore, probably about 130 ft. above the water. The climate is mild and delightful, as the growth of such a lemon there indicates. Oranges of fine quality are also grown.

PROTECTION to life and property; freedom of opinion, of speech and of ballot; low taxes and the rapid construction of railroads and factories throughout the State, are presented by the Vicksburg *Herald* as inducements to the 700,000 immigrants who will land in the New World in 1882 to settle in Mississippi.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Up Coast Notes.

EDITORS PRESS:—The passenger on the Humboldt steamer is very unfavorably impressed by the view of the 200 miles of coast passed from San Francisco. He looks very incredulous and disappointed when first informed that the lands to the right are the famed dairy lands of Marin county. He is not prepared to see such rough and bleak hills, and some of them seem almost worthless. The Point Reyes ranch itself, he would scarcely accept as a gift, from all he can see of it from shipboard. He imagines he is passing lands destitute of settlers; he sees few residences, no villages, or towns. A similar experience of disappointment follows him till he enters Humboldt bay, 200 miles above San Francisco. But had he passed up coast on land, he would have had a different impression. For the thickly settled neighborhoods, with good free schools, the thousands of fine dairy cows climbing around the hillsides, the frequent neat little village, and the occasional fine mansion, with abundance of fruits and flowers, impresses him that though rough, it is well adapted for homes. If not the best land for tillage, it is excellent for pasturage and dairy purposes, and this pursuit paying better than any other, its adaptability to various fruits has been but slightly tested. The leveler portion of Marin county has a good reputation for potato crops, but the continued high price of butter has greatly lessened the potato plantings. Even Bodega is preferring dairying now to the uncertainties of a potato market. On inquiry why no more potatoes were planted now at Bodega, it was given as a reason that custom had made the digging and sacking of potatoes "Chinese work," and now popular prejudice ran so strong against that class of laborers that they preferred not to be annoyed by the crop till white help could be employed at reasonable rates to handle it. One lady remarked that she thought a large amount of the prejudice thereabouts was worked up in the interest of the saloons because John did not spend his earnings with them nor have any vote for them to control.

The coast winds are so strong and persistent that except in sheltered situations fruits and some of the cereals are not a success, and the sites for dwellings are not usually located so as to be seen from the coast steamer. Even the immense redwood forests that extend from near the beach back from five to twenty miles, are scarcely noticeable anywhere from steamer. This

Lumber Interest

Is one of great value, and after passing the mouth of Russian river, in Sonoma county, might be considered really the chief business of the coast. From here is received the principal supply of oak bark for all our tanneries. This article is now growing scarce on the front, and must be cut some miles back, but yet it is a paying business. They are not so wasteful as formerly, peel more closely, and chop a larger portion of the oak wood into cord wood, where they formerly let it decay on the ground. All along the timber coast, the getting out of railroad ties seemed to be considered good business. It appears that not only our own transcontinental roads require them, but Mexico and South America also furnish markets for these massive split sills. The Redwood split pickets, skakes, singles, and bolts for the shingle mill give remunerative employment to a large number of men in the timber. The numerous sawmills, at intervals, all along the coast, furnish employment for many millmen, loggers and road makers. The road makers are very essential, as the fallen timber and undergrowth are a perfect bar even to a horseman.

There are scattered along up the coast and back in small valleys many good

Productive Farms,

Devoted to stock and mixed farming, aiming to produce what is salable in their home market. Inland one and two miles, the hardy fruits do very well, either in valley or high mountain plane. Every nighborhood belongs to some school district, and scarcely a family is to be found that is entirely beyond reach of a regularly organized public school. Church organizations are to be found at all the principal centers of population—as at Fort Ross, Stuart's Point, Point Arenas, Mendocino City, and the many small villages along the coast. This long line of isolated coast settlement contains the leaven of full Americanism, and is making an advancement in shaping and improving society. The pioneer, who has courage and strength, will find right on this neglected coast resources for a livelihood immediately and the prospect of a valuable home in the near future. They dream often that the narrow-gauge railroad from San Rafael is about to be extended past their doors; and, if not it, some other one will give them this improvement on their daily stage line that now runs to the railroad at Duncan's Mills, on Russian river.

The coast streams furnish abundance of the choicest salmon and other fish. The wild blackberry is very abundant, and of rich high flavor, easily preserved in their own juice, without any sugar. The campers from the interior counties are yearly increasing, who resort to the coast for fishing, hunting, bathing and blackberrying. They claim many advantages for this resort, in its cheapness and great facilities for free luxuries and healthful enjoyments—wood, water, shade, pasture, sea-shore and hills—all conveniently near the main stage road.

There being no good harbor for large vessels, the settler's main dependence now is the sailing crafts that anchor at the chutes and take in cargo or land their freight. They take all kinds of produce, but their main loading is lumber in its various forms as it comes from the mills or the woodsmen. There are some few points, as at Point Arenas, where occasionally the Oregon steamer lands.

Westport, in Mendocino, about 30 miles south of the Humboldt line, is a thriving village. This is the terminus of the Coast Mail stage, and five miles farther up is the end of the wagon road, thus leaving 25 miles trail to reach Humboldt county's fine-graded road, built to complete the coast road and join Eureka with San Rafael by a good road, as now the traveler must make a detour of 100 miles over very high mountains to reach that shelter cove that 30 miles of coast road would reach.

Humboldters grumble and blame Ukiah politicians for a selfish policy in forcing a large travel over the Ukiah road, that would prefer the direct coast route. Ukiah tries to speak them a pleasant piece, and says she has many graded roads petitioned for, and pleads poverty or inability to make all desirable roads in one year.

In passing over the mountain from Westport, I was told it was 15 miles up grade, but did not fully believe it till I had passed over it and noted the time required. All over these hills passed is much fine timber and some claimants. After descending into the valley of the south fork of Eel river, I took shelter from the storm at a comfortable farmhouse. Good, warm fire on open fire-place, surrounded by family of six children, a hearty welcome, betokening a warm and generous humanity that presided over that pleasant household. I cannot enlarge as I would like, to make this illustrate what is meant by the required *courage* and *strength* to make a successful pioneer. They had plenty, for they all worked and raised most of the essentials of healthy, cheap living. The neat, large house, all home-made, timbers, joice siding and roofing all split from one tree, and as neat and true as sawed lumber. The barn, also, was taken from the same tree, and built by the same architect; and the same tree can supply yet more choice lumber, riving beautiful boards 30 ft. long. B. W. C.

Debris and the Lower Sacramento Valley.

EDITORS PRESS:—There appeared in the PRESS some weeks back an article purporting to be a view of the Sacramento valley as it would be in 1890 should hydraulic mining continue. The graphic description of the prospective desolation may have seemed to some but an extravagant fancy, not possible to be realized under any circumstances in the reality. Yet evidence brought out in abundance in the late Gold Run suit showed how effectually the process of burial has been instituted, and how true in reality was the attempted depiction of the probable result.

Debris Analyzed.

The material of which the debris entering the valley is composed is of a two-fold nature. The first element consists of gravel and sand, forming about two-thirds, and the second of clay, forming about one-third of the debris. The clay is carried in suspension by the water, and is not deposited unless the water reaches some place of comparative quiet. So long as the water is stirring this clay will continue with it. For this reason clay is the main element which reaches the bay. The sand is not dissolved and carried in suspension, but is lifted up and carried bodily by the water, as pebbles and bowlders are carried by torrents. In these rivers, after they reach the valley, the sand is partly carried and partly swept along the level bed in waves. Whenever the velocity ceases to be great enough to transport it, it is dropped. This deposition of sand commences in the mouths of the canyons just where the rivers issue from the hills. As fast as the channels have been filled up, it could be swept farther down, since the beds were unobstructed levels of sand. At the same time the upper courses of the rivers were raised. At Smartsville, 17 miles above Marysville, the bed of the Yuba river is raised 80 ft. At Marysville it is raised only about 20 ft. As a consequence, the velocities of the winter floods have been terrific, far into the valley.

The filling at the mouth of the Yuba, when compared to the filling below in the Sacramento, is heavy; and it is plain that it has caused a material increase in the velocity when it is considered that the fall in the valley, at least below Sacramento, is at the rate of four inches to the mile. The result has been that the sand has come to be shot right into the heart of the valley, as by sluices. It is this sand which is extensively destroying land in the valley. At points upon the Sacramento and Feather, in places where the water once entering is confined in comparative quiet, clay, or what may properly be called slickens, is being deposited. In its crude state, this is not fit for soil, because it contains no *humus*, while the constant floods prevent working. The result is loss to the owner equivalent to a total loss. But this covering by clay is not the burial of land which has been worked upon the Yuba, Bear, American, and parts of the Feather, and which is now fairly commencing to be worked upon the Sacramento.

That Burial is by the Sand;

The clay but precedes the sand a few seasons. This distinction must be regarded, for the neglect or the failure to observe it has been the source of the false ideas in regard to the facility with which debris-covered lands could be restored to fertility, and has given the appearance of truth to the erroneous statements that the debris made good soil. Where only clay has been deposited, the process of reproducing a soil, productive in some degree at least, is one only of skillful treatment, of manuring and working.

The whole of the Yuba bottom stretching away from the foot hills of the Sierra Nevada to the Feather is covered with coarse sand, which, where too deep for willows to live from sustenance gained from the original soil a half dozen or fifteen feet below, is a level of bare sand drifting with the wind. This is the state of the Bear river valley, with the exception of a short strip on the north side next the hills, and, in the main, with the American. That the velocity of the rivers has carried this sand down the channels and filled the Sacramento channels to a depth of at least fifteen feet, is a notorious fact, but it has not been known that opposite Sacramento city, around Washington, and for twenty miles below, farms have been destroyed. This is getting rather far from the mines, and comparatively near to the bay.

In the Gold Run suit, I. N. Hoag testified: "From American river down as far as the sand goes, there are in 20 miles from 15 to 20 farms materially injured, and some of them ruined. Some are cultivated now in part, some abandoned." John Hoagland testified that on his place sand was left that would blow about with the wind. W. Hodgdon, living in Washington, testified that last year upon twenty acres of his land a deposit was left of three feet in depth of slickens, sand and debris, and in places so deep as to cover his fences. A. Henly testified that he owned 25 acres in Washington, and that it had been covered up with coarse gray sand, entirely unfitting it for agricultural purposes; and William Gwinn, that "on the road to Davisville and Woodland, he saw sand three feet deep each side of the road seven miles from Washington, and that in the willows back of Washington there was a deposit of sand from two to six feet in depth." There are heavy deposits opposite the English break, covering even the fences themselves. All this, it must be remembered, is upon the lower Sacramento. The water, also, is rising in the ground along the river in consequence of the filling so as to make the soil permanently dank, and the orchards are dying. This illustrates the

Process of Burial upon the Sacramento,

In its incipiency. Yet the scale on which it has been instituted, and the early day at which it has commenced, may well cause alarm. The bottom of the American is just above and adjacent, yet that is already destroyed. C. W. Clark testified that he owned 10,000 acres fronting upon the American, which he formerly used for pasturage, but which is now more or less covered with sand and will raise nothing. Jos. Routier, of Brighton township, testified that the original banks of the American rose 40 ft. above the original low-water mark, but now the bottom has been raised more than 26 ft. The channel is filled up entirely to about two miles above his place. One thousand acres on his side are covered with white sand from 6 to 10 ft. in depth. The bottom is five miles wide. Trees along the river bank have been imbedded from 10 to 20 ft. I. N. Hoag testified that, from the overflows of '50, barely a perceptible effect upon the land was discoverable. Now, overflows cover the land with sediment. The American is in truth virtually destroyed, and the evidence shows that the front of the sand has reached the Sacramento bottom.

The effect is inevitable. The Sacramento bottom will in 10 years, if hydraulic mining continues as at present, become a stretch of sandy waste extending through the valley, as the Bear and Yuba are now extending to the Feather; and a waste that will be widening out into the valley. Washington is as desolate a looking place as any ever seen, yet the same fate awaits Sacramento. The river has filled between the two at least 15 ft., and one-third at least of its volume is now shifted to the country about and beyond Washington. It will not take more than 3 or 4 years to fill the channel up 15 ft. more, and thus to shed the water upon either side making the site of Sacramento city untenantable and its drainage impossible. These considerations merely show the ruinous nature, in the reality, of those operations which it is sought to prove in the present suits illegal, and which in case those suits are decided adversely to the plaintiffs, it will be necessary through the political action of the Legislature to make illegitimate, if the heart of the State is to be preserved from devastation. J. H. D.

A TUNNEL UNDER THE MEDITERRANEAN. The latest engineering project is a proposition from the Venetian society of public works, which has asked the government for authorization to make surveys for a project of railway communication between Sicily and the main land by means of a submarine tunnel under the straits of Messina.

HORTICULTURE.

The Other Side.

EDITORS PRESS:—Had Mr. Brier, of Centerville, examined the records of his county seat, and many other counties, before he declared to the public that two cents per pound was good enough for peaches and apricots he would have found there was something wrong in the production of fruit. We read not long ago of one man who declared that two cents per pound for peaches and apricots delivered in San Francisco was good enough, and the same man had to pay 3% per month for money to keep up the fruit business. That did not look as though two cents paid very big, even at Centerville. However, we like the tone of Mr. Brier's answer in the issue of February 11th. After hashing up the other side, in the last paragraph, like a little man, he frankly acknowledged that the choicest of peaches are grown on hill land, and that without irrigation. He says, look at our figures, and see the fruit business at Winters will not pay at two cents delivered in San Francisco. No, nor will it pay in any other place for men to run in debt for land and trees at high prices, with no better prospect than two cents when delivered in the market.

We can show by figures, and they wont lie, that it will not pay to grow and ship fruit a distance of 75 or 100 miles for two cents per pound. Let us see the actual cost of putting one 25-lb. box of fruit in the market, and that will hold good for any quantity. A free package in the shook at Winters or Vacaville costs 6¼ cents; to unload the car and haul the material or boxes to the ranch will cost one cent per box, allowing the average distance from the depot to the ranch to be eight miles, and many are much farther away. Nails and making are worth 1½ cents per box. Freight on fruit to San Francisco averages $5.00 per ton, which is equivalent to 8½ cents per box, when a whole ton is shipped, if less than one ton, the average is higher. Drayage from wharf to store, three cents per box. One 25 lb. box at two cents per pound yields 50 cents; commission on 50 cents is four cents; picking, furnishing paper and packing each box is worth 12½ cents. We have frequently offered 10 cents to Chinamen, and they can work as cheap as any one, but they will not do it for that. Hauling from ranch to the depot, 4½ cents per box; allowing the average distance to be eight miles. The total cost of putting one 25 lb. box in the market is therefore 41 cents. This leaves nine cents net proceeds on each box for pruning, plowing and cultivating, paying taxes, keeping up the ranch, supporting a man's family, if he has any—if not, he ought to have one. Any man can see that by the actual cost, it will not pay to ship and sell fruit at two cents per pound in San Francisco, no difference how heavy the tree yields.

Now we can show that Winters and its vicinity is the best fruit location on this coast. There is a wide difference between Mr. Brier's location and Winters. It seems near Centerville the land is thin and drouthy, climate not well adapted to the production of apricots and peaches, hence he has to irrigate; but, thanks to our lucky stars, we are in the Garden of Eden of this State for fruit culture. We have more advantages than any other location in this little glade. First, we do not have to irrigate; second, we always have plenty of rain; third, we have the earliest location on the coast; fourth, we have all the natural heat required for drying fruit, no fogs or dews during the summer months and no heavy winds to cover our dried fruit with dust. We put the first green and dried fruit in the market, hence if there is any cream on the fruit market we get it. We have known 25 lb. boxes of apricots to sell for $8 and $10 per box, while the apricots from this section generally start at 40 and 50 cents per lb.

One of the worst failings the horticulturist has is guess-work. I cannot see why any man should desire to sell peaches and apricots when everybody knows, and the figures plainly show, it will not pay to raise and ship fruit and sell for two cents per lb. delivered in San Francisco. I know it is fine to raise fruit, and that California can lead the world in fine fruit, but this thing of apricot and peach trees averaging 600 lbs. from the time they are planted till 10 years old, beats old Pike.

Even now, with the many advantages we have at Winters, we say to one and all, if you are going to embark in the fruit culture, go slow; if you can pay for your land and wait till the trees yield a paying crop, then, as the Dutchman says, "Dot ish a different ting."

Winters, Feb. 20, 1882. H. P.

[This communication was promptly received, but has been delayed by an oversight, which we regret.—EDS. PRESS.]

A USEFUL WOOD.—One of the hardest woods in existence is that of the desert ironwood tree, which grows in the dry washes along the line of the Southern Pacific Railroad. Its specific gravity is nearly the same as that of lignum vitæ, and it has a black heart so hard, when well seasoned, that it will turn the edge of an axe and can scarcely be cut by a well-tempered saw. In burning it gives out an intense heat, and charcoal made from it is of unequaled quality.

SERICULTURE.

The Silkworm—Its Education and Reproduction.

Addressed Especially to Beginners in the Silk Business.

[Written for the RURAL PRESS by FELIX GILLET, of Nevada City, Cal.]

Part Second.

Keeping the Grain, and Hatching the Same.

Presuming that persons intending to raise silkworms have procured in advance, and through the winter, the requisite quantity of grain, I will first say a few words in regard to preserving the same. The best place in which to keep silkworm grain during the winter is in a room overlooking to the north, and where the temperature never arises above 50 degrees. By the 1st of March, or sooner, according to localities, or as soon as the temperature of the room where the grain has been kept arises above 50 degrees, the grain has to be removed to a cooler place, say to a dry cellar, and out of the reach of rats, mice, spiders and ants. Should the cellar be somewhat damp, the grain then would have to be taken out once a week and exposed for two hours, and in the shade, to the cool air of the morning, freezing or very cool weather being preferable. Silkworm grain is not affected at all by moderate cold weather, like 15 to 20 degrees; on the contrary, it improves the grain considerably to expose it during the winter to the cold influence of the atmosphere.

Before going any further, I would like to impress upon the minds of our young or would-be sericulturists the importance of having the education finished before the usual hot spell in June. For, in California, even with her "splendid climate" and "wholesome food," a temperature at and above 88 degrees is as mortal or prejudicial to the worms as it is in any other country where silkworms are raised; for such maladies as jaundice and grasserie will surely break out among the worms wherever the temperature of the cocoonery is increased to that degree. It is, therefore, of the first importance to commence hatching as soon as the swollen buds of the mulberry are bursting open, throwing out their first leaves. The success of the whole education does, in fact, greatly depend upon a good and early start; this must be well borne in mind.

When hatching time is near at hand, and after having consulted the condition of the buds on the mulberry trees in preference to the exact date given in treatises, the grain is taken out from the cellar and placed temporarily and for only a few days in any of the rooms of the house exposed to the south, to be finally removed to the kitchen. The kitchen, with the small silk grower, may be in fact regarded as the hatching place *par excellence*. The grain is placed on a shelf or in a closet, out of the reach of mice, and at the farther end from the stove, to be taken by degrees and every day closer to the stove, though being kept at a proper distance from it. When having much grain on hand it is well to keep some in reserve in the cellar, in case of some accident happening to the grain put to hatch in the kitchen, or of a sudden frost killing the newly opened buds on the trees. The kitchen, besides being the best place where to hatch the grain, is also admirably adapted for raising the worms during the first, if not second, age, they taking but little room during those two ages. The worms that do appear on the first day are generally thrown away, on account of being so few; they may be called the forerunners of the hatching, and I would suggest to keep them, for by having such an advance on the worms hatched on the three succeeding days, they enable us to better tell when moulting time is coming with the other worms. Then they make the best grain, as being always the most healthy and vigorous worms of the whole lot. On the second, third and fourth day will the bulk of the worms be hatched, the balance of the grain may be then thrown away. All the worms hatched on the same day have to be kept apart and placed simply on papers, say half of a single sheet of our San Francisco dailies, with the date put down on the margin of the paper. It is very important to keep separate, during the whole education, worms of the same hatching, because of their changes or moultings, which are not accomplished at the same time.

The moment the young worms make their appearance, they at once look for food; so, very tender leaves have to be placed about the frame holding the eggs, and the little worms will soon crawl on them. When the leaves are thus well covered with worms, they are transferred with their precious loads to a paper duly marked 1st, 2d, 3d or 4th day, and there they are fed at the rate of four meals a day, say one meal every four hours commencing at about 7 o'clock in the morning.

Feeding the Worms

After the worms are all hatched, the education may be regarded as fairly started. During that first age, which generally lasts five days, the worms have to be fed with tender leaves yet, such as the second and third ones of young sprouts; but any variety of mulberry will do, as long as the leaves are tender, and it is mere nonsense to recommend at that early period of the insect's life, this or that variety.

Always cut up the leaves for feeding young worms, and use a sharp, clean knife, being careful not to chop off with the leaves the tip of your fingers. During the first age the leaves have to be cut quite fine, less than $\frac{1}{8}$ of an inch; during the second age from $\frac{1}{8}$ to $\frac{1}{6}$ of an inch, during the third age $\frac{1}{4}$ of an inch; from the fourth age down to spinning time, they are served entire, unless too large; in that case the leaves are cut up from $\frac{1}{2}$ of an inch to one inch. The object of cutting up the leaves, is to enable the educator to scatter them evenly so that each worm will be sure to have its proportion of food; then by feeding the worms equally, they grow equally, too, and accomplish their various moultings at the very same time, which is a most important point, saving thereby a great deal of labor and trouble; and it cannot be impressed too much upon the minds of our beginners. On the fifth day of that first age, the little worms have to be closely watched; an experienced eye will see at a glance whether they are ready or not to "sleep," preparatory to casting off their skins. When the worms are ready for that moulting sleep, they cease eating, keep still, and over their little black head appears a spot like a half moon, the new head; this is the most remarkable feature to announce that the worms are going through that moulting sleep. While undergoing that change, they must not be fed at all; it does not matter whether some of the worms are not ready for it yet. The newly moulted worms must not be given a first meal before all the worms are done with shedding their skins. The worms must not be thinned or spread out, or the litter thrown out—shifted, in a word—when they are getting ready for their moulting sleep; and it must not be done, either, right after they are done moulting, but next day. All those little points have their importance, as a season's experience will show to any of our young sericulturists. All that is said for this first age of the insect's life in regard to moulting, applies with equal force to the other four ages.

The leaves should be gathered for the day's use early in the morning by having them placed in the cellar in a can, box or tub, with a wet cloth wound round, they will keep as fresh as when picked.

No wet or damp leaves must be given to the worms; if rainy, the leaves may be gathered right in the morning and put to dry on the floor of the cocoonery; if too wet yet when meal time comes on, they must be dried gently with a cloth, before giving them to the worms. Otherwise it would certainly be better to give the worms on such a rainy day two meals with dried leaves than four meals with wet leaves. It must also be borne in mind that cleanliness, regularity in the meals, evenness in feeding are most essential points to bring the education to a successful close. It will take about 40 days for worms fed four times a day at four hours' intervals, and at an average temperature, to be ready to spin their cocoons; it will take less time if the meals are more frequent, and if the worms are fed night and day. A silkworm having to absorb from hatching to spinning time a given quantity of leaves, whether he absorbs it in 32, 40 or 50 days, it is immaterial, but he must have consumed that quantity of leaves to spin a cocoon. Four meals a day, however, commencing at 7 o'clock in the morning, come right so as not to hinder the farmer's wife, who is supposed to superintend the education, with her daily occupations, like dinner and supper, on the farm. By commencing at 7 o'clock, the worms have thus to be fed next at 11 o'clock, then at 3 o'clock, and 7 o'clock in the evening. At that time of the year work crowds up a good deal on a farm, hence the education of silkworms must be made as light as possible.

Spinning Cocoons.

When arrived at maturity, the worm ceases to eat, gets smaller, becomes transparent, and of a pale yellow, and finally gives out its silk, which it spreads out here and there, raising up its head at the same time, as if to reach something. All this means that spinning time has come; and as soon as some of the worms give such signs and wander about in search of some nook or corner wherein to spin their cocoons, then has the time come, too, to provide them with a place where to build their precious little nests. In regular cocooneries, they use shelves made of strips of wood one-fourth of an inch by five-eighths of an inch, nailed one and one-eighth inches apart, sideways, on cross pieces five-eighths of an inch square; and on the other side, the same number of strips are nailed, in the same manner, on the cross pieces, but so as to correspond with the center of the space between two strips of the first side, thus forming a triangle inside the strips of the shelf with two sides one inch and one-half long, and the third side one inch and one-eighth; that is what is called "cocooning shelves." They are the most handy and neat things of that kind ever invented. The silkworm finding in that triangle composed of three strips, three standings, just what it wants to spin its cocoon, goes to work at once, without wasting any more silk. Ladders, called "cocooning ladders," are made on the same principle; they are put in place every 14 inches, as soon as the worms are getting ready to spin, and fastened with a little screw or a peg to the strip set at the edge of the shelves, to prevent the worms from falling off the shelves. The worms climb up the ladder to the upper shelf, into the racks of which they spin their cocoons. Some of the worms, weak or lazy, spin right into the racks of the ladder. But with our beginners and small silk growers, who use simply boards for shelves, something else has to be resorted to. Sheaves of straw, wild mustard cut before the seed is ripe, boughs of willow, twigs of white oak with the leaves on and dried in the shade, bunches of wheat or rye straw, etc., can very well be used, but they have to be kept in readiness a couple of weeks before spinning time.

It will take four days for a silkworm to finish its cocoon, and another three days to pass into the chrysalis state. So they must not be gathered before eight days, and not before twelve to fourteen days, if the cocoons are destined for graining. If to be sold for the silk, cocoons may be gathered on the ninth day after the last worm has gone up to spin; and by exposing them for three or four days to the sun, the chrysalis will be killed and pretty well dried up, and unable to stain or injure the silk with the putrid matter of their decayed bodies. Cocoons, when having to be kept a certain length of time before being sold, have to be stored away out of reach of mice and rats, and of moths, too, which would perforate the cocoons with their larvæ. Gum camphor might be placed among the cocoons to keep moths away.

Graining.

This is the last and not the less important stage of the whole education. For the purpose of graining, either for market or merely to save eggs for the reproduction of the worms, the cocoons have to be carefully selected. The best cocoons are those that are hard to the touch, depressed on the middle—that is, pea-nut shaped—firm at each end, of a light yellow color, and of a rather coarse grain—that is, to the eye. If, besides, the cocoons are large, so much the better; otherwise, smaller cocoons with the above requisites would be preferable. The floss, or loose silk, having been properly stripped from the cocoons, they are then placed in hollow boxes of any size, about three tiers in each box, and in a room where nothing may disturb or injure the chrysalis soon ready to emerge from the cocoons as perfect insects; 15 to 20 days, according to the weather, after the cocoons have been commenced, do the moths emerge out from their temporary tomb. They always come out of the cocoons early in the morning, just after sunrise, between 6 and 8 o'clock. The male, which is more active than the female, seeks at once the latter for the purpose of reproduction. As soon as paired, they are taken by their wings to sheets of paper spread on some of the shelves for that purpose; and those that are not paired are laid aside by themselves on another paper and removed by the others as soon as paired. They have to be coupled the whole day, when between 4 and 5 o'clock in the evening they have to be gently separated. The males are put temporarily in a box with the cover punctured so as to admit air; they acting as a reserve for next morning in case of more females than males hatching out. The females, after being separated, are removed to a cloth nailed to the wall, where very soon they will deposit their eggs. Cloth is preferable to paper, for the eggs laid on cloth can be given a cold bath in February or March, and the grain might be taken off, if desired, by dipping the cloth in cold water and scraping off the eggs with a table knife. The sound eggs will sink at once to the bottom of the vessel used for that purpose, while the bad ones will float over the water and be easily separated from the good eggs, which are put on a cloth to dry right in the room.

The eggs laid just after separating the sexes are considered the very best. The moths have to be kept in a rather dark room, they being night butterflies.

Diseases of the Silkworm.

Flacherie, or blight, is the stumbling block of silk culture nowadays. Everything seems to get along well with the education; hatching went through splendidly; the worms accomplished their various changes simultaneously, without the least trouble; they kept on eating, moulting, growing as nicely as could be expected, always in good health, and finally, got through their last moulting in a body; they now get rapidly large; they are over three inches long, fat, firm, healthy, eating voraciously; four or five days more, and they will all be ready to spin. But, on a sudden, they commence fading and withering without any apparent cause, and in a very short time lay on the shelves, corpses! It is the dreaded flacherie, or "blight," the scourge of the cocooneries, and which for the last 20 years has baffled the science, knowledge and intelligence of the most experienced sericulturists of Europe. This terrible disease, which always breaks out after the last moulting, during the fifth age, and just when the silk grower is gone to reap the benefit of his trouble, commences with a kind of numbness; the worms cease to eat, leaving the litter and wandering about as if to escape; they soon die, having yet every appearance of health. This flacherie, which prevails to such a large extent among the annual races of Europe, does not affect so much those more hardy races of Japan, that is, on the first year, hence the reason why Japanese grain is imported into those countries, though the yield of silk from them is far below that of the precious annual races of France and Italy. The quality of the food, defective ventilation, atmospheric changes, and so forth, have been, but wrongly, suspected to be the direct cause of flacherie, and to-day that mysterious disease which causes such havoc among all silkworms, is yet an unsubdued disease. Science has given it up and left it to the practical sericulturist who clings to it despairingly, hoping for something to turn up to get rid of the scourge. Flacherie is regarded as an epidemic.

Pebrine—This is a different disease altogether from flacherie. Pebrine generally breaks out among the worms after the second moulting, that is in the third age; in that way it does not prove so bad, for it saves us all the trouble and expense to raise the worms to almost spinning time, as it is the case with flacherie. Pebrine is indicated by black spots on the worm, and the caudal appendage looks like it had been burned. Pebrina, an Italian word for pepper, is very expressive, indeed, of the appearance of the worms attacked by that disease; for they look like having been "peppered" with coarse black powder all over the body. The worms afflicted with that malady have to be taken out and buried in the manure pile or the ground; sometimes all the worms have to be thrown away. For 20 years have silkworms been decimated by pebrine, but since the last ten years it has almost disappeared, but to make place to a worse malady yet. Flacherie, or blight, may, therefore, be considered as the prevailing disease among the silkworms, and the direct cause of nine-tenths of the failures all over the world.

Jaundice—This is only an incidental disease, easily to be prevented. The best way of preventing the breaking out of jaundice is to "effect early hatchings." The cold weather and atmospheric changes are not injurious to the worms, as long as the heat is moderate; but oppressive or excessive heat that cannot be controlled is the direct cause of jaundice. That disease, like flacherie, generally breaks out in the last age, a few days before spinning time. The disease is first detected near the thoracic rings of the insect's body, that is, near the head, those rings swelling up and taking a light yellow tint; it then spreads to the rings of the body, and in the same manner; and in two or three days the skin gets kind of shiny, tight and yellow between the rings, at the stigma (little apertures on the side of the body to admit air to the tracheæ) and to the legs. The worm so affected keeps on eating, however, and to swell up till at last the skin will burst in several places, and a yellow liquid flows out, staining the litter and the healthy worms with that viscid yellow fluid. This malady cannot be cured. The best way is to pick out all the worms affected with it and throw them out to the chickens. When caused by excessive heat, a change in the weather will check it at once.

Grasserie—Hypertrophy, or *mal del grasso*, as the Italians call it; enlargement of the body caused by perturbations in the perspiration of the insect. This disease breaks out at the different ages and before the last moulting. The worms affected by it get kind of fatty, white, unctuous; and in the last two ages they still keep on swelling up, and move round with difficulty. Some trouble in the transpiration of the insect, caused by bad ventilation or bad air, is said to be the direct cause of grasserie. This malady has some resemblance to jaundice. A thorough ventilation and change of air will prevent the breaking out of the disease.

Besides flacherie, pebrine, jaundice and grasserie, there are other, but incidental, diseases that do affect the worms more or less; and which it is well for beginners to be also acquainted with. An occasional worm may be affected with consumption, its organs not being sufficiently developed. Such maladive worms have to be taken away and thrown out.

Then there is what the Italians very properly call the lustrini; as the name indicates it, worms so affected look kind of glossy. They keep small and do not accomplish their moulting in due time, some in fact not accomplishing it at all. Such worms can also be well recognized by their little black head, which, with the glossiness of the body, are the main symptoms of that anomalous condition. They have to be picked out and thrown away, for they never will spin a cocoon. A pair of tweezers is the most handy thing to pick out such little worms.

Worms that are unable to shed their skins must either be helped out, or thrown away.

Sluggards are not affected with any disease; but they must all be removed on separate papers; and as many papers as there are broods.

Ants, mice, lizzards, spiders and yellow jackets have also to be guarded against; for they are all very fond of the fat, tender, succulent silkworm.

The malady of the lustrini is generally caused by a too large accumulation of worms on the shelves; it is to say that the worms have to be thinned or spread out at proper times. It is also a very wrong and bad practice to raise in a room a larger number of worms than the room permits. It is almost sure to create such diseases as the lustrini, grasserie, jaundice and others.

MANUFACTURE OF CELLULOSE FROM WOOD. Dr. Richard Mitscherlich, in Darmstadt, employs the following process: Reducing bodies dissolved in water and acid, preferably sulphate of lime, are heated for some time with wood under great pressure. The wood remains a fibrous mass, while the bodies which produce its disintegration are easily removed. The wood fiber, of which generally more than nine-tenths of th wood used is obtained, is treated after the chemical process by a mechanical process, and can afterwards be used for the manufacture of paper, raw tissues, etc. If bark, straw, flax, etc., is used instead of wood, a finer fiber is obtained by this process than it was formerly possible to obtain with the same materials.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of Grange and subordinate Granges are respectfully requested for this department.

The Department of Agriculture.

The elevation of governmental agriculture to a Cabinet position has long been insisted upon by the Patrons of Husbandry. The following bill to accomplish that result is now before Congress:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Department of Agriculture, established at the seat of Government of the United States, shall be an executive department, under the supervision and control of a Secretary of Agriculture, who shall be appointed by the President, by and with the advice and consent of the Senate, and who shall receive the same annual compensation, and in like manner, as the Secretaries of the other executive departments of the Government.

Sec. 2. That there shall be in the Department of Agriculture an Assistant Secretary of Agriculture, who shall be a practical agriculturist, to be appointed by the President, by and with the advice and consent of the Senate, and who shall perform such duties in said department as may be prescribed by the Secretary, or may be required by law, and who shall be entitled to an annual salary of three thousand five hundred dollars.

Sec. 3. That there shall be in the Department of Agriculture a veterinary division, under the control of a veterinary surgeon, subject to the authority of the Secretary, to which division shall be referred all matters pertaining to the inspection of imported or exported live stock, and to the investigation of imported or exported live stock, and to the investigation of the causes, existence, and treatment of diseases among animals; and said surgeon shall receive an annual salary of three thousand dollars.

Sec. 4. That there shall be in the Department of Agriculture a division of entomology, under the supervision of an entomologist, whose duty it shall be, subject to the control of the Secretary, to investigate the habits of all destructive insects, and to collect such statistics as will show their effect upon the textile, cereal, and other crops of the United States; and said entomologist shall receive an annual salary of three thousand dollars.

Sec. 5. That in addition to the duties required of the Commissioner of Agriculture under existing law, it shall be the further duty of the Secretary of Agriculture to collect, collate, and submit to Congress, at every regular session, the agricultural statistics of the United States, including those relating to labor and the prices paid for the same; to the transportation and freight of agricultural products, live stock, and manufactured articles; and to the location and number of manufactured articles; and to the location and number of manufactures, with their sources of raw material and their markets.

Sec. 6. That all laws and parts of laws relating to the Department of Agriculture now in existence, as far as the same are applicable and not in conflict with this act, are continued in full force and effect.

Who Represent the People?

The following is worth considering: According to the directory of the 47th Congress, there are in that body 293 members:

One hundred and ninety-five lawyers.
Nineteen professional politicians.
Three railroad officers.
One capitalist.
One clergyman.

There are 65 members representing the useful employments of the country, as follows:

Seventeen merchants.
Eleven farmers.
Twelve editors.
Ten manufacturers.
Five physicians.
Two civil engineers.
Two miners.
Two mechanics.
One metallurgist.

The useful employments are still worse represented in the Senate, as the following shows. There are 76 members, whose professions are as follows:

Fifty-seven lawyers.
Five bank officers.
Three railroad officials.
Three professional politicians.

Of the useful professions there are 11:

Three merchants.
Three manufacturers.
Two miners.
Two general business.
One farmer.
One editor.

Enterprise Grange, at Brighton, will hold its annual reunion and harvest feast on April 6, 1882, and extends a general invitation to all Patrons and farmers to participate in the programme of the day. A class of six sisters and two brothers will have the fourth degree conferred on them on that day.

Touchingly Strange.

Within a brief space of time, Sister Carrie A. Colby, (an able correspondent of the Rural Press as early as 1874), passed away, deeply loved and lamented by all Patrons and friends that knew well her able and faithful services for the good of the Grange and the advancement of humanity. She left two young and beautiful children, who have since been bereaved of a step-mother, their father, Bro. G. W. Colby, and now their last natural protector, Mrs. N. P. Smith, their own grandmother, who recently died in Benicia. Miss Clara Deming, of Vallejo, under date of March 2d, writes the *Patron* the following brief, but noble tribute to the memory of Mrs. Smith:

Last week the dark angel, Death, again laid his relentless hand upon this little family, taking the much-loved grandmother—the mother of our dear sister, Mrs. C. A. Colby.

Eighty-five years has she lived and toiled among the sojourners of the earth; now the loving, immortal soul has found a dwelling place with the Savior she loved so dearly. The body has been returned to Mother Earth, placed there by loving hands—a spot surrounded by tender and reverential feelings.

We have buried her out of sight! Out of mind! Oh, no! Daughter, wife, mother, grandmother, each and all with their various joys and sorrows, have been her heritage. Her Christian influence has fallen upon children, grand-children and friends. It has gone into the outside world and made itself known in the towns and States where she has lived, down into the South and even to far-off Turkey. Wherever the missionary has gone, there have her thoughts gone also.

Even when confined to her own house, her mind and hands were busy for others. The memory of herself and works will go down the steps of time and shed its influence upon men and women yet unborn.

Ask not, when we are gone, how we have died, but how we have lived! If we have lived a life of purity and unselfishness, we must surely die in peace and happiness, be it early or late.

J. W. Moore.

Bro. Wm. Johnston writes from Richmond, Sacramento county, to the *Patron*, saying:

Wednesday, Feb. 22d, Franklin Grange was called upon to pay the last sad tribute of respect to Bro. J. W. Moore, one of the oldest and most honored members, who died at his home near Franklin, Feb. 20, aged 59 years. Bro. Moore was buried by Franklin Grange, in accordance with an expressed desire of his while on his deathbed.

Bro. Moore has lived in this vicinity for more than 30 years, and was beloved by all who knew him. His influence was always on the side of morality and good government. Honest and upright, adhering to rectitude in all social intercourse, never deviating from correct moral principles, at the time of his death he was Justice of the Peace, and the justice and honesty of his decisions have never been called in question. He early saw the advantage of the lessons taught in the Grange, and no member of Franklin Grange has received more benefit from its teaching than Bro. Moore. He leaves a wife and six children to mourn the loss of a kind husband and indulgent father.

Stockton Grange Reunion.—From all reports our good friends of Stockton Grange had a right pleasant and profitable meeting last week. We have been expecting some of our contributors who enjoyed the occasion, to tell our readers about it; but nothing has been received up to our time for going to press. We are always glad to herald such meetings.

Extra Numbers to Send East.

The following shows what good use can be made of our recent offer to send the Rural one month and three back numbers for 35 cents:

Editors Press:—I enclose 35 cents in stamps for the Rural Press for one month and three back numbers, in accordance with your offer of recent date. I have wanted to send copies of the Press to a friend in the East, but did not want to break my file of your valuable paper. Your offer gives me just the opportunity I wanted.—W. S. H., Salinas, Cal.

New Firm.—In our advertising columns may be found the announcement of a new commission firm entitled Hulme & Hart, who will occupy the old location of Miller & Co., No. 10 Davis St. The senior member of the new firm, Jas. P. Hulme, was a member of Miller & Co., and for several years has conducted the large business done under this name. We have known him for many years, and have a high opinion of his devotion to his business and thorough acquaintance with matters connected therewith. Mr. Jackson Hart has been interested in the grain business for many years, and for the last two years has been connected with the old firm of Miller & Co.

Within the past eight months the public debt has been reduced to the extent of nearly $98,000,000, or over $12,000,000 per month. At this ratio, the reduction for the fiscal year ending June 30, 1882, will be about $150,000,000. But the ratio will hardly be kept up. A lessened rate of reduction has already been developed. The decrease for February was under $10,000,000. Within the past six months there have been four calls issued for the redemption of bonds, each call being for $20,000,000.

Agricultural Notes.

CALIFORNIA.

CONTRA COSTA.

The Tunnel Road.—Contra Costa *Gazette*: An adjourned meeting of the citizens of Oakland was announced to be held in that city last evening, in the interest of the Tunnel road, projected across the dividing ridge between Oakland and Lafayette. This work was begun some three years ago, under apparently favorable auspices, but it has met with so many unforeseen interruptions that the people residing in that portion of the county which the road would especially benefit have become skeptical as to its completion, except, perhaps, in the remote future. The interest lately manifested in the subject by prominent citizens of Oakland, however, is an encouraging sign, and it is highly probable that the enterprise will be consummated at an early date. The advantages of this road, as a means of promoting easy exchange and intercourse between Oakland and the southern and central portions of our county have, perhaps, been overestimated, but it will nevertheless be of great mutual benefit. It will open an accessible market for a numerous variety of farm products which hitherto could not be profitably raised, on account of the almost insurmountable barrier presented to a market by the high ridge between Oakland and Lafayette, over which runs the present steep and difficult county road. Should the projected highway be completed, a county road will doubtless be eventually constructed from Marsh creek through the Curry canyon to the Mt. Diablo toll road, thus affording a comparatively direct route from the eastern portion of the county to Oakland. There is at present a private road through the Curry canyon, but it was not intended and is not suitable for public travel.

FRESNO.

A Carp Pond.—*Expositor*, Mar. 11: Col. Forsythe, of the Nevada colony, will be the pioneer carp culturist of this vicinity. He has the arrangements perfected for the excavation of a two-acre pond on his land which is splendidly located for the purpose. The pond will be stocked with carp as soon as completed. Around its margin will be planted shade and ornamental trees, outside of which will be a carriageway. Aside from its profit to the Colonel the result of the project will prove a source of amusement to his many guests.

An Expert in the Raisin Business.—H. A. Hawke, who recently purchased 40 acres of land on Maple avenue, Washington Colony, is setting out twenty acres to Muscatel vines. Mr. H. was for twenty years in the employ of Mr. G. G. Briggs, as foreman, eight years of which were passed at the celebrated Woodland vineyard. His thorough knowledge and practical experience in all the details of the cultivation of the vine, and the manufacture of raisins can not fail to prove of immense value to the residents of that colony.

LOS ANGELES.

The Crop Outlook.—*Express*, March 11: All the county papers convey cheering news of the prospects of the crops. The barley fields are said to be coming up finely, and the revivifying effect of the last copious rainfall has made it very possible that we shall have more than a good average wheat crop. In the vicinity of Compton, the Cerritos and Wilmington, there is a very wide area of barley and wheat planted, and the prospect of their attaining a satisfactory maturity is said to be very encouraging. We hear good news also from San Fernando. Although the crop there is not uniformly flourishing, the yield, in the absence of any unforeseen accident, will be fair. In the Los Nietos and Artesia belts the prospects are as good as in the best seasons. There is less land broken up on the mesas south of the New river than there would have been with a wet winter, but a fine hay crop may be looked for, and in spots considerable grain. The prospects of the farmers in the direction of Santa Monica and the Cahuenga range are reported to be excellent, and that extensive belt will greatly help to swell the volume of barley raised this year in Los Angeles county. The Ballona country never looked better than it does now. The rich soil of that splendid farming valley will produce better, if anything, this year than if we had had a greater amount of rain.

Prospects.—*Mirror*, March 11: N. M. Kellogg, a cheese manufacturer of Santa Barbara, ormerly of Ventura county, arrived here Wednesday. He came on horseback from Santa Barbara to Newhall, thence by rail. He reports that the country between Santa Barbara and Ventura is sown mostly to wheat, which looks well. Between Ventura and Santa Paula there is a large amount of land thoroughly cultivated preparatory to being sown to corn and beans. Between Santa Paula and Newhall the land is mostly sown to wheat, but some barley, all looking tolerably well. The general expression of farmers along the route was that there is assurance of good crops with one or two more rains. From the Sespe down to Newhall the recent rainfall registered at least 2¼ inches. Looking from the cars on the way from Newhall to Los Angeles, he observed that the wheat looked very much more thrifty than a year ago, when he came over the same road. He believes that it will make a better crop than last year with a little more rain.

MARIN.

A Dairy Establishment.—Petaluma *Courier*: Recently, while on a trip in the neighborhood of Tomales, we had the pleasure of calling on Mr. Abijah Woodworth. He has a large dairy ranch a couple of miles from town. His house is of novel design, having been built by Mr. Woodworth in an altogether original style. It is large and roomy, and well calculated to receive whole crowds of friends in a strictly "hostile" manner. The second floor is one large room used for a dancing hall. Mr. Woodworth informed us that it was impossible to surprise him, as in five minutes time he was ready to receive and accommodate a hundred or more guests. The dairy house, barn, etc., are all built in the most convenient manner, thus saving much time and money.

MENDOCINO.

Wool Growers' Meeting.—Ukiah *Press*, Mar. 10: A meeting of the Directors of the Mendocino Wool Growers' Association was held at Mr. Carothers' law office on Saturday afternoon, at which some very important business was done. Present — Messrs. Reed, Lucas, Townsend, Angle, Shimmins, Ford and Buell. President Reed took the chair, and Mr. Lucas acted as scribe until the Secretary, B. W. Day, arrived. After approving the minutes of the previous meeting, some important business appeared in the report of the committee on warehouse and machinery. F. O. Townsend, of the committee, reported that he had not arrived at any conclusion upon the propriety of building a warehouse. The needs of the business of the association required that its warehouse should be near a railroad, and the uncertainty of the route of the expected road made it impossible to plant the warehouse just now. He had received offers from three merchants, who would accommodate the association for the spring season. S. Marks offered a fire-proof warehouse, 30x60 ft., at a rent of $100 for the season. C. Hofman offered the use of his warehouse, a larger one, free. B. Marks also made the same offer of his buildings and yard on Main St. Each of the gentlemen volunteered to take stock in the association, and to contribute their personal assistance. In the matter of machinery, Mr. Townsend said that a new baling press, all complete, for hand or horse power, would cost $500 in San Francisco. This kind of presses, which were adapted to our wants, were being superseded with more powerful machines, to be operated by steam or hydraulic power, and a second-hand machine could probably be bought for half the cost of a new one. Mr. Ford made the same statement of facts about a warehouse, and an interchange of views showed the Board did not favor building; and on motion of Mr. Shimmins, it was determined to rent for the season. After discussing the advantage of the various offers, Mr. Ford moved that the chair appoint a committee of three to secure a warehouse and procure the machinery necessary for carrying on the business of the association. The motion prevailed, and the chair appointed Messrs. Angle, Townsend and Ford as such committee. Upon motion of Mr. Lucas, the employment of a competent grader was also added to the duties of the committee. The very important matter of revenue was then discussed. Inquiry showed that $5,560 of the capital stock had been taken. An assessment of 10%, or $2 upon the par value of $20 for each share, would yield $560. Mr. Townsend moved that an assessment of 10% upon the par value of the capital stock be levied, payable on Friday, March 10th, to the Secretary, at the office of the County Assessor; the same to become delinquent on Wednesday, April 5, 1882, which was carried. Mr. Townsend also moved that a book for stock subscriptions be kept open by the Secretary, until the 5th of April, when they shall close. The motion was carried, the Secretary was instructed to get the necessary books, and the meeting adjourned till the first Saturday in April.

NAPA.

Editors Press:—The season is a very favorable one for Napa and surrounding counties. The rainfall has been ample, but not, as is often the case, too heavy. The weather continues cold, and vegetation is consequently backward. The almond trees are but struggling into bloom. We may therefore naturally expect good fruit crops, as the buds are so late in coming out, and the prospects in general are very encouraging. will not be so likely to be injured by frost. The grain looks finer than I have ever seen it, and feed is plentiful and A large acreage is being planted to vines again this spring, and it is notable that much of the deep, rich land immediately around Napa City, in Brown's valley and northward is gaining in favor, and justly, for the raising of both orchard fruits and grapes. In a few years some of the finest vineyards in the State will be found a few miles north of Napa City. East of Napa the soil is lighter, but is well known to produce grapes of the finest quality; and this vicinity is also less liable to frosts, and for this reason, cuttings for planting are far superior to those from vines where the wood is not so well ripened. In this vicinity the vineyard of Hon. M. M. Estee is well worth a visit. This gentleman has been engaged in viniculture and other branches of farming for many years, and is thoroughly and practically progressive in every way. He fully understands the importance of good cultivation and manuring, using bone meal, decomposed stable manure, hair from the tannery, etc., in the vineyard, and is experimenting largely with the best Eastern varieties of grapes for grafting stock, and also those

which are valuable on their own merits. Zinfandel, Chasselas, Berger, Burgundy, Riesling, and others, have been used extensively, and the Gray Riesling is beginning to be appreciated, being a valuable grape and an immense bearer if trained high. A large number of fruit trees have been set out of the best varieties. There is a great deal of land here admirably adapted to the raising of Bartlett pears, plums, prunes and apples, and much of the land along the creek bottoms and on the hillsides will produce fine peaches. Napa Valley cherries are well known in the San Francisco market. Mr. J. L. Marshall, of Brown's valley, three miles west of Napa City, is one of our pioneer fruit growers, and is largely increasing his orchard by planting Coe's Golden Drop, Petite d'Agen prune and good canning peaches, and many others are doing the same in a lesser or greater degree.—LEONARD COATES, Napa City.

SANTA BARBARA.

THE RAIN—Lompoc *Record*, Mar. 11.: Thursday evening the wind, which had been blowing heavily from the north for several days, suddenly shifted around to the southeast, and about three o'clock the next morning the rain commenced. At dusk last evening, 1.50 inches had fallen, with indications of a wet night. The wind, however, veered to the north again and the storm cleared up. It is very likely that some mild weather will now ensue and set vegetation booming. This has been the heaviest and most encouraging rain of the season, and has benefited the country to an almost incalculable extent. Those farmers who were wise enough to put their grain in early will feel very jubilant over their now flattering prospects of good crops, while stockmen will soon be joyfully punching the sleek sides of the cattle, and wondering how they came to be so badly scared.

STANISLAUS.

OUTLOOK.—Modesto *Herald:* The country north and east of Modesto is probably one of the finest wheat-growing sections in the State. The extensive plains are pretty much all covered with a thrifty-looking growth of grain, and there can, so far, be no complaints made of the natural provisions for growth. We are not so sanguine as to say a crop is assured, for that would be altogether premature at this time; but we do know that the present prospects are very flattering. We visited the section lying between Dry creek and the Stanislaus river, to and east of Oakdale several miles, and the wheat looks splendidly. The farmers are not prone to worry over the outlook, and while they do not feel absolutely secure, they feel comfortably certain that the summer-fallowed grain will make a fair crop, and with ordinary spring rains and not too much drying wind, the winter-sown will give them a better crop than was gathered last year. The summer-fallowed grain in this section of the country covers the ground, and the warm sun makes it grow rapidly. It seems to have healthy root, and will probably be harder to dry out than if the cold weather had not kept it back.

SOLANO.

FRUIT BOXES FREE.—J. M. Bassford, Sr., of Pleasant Valley, informs the Vallejo *Chronicle* that he is preparing for this season's crop a lot of 10,000 fruit boxes. They are to be 16x8x3 inches, and are intended to be given away with the fruit. The old custom of returning the boxes has, it is believed, had a tendency to distribute and import various insect pests from one orchard to another, as it is seldom that a shipper does not receive stray boxes with his own. The system which Mr. Bassford will adopt this season does away with this trouble entirely. The prospect for the fruit crop in the neighborhood of Vacaville is reported to be encouraging.

EDITORS PRESS:—As we see nothing from this section, perhaps a few items would not come amiss. Crop prospects are splendid but rather backward, owing to the cold weather. There is a larger area planted than usual and all are jubilant, but with all, we are in a favored part of the vineyard; such a thing as a drouth or failure has never been known. The fruit craze has taken but little hold of the farmers although there is some that have caught it. One of my neighbors is planting 9,000 vines and doing it by puting down an iron bar, then sticking down the cane as far as it will follow the hole made by the bar. The consequence will be that he will have it all to do over again next year, besides loosening one year's growth and all the expenses of this year's work. We are going to have a cheese factory, so they say. It has been under way for the last year or more, and "nary" cheese yet, but you shall know as soon as we see it. From outside appearances it will be a mammoth one. It commenced raining last night about six o'clock and rained gently all night until six this morning. The prospects for fruit are all that could be asked for.—F. HUTTON, Vallejo, March 10th, 1882.

SONOMA.

NOTES ON THE REDWOODS.—Santa Rosa *Democrat:* An intelligent lumberman, one who with equal dexterity wields the ax, or drives the saw or wedge in the forests of Sonoma county, gave us a few items of interest in regard to the profit realized in some instances by the lucky owners of land in the Redwood belt of Sonoma county. Of course the cases cited were exceptional, but they go to found the possibilities of profit in timber land. In one instance a man had kept an accurate account of the value produced from ten acres of good bottom redwood land, and, all told, it footed up thirty thousand dollars. The cost of manufacturing into lumber, slats, shingles, etc., the raw material, was about one-half the product, making a net yield to the owners of fifteen thousand dollars, or fifteen hundred dollars an acre. We doubt not than in some instances a greater profit has been taken per acre in the redwood forests of this county. Our informant very recently saw two hundred dollars refused for a single tree. It was afterwards cut. It measured two hundred and twenty-five feet in height, and was, as he termed it, as straight as a candle. It yielded a handsome profit over and above the offer made after all expense of manufacture was paid. These enormous trees are thrown along an intended line with surprising accuracy. They are notched on one side, are sawn on the opposite side, and are then inclined by wedges in the desired direction until they topple over along the given line, the dark-green foliage shrinking back, as if in terror from the crash. We gathered one other item of interest in this connection. A curious woodsman for the purpose of testing the accuracy of the ring theory of growth in trees, noted through a series of years the start of a number of young redwood trees. After the lapse of nine or ten, or even a greater number of years, they were successively cut down and the rings invariably accorded with the known age of the tree. There were a few trees in this section which computed by their annual rings had reached the ripe old age of 2,500 years, and were still sound to the heart, but their lofty crests had long since yielded to the tempest, and disappeared, leaving a stump some eighteen or twenty feet in diameter and only one hundred and fifty or two hundred feet high. The present growth evidently succeeded the one referred to, its age being not more than twelve hundred years. The diameter of the present growth of trees varies from eight to twelve feet, and their height from three to four hundred feet.

TEHAMA.

EDITORS PRESS:—The long-continued north wind and frost has terminated, but not for the better for the stockmen. It commenced raining here on last evening about four o'clock and rained until about nine, when snow commenced to fall and continued through the night This morning, March 10, the snow is about three inches deep, but it has stopped at present, and prospects are favorable for a clear off. Up to the present time there has been no great amount of stock lost here this season; a very small per cent more than in previous winters, but the majority of the farmers have fed out all of their hay, and if the snow freezes and the nights continue cold it will be very hard on poor stock. During a residence here of 10 years, I have never seen the grass and grain as backward as it is this season. Grain that was sown in the fall came up the first rain we had, and looked fine until the north wind and cold frosty nights withered and dried it until it is doubtful in the minds of some whether it will make more than a half crop. The late sown grain looks very well considering the cold nights and north winds. Not a peach or almond bloom has dared to show its face yet, and if the weather continues cold I hope they will not for some time.—L. W. G., Neoma Lacka Reservation.

VENTURA.

NEWHALL NOTES.—Cor. Los Angeles *Express:* The late abundant rains have clothed the country with a mantle of green, and grain is everywhere making its appearance, and now promises an abundant yield. There are 10,000 acres seeded to wheat on the Newhall ranch, besides many small tracts, making a total of 11,000 acres. Sheep and cattle are now out of danger, although at one time the outlook was gloomy. Senor Miguel Ortiz lost 1,000 lambs and 300 grown sheep, and heavy losses are reported from different localities.

YUBA.

THE EUCALYPTUS POISONOUS TO INSECTS.—Marysville *Appeal*, March 11: Reports come from Australia that the leaves of the eucalyptus, spread on the ground beneath fruit trees, are a perfect protection from insects. It is added that another way of protecting fruit trees is to bind strips of eucalyptus bark around their trunks. It was noticed in this city last fall that some orange trees in contact with eucalyptus trees had escaped the attacks of the scale, while other orange trees, farther from the eucalyptus trees, were infested by the insect. It is well known in California that eucalyptus leaves strewn on the floor will rid a room of fleas, and the tree itself seems to enjoy absolute immunity from insect pests. Orchardists would do well to experiment with eucalyptus as a remedy for insect enemies of fruit. A strong infusion of leaves might be advantageously used as a wash in some cases.

YOLO.

FLATTERING REPORTS.—*Democrat*, March 9: We have had a splendid opportunity within the past two days to obtain fair and accurate reports of the crop prospects in Yolo county, the Superior Court having brought to the city representatives from all the agricultural districts. However, the whole may be summed up in the simple statement that the prospects are flattering, generally. Owing to the prolonged spell of cold weather, as might be supposed, the winter-sown has made slow progress, but under the influence of the present warm sunshine it is now doing as well as could be expected. In some places it was for a time feared that much of the seed had rotted, and that it would be necessary to re-sow the land. But even this apprehension, we are told, has not been realized, and the grain is now growing finely. The summer-fallow, though perhaps retarded by the cold weather, is now much further advanced in many localities than it usually is at a corresponding period of the season. We find but very few farmers who do not feel confident of an abundant harvest, and taken altogether, the reports are most flattering. Summer-fallowing is now being pushed vigorously, and the weather is very favorable for prosecuting the work.

FARMERS JUBILANT.—Captain Albert Foster, Superintendent of the Railroad Company's steamers at Sacramento, returned yesterday from a week's trip to Tehama and vicinty. He reports the farmers in that section exceedingly jubilant on account of the recent showers, which had the effect of freshening up the wheat in places where it was inclined to droop, and they now feel assured of good crops. Throughout that section, lastf year's crop is still being largely held for higher prices, but it is thought the present storm will have a tendency to make them let it go.

Commercial Reveries.

EDITORS PRESS:—I dreamed of being in a vast assemblage, and after listening awhile, I found it was a farmers' meeting. The object appeared to have something to do with the marketing and shipment of fruit and produce. There was a general wrangling, many claiming they did not get as much for their products as they should do; that transportation was too high, etc. Finally, some one from Putah creek gained the floor, and said: As our's are the first vegetables that make any show in the market, and it costs just as much freight on poor as on good articles, and there always appears to be a surplus of the good and poor together, I move for the present season we ship nothing but good articles; that the small, knotty tomatoes, cobbs that have no grains of corn on them, beans too tough to be eaten, be discarded. In short, if I meet with a second, I move no grower ship anything to market he would not put on his own table. This was seconded by an elderly man from Santa Clara, who said he had long been thinking about the same thing in reference to strawberries; that he noticed a great many being shipped that contained but few that could be of use outside of those on top of the box. Then he asked, why not discard the worthless ones, saving freight on them, and getting better prices for those shipped. The motion was put and carried,

A man from Sebastopol moved that no apples be shipped that required more than 6 tiers to fill a box. It was seconded by a man from Santa Cruz county; but there was a heated discussion over this proposition carried on for some time by members from Napa, Sonoma and Santa Clara, who said they did not see what they could do with their small ones, if they shipped their large ones and had none left to top off the boxes. But, after it was shown that the small ones, which could not be utilized in San Francisco, but might be at home, formed a large per cent. of the freight charges, the motion finally carried.

The next motion came from a potato raiser. It was moved that all small potatoes be kept at home and fed to stock. This was seconded by a gentleman from Pigeon Point, who pointed out some good results from his experience in this manner of using small potatoes. This motion met with much favor, a few opposing who had no stock. Those favoring contended that the small ones detracted from the price of the good ones more than enough to pay if they were thrown out and lost. There was a mode of handling them to prevent there being any detriment in the sale from first hands explained, which showed these men had not devoted all their time to manual labor, but had been doing some headwork as well. That was, in place of putting the small ones in the bottom or on the sides, they put good ones in the bottom, then put a nail keg, with both ends out, in the center of the sack and filled it with small potatoes, and, after filling around the sides with large ones, drew the keg out and put some large ones on top, and the small ones to the extent of a nail-kegfull were all secure. This did not meet with much favor, so the motion carried.

The next subject was sweet potatoes; but as they were raised by the Chinese, they could not reach them. One man from the Sacramento river, who rents largely to the Chinese and gets one-half of what their sweet potatoes sell for, promised to use his influence to have a larger portion such as could be used. This assurance gave great satisfaction, and made the speaker making it so popular, that others who have their lands farmed out to the Chinese on shares, promised they would try and correct many abuses they have seen practiced in the way of packing fruit and vegetables for some time back.

At this point there appeared to be a kind of love-feast and a general resolve by all that they would try and put up their articles for market in such a way the buyer would get just the article he thought he was getting when making the purchase. After general congratulations that they were doing much good by coming together, one venerable looking old man moved that the sense of this meeting is: That no one will ship anything to market he would not take to his own table; and that all goods put up for market be of good quality, put up with a view to show to good advantage, but not with any object to deceive; and by so doing our products will bring more satisfactory prices, and we will be great gainers in saving expense on unsalable articles, and our consciences will be easier by the reason of not wronging anyone by deception.

This was carried with such a shout of applause, I was aroused.

It was some time before I could realize it was a dream. I lay and thought and thought; was it possible the farmers were going to make such inroads on the business of the city all at once? I thought of the losses of the box and sack-men in the decrease of their business, in only being able to furnish enough to hold the fruit and produce that was suitable for human food. I thought of the loss to the cart-man, for he received just as much for hauling worthless as for hauling good produce. I thought of the swill-men who fatten their swine on the offal from the kitchen of the poor man, who tries to economise by buying his fruit by the box and his potatoes by the sack; but alas! he has been disappointed, as a large per cent. being worthless, went to enrich the feeders of swine. But I thought if the swill-man lost the poor man with a large family would gain, for he had paid the middle-man just as much as if all had been good, for they were so nicely put up he could not detect the deception. I thought of the loss to the transportation companies, but was consoled by the thought, they, being rich, could stand their loss; and as there were many instances I could see where the poor man would be benefited, I concluded on the whole, the meeting would be productive of good, as set forth in the concluding resolution.

My mind becoming composed, I again fell asleep, and I saw a group of men in deep consultation. I could only understand a sentence now and then. I did not wish to be an eavesdropper, but there appeared such earnestness about some of the speakers, I could not tear myself away. They appeared to be a different type of men from those seen in the farmers' meeting. A stout man, who appeared to be doing much of the talking, said there is no use for us to pay the prices we have been paying the farmers for their fruit. If we will combine, we can get it at our own price, for they cannot make any arrangements to take care of it this season anyway, and we will make plenty of money. I tell you what we do; we all go together, and have one man set the price, and for show of fairness we have two or three men to buy—but no one to pay above the price given him by the head buyer. After hearing so much, I became an interested listener, and soon found it was a secret meeting of the canners. It was moved that each one should subscribe in proportion to the business they did, and as all claimed to do the most, it was agreed that each one subscribe the same amount, which motion carried. It was then agreed that no fruit should be bought in the country, but all was to come into this market, and the head buyer should set the price and each one have his share assigned to him. It was then thought best to have some name for the association, but as the small hours of the night were passing, and I became restless, things became confused and I awoke. Now, Mr. Editor, if you have any remedy for these wanderings of the mind, I would be pleased to hear from you. A SUBSCRIBER.

News in Brief.

HENRY WARD BEECHER will visit California next fall.

AN earthquake in Costa Rica destroyed the towns of Alajuela, San Ramon, Greca and Hereda, and several thousand lives were lost.

A GREAT plowing match recently took place on Mr. Parnell's estate at Avondale. Over 6,000 people were present and 1,000 plows were employed.

COMMODORE JOHN GLASSON, on the retired list of the U. S. Navy, and who received his appointment as midshipman in 1823, died at New York on Sunday.

THE track layers on the California Southern Railroad are 72 miles from National City, and are now in the Temecula canyon. There are 59 miles yet to be completed in order to reach Colton.

THE foreign control of Egyptian affairs will be henceforth confined to the financial function, and the executive policy of France and England will be exclusively confined to their respective Consul-Generals.

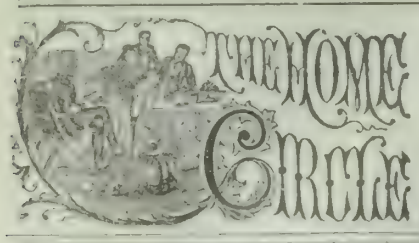
A NEVADA county paper says that the comparatively dry and cold winter, and the mining suits, make it pretty certain that the coming summer will be an exceedingly dull one all through the mountains.

IN various parts of the interior reports of the depredations by wild geese continue to be heard. In many places whole fields of sprouting grain have been completely destroyed, rendering re-sowing necessary.

SCORES of men are leaving the Comstock just now to seek employment in other fields. As they generally leave their wives and children behind, for the present, the attendance at the public schools shows little diminution.

THE Northern Pacific has decided to appropriate $10,000 per year for the next five years to be expended in planting trees along the line of their road through Montana and Dakota. It is thought that the trees will protect the track from snowdrifts.

ABOUT $1,000,000,000 of the national debt has been paid since the war ended. France has now nearly treble the debt of the United States, and Great Britian more than double. Even Spain has a bigger debt than that which remains of the United States.



After Dark.

(On San Joaquin.)

[Written for RURAL PRESS by E. E.]

"Cuckoo, Cuckoo," sweet bird
Out in the barren grain fields heard,
I wonder who are you,
In modulations sweet and true,
Calling through the dark, "cuckoo!"

Where is your bonnie nest?
What thought is trembling in your breast?
What color is the throat
That gives to night the distant note,
Like love to silence spoke?

"Cuckoo, cuckoo," so near.
Hast summoned any sweetheart dear?
I wonder who you are?
Lone, plaintive, like a wandering star,
"Cuckoo!" so near—so far.

"Cuckoo"—my brave unknown;
The fields are wide, and dry, and lone.
There's dark, and wind, and dew,
The high, faint starlight struggling through;
Yet still sounds sweet "Cuckoo."

"Cuckoo, cuckoo," I hear,
Borne through the silent air—so clear.
My heart has lost its pain
Thus listening to the calm refrain—
"Cuckoo, cuckoo," again.

John's Little Joke.

"Well, I snum!" exclaimed Uncle Phil Wheeler, in his characteristic way, finishing the speech with a prolonged whistle.

"What's the matter, Uncle Phil?"

"Hey?"

"What's the matter?"

"Why, your Aunt Susan just bought another bureau!"

The speakers were Mr. Philip Wheeler, commonly called Uncle Phil, and his handsome, devil-may-care nephew, John Langdon. Uncle Phil was standing under the big, brown horse-chestnut tree, whittling a new handle for his hammer, when a hay-wagon, containing a bureau, stopped before the gate.

"Whose bureau's that?" demanded Uncle Phil.

"It's for Miss Wheeler," was the answer. "She bought it down at Squire Thomas's auction."

"Well, I snum!"

John Langdon, just coming from the woodhouse, armed cap-a-pie, with rod and lines, heard the exclamation and inquired the cause.

"So Aunt Susan has bought another bureau, has she?" he remarked, after a moment's scrutiny of that awful piece of household furniture. "I say, Uncle Phil, where is she going to put it?"

"Hey?" ejaculated Uncle Phil, staring hard at his nephew over his silver-bowed specs.

"Where is she going to put it?"

Uncle Phil shook his head and renewed his whittling.

"I'm blamed if I know," he said at last. "I reckon 'twill have to set atop of sumthing, for I don't believe there's floor room for it in the house."

"I've got three in my room now, and I shall protest against a fourth," laughed John. "Aunt Susan," addressing that lady, who appeared on the piazza to superintend the removal of her newly acquired treasure from the cart to the house, "where are you going to put that thing?"

"Well, John, if you want it, why, of course you can have it; but I did think I'd put it in the buttery; it would be so handy—"

"By all means," interrupted John; "the buttery is just the place for it; three are as many as I can occupy, inasmuch as I only brought a hand-bag along on my little visit. If you were to give me a fourth, I should be reduced to the necessity of remaining in bed in order to use it."

Oh, go away, you rogue," cried his aunt, looking lovingly at him; "and stop laughing at your old auntie. Here you (in alarm to the driver), take care there, you'll have that leg off! Hold on to the glass! My! my! How careless you be!"

After much anxiety on Aunt Susan's part, hair-breadth escapes on the bureau's and a good deal of harmless swearing, such as "I snum!" "by golly!" etc., on Uncle Phil's, the old bureau was at last deposited in the buttery, where it took up just three inches more room than it could with any degree of propriety be accommodated with. Consequently, being of a firm and unyielding nature, a sharp and uncompromising corner was thrust obtrusively and offendingly out, against which unwary toes and unfortunate shins would in all probability be frequently punished.

But Aunt Susan was not the woman to go forth to meet trouble, and no shadow rested upon her placid brow, nor misgivings annoyed or made afraid. The bureau was a bargain, and that sublime fact shed such a halo of glory over its somewhat battered surface as to completely put to rout the inconvenience of its position.

Next morning Aunt Susan rose betimes, sent for the woman who lived on the back road, and enjoyed a day of "putting to rights." Those days, in which she caused to be brought forth from garret, cellar and hidden store-rooms treasures collected from auctions innumerable, were dear to her heart, though abominations in the eyes of Uncle Phil, who wandered around amid the household gods in bitterness of spirit.

John watched the "cleaning" operation with an amused smile curling the corners of his handsome mouth, till at length a bright idea struck him.

"By Jove!" he muttered, "I believe we might do it!"

Five minutes later he might have been seen in earnest confab with Uncle Phil, who grinned and nodded his bead in evident satisfaction and full approval of the plan, whatever it was.

The day ended with great success in the cleaning line. Before sundown an array of spotless mahogany, brass, china, britannia, etc., might have been seen ornamenting Uncle Phil's front yard—articles which the waning rays of the sun touched and caused to reflect like polished mirrors. Soon everything was replaced, the old woman departed, and quiet brooded over the old 'armhouse once more.

Next day John was to return home to C——, and Aunt Susan was to accompany him, for the double purpose of paying her sister—John's mother—a visit, and witnessing the ceremony which should give to John a wife.

This wedding was very near to her heart; first, because she loved John very dearly, and second, because he had bought a lovely little nest of a home close by her house and was, after a reasonable trip, to bring his young wife here, under Aunt Susan's motherly wing, while he began his career as a lawyer in the brisk little village near by,

Nothing short of the immense importance of this event could have induced the good woman to commit the daring act of risking her neck upon a railroad; for the 20-mile journey was as formidable to her, with her old-time notions, as would a visit to India be to a town-bred man.

The morning arrived, and Aunt Susan, with many injunctions and cautions, at last took her place in the wagon which was to convey her to the depot.

John delayed a few moments to take special parting with Uncle Phil. What was said no one heard save the parties interested; but John's low words called forth a series of energetic words from his uncle, and a dry, hard chuckle, betraying an unusual amount of interest.

The journey ended safely, and Aunt Susan was beginning to feel at home on springs, and to sleep in spite of the noise on the street, when a letter from home completely upset the good woman, and threatened to start her on her homeward track without delay.

"The house has been robbed," wrote Uncle Phil. "I was down to see Marthy"—his sister—"and it sot in to storm so hard I stayed all night. Wall, when I got home I thought things looked sorter queer, and sure enough, I found lots of things gone. The bureau in the buttery and all the things outen the summer kitchen, a whole lot of brass things from the stairway closet, and no end of fixin's all over. I can't see," wrote the old gentleman, "as any close or silver has been took, and I guess the thieves must hev knowed of your bargains and come for them special. I've heard they set stores by them in big places. I reckon at a ruff guess we've lost about five burows, three sophies and six or seven parlor stoves, to say nothing of chiny and brass things."

To say that Aunt Susan was stunned would be but faintly to express her state of mind; but she determined John's happiness should not be dimmed by her anxiety, and so by a great effort she succeeded in overcoming her despondency and assuming a cheerful face.

The wedding day came and passed. John and Mary were bound in the holy bonds of wedlock, and had departed on their bridal trip.

Aunt Susan lingered a few days to complete some purchases, then returned to the even tenor of her quiet home, and waited with what patience she could for John's return.

Uncle Phil was waiting too—silently, but no less anxiously. In fact, a little air of mystery hung over the old house and hid shyly away amidst the wrinkles of the kindly old faces of its excellent owners. Uncle Phil had some secret he did not tell Aunt Susan, and Aunt Susan had some secret she did not confide to Uncle Phil, and stranger still, each was so engaged with his own as to be perfectly oblivious of the other's possession.

Only one person saw, understood, enjoyed and remained silent—Uncle Phil's sister, Martha.

The summer's heat slowly died out, and autumn was beginning to paint the tree-tops in the glories of red and gold, when John wrote that he was coming with his wife to take up his home in the little house. They were to remain at Uncle Phil's till their house was ready.

Of course everything was on tip-toe. Aunt Susan caused a supply of pies and cakes to be baked that would have victualed a man-of-war; while Uncle Phil spent the entire day shaking out buffalo robes, and polishing up the old carriage and wagon.

Train time came, so did John and Mary, and the old people drove them home from the depot with great pride, under the scrutinizing gaze of the entire village eye, so to speak.

Tea was soon ready, but not so soon but Uncle Phil had found time to divulge his secret to John, for from the woodhouse came a low murmur of voices, with now and then a hearty peal of laughter in John's clear voice, mingled with Uncle Phil's low guffaw.

Twice did Aunt Susan call out and demand to know the joke, and twice did she get her trouble for her pains, for no hint was given.

After tea the whole party strolled down to the new house. Now it was Aunt Susan's turn. With a proud step she marched ahead and opened the door of the house, a faint flush on her withered cheek. Mary followed closely, but Phil and John stood rooted in the hall, staring blankly and stupidly into the little parlor.

Certainly there was nothing there which ought to frighten two full-grown men—only four or five bureaus of somewhat antique design, several tables with massive pedestals and claw feet, two sofas large enough to accommodate the "prehistoric man" we hear about, and a goodly assortment of clocks, andirons, shovels, etc.

"You don't seem to be pleased," said Aunt Susan in a crestfallen manner, her kind old voice trembling a little. "Now I thought you would be tickled about to death with them. I found them all in C—— (Uncle Phil and John exchanged guilty looks), and I was so took aback at losing mine, and I noticed you looked kinder red and cut up the morning the news come, so I thought to myself, now I'll just buy these for you, John. This here burow"—placing her hand lovingly on a large and imposing piece of furniture—"did look so exactly like the one I bought of Squire Thomas and had in my buttery, that I couldn't help getting it. You know you kinder wanted it, John, the night it came home, and I alus felt sorter mean that I didn't give it to you then; so as soon as I sot my eyes on this one I up and bought it, and sent it down with the rest, unbeknown to anybody, so as to surprise you. You didn't suspect, did you, Phil?"

But Uncle Phil was still speechless, and even John's ready tongue refused to do its work.

While they yet stood, a silent and crestfallen group, a shrill, high treble broke upon the silence, and Aunt "Marthy" came walking in.

"Wall, I do say you look meeching enough! I told you, Phil, that Susan would find you out. I thought I should bust when Susan went to Caleb to go down to the depot and haul up these things just ten days after he hauled um down, though, as fur that, 'twas dark enough when he took um down, being night—"

At this awful stage John recovered himself sufficiently to confront Aunt Martha, and, by dint of winks and nods, made her understand that she was making a mess of it.

Poor "Marthy" stared as open-mouthed as the rest; but the warning had come too late. Aunt Susan was by no means slow, and the whole plot was as plain as daylight to her.

"And so, Philip Wheeler," she burst out with withering scorn, "you thought 'twould be fine fun to deceive me with your trumpt-up story of thieves that has made the shivers run down my back every night since I came home! Oh, you needn't say nothin'"—as Uncle Phil attempted to speak—"it's mity honest, mebbe, and does great credit to your profession. As fur you, John, I wouldn't have bel'ved you would have treated your old auntie in such a way. You ken take them old things and send um back to C——; I hate the sight of um!" And Aunt Susan fairly broke down, and, bowing her head on Mary's shoulder, burst into a shower of tears which caused Uncle Phil and John to feel not only like sneaks and scoundrels, but like midnight assassins and burglars as well.

There was not much to say, but what could be said John said; he explained that no harm was intended, and that it was but a foolish, boyish trick. And Uncle Phil scratched his head and tried to look boyish, and failed utterly, because he already looked so sheepish and mean.

But Mary did just what a warm-hearted, clear-headed woman should have done. She kissed Aunt Susan affectionately, and said:

"Uncle Phil and John meant to play off a good joke on you, but you have turned the tables finely, and I am doubly glad—first, because I do love to get the best of a joke, and secondly, because I dote on these dear, quaint old things. Why, aunty, you have given me treasures! Just wait till you see how sweet I'll make this little place look."

And so she did, so quaintly sweet, and altogether charming did the little house grow under her skillful fingers that it became the rage, and the demand for old things was almost as high in the village as it was in our big city, where something always rages.

John became a convert at a very early day, and even Uncle Phil said:

"I snum! I didn't know the old truck could look so kinder scratic."

To which Aunt Susan would reply:

"I allurs knowed 'twas 'ristocratic, Philip."

They are all very happy, and Aunt Susan has long since forgotten and forgiven John's little joke.

The Old-Fashioned Mother.

Thank God some of us have had an old-fashioned mother. Not a woman of the period, enameled and painted, with her great chignon, her curls, and bustle, whose white, jeweled hands never felt the clasp of baby fingers; but a dear old-fashioned, sweet-voiced mother, with eyes in whose clear depth the love light shown, and brown hair just threaded with silver, lying smooth upon her faded cheek. Those dear hands, worn with toil, gently guided our tottering steps in childhood, and smoothed our pillow in sickness, ever reaching out to us in yearning tenderness. Blessed is the memory of an old-fashioned mother. It floats to us now, like the beautiful perfume from some wooded blossoms. The music of other voices may be lost, but the entrancing memory of her will echo in our souls forever. Other faces may fade away, and be forgotten, but hers will shine on. When in the fitful pauses of busy life our feet wander back to the old homestead, and crossing the well-worn threshold, stand once more in the room so hallowed by her presence, how the feeling of childhood innocence and dependence comes over us, and we kneel down in the molten sunshine, streaming through the open window—just where long years ago we knelt by our mother's knee, lisping "Our Father." How many times, when the tempter lured us on, has the memory of those sacred hours, that mother's words, her faith and prayers, saved us from plunging into the deep abyss of sin. Years have filled great drifts between her and us, but they have not hidden from our sight the glory of her pure, unselfish love.

Spirit and Dignity.

The notion that it is undignified and unmanly for grown persons to participate in childish sports is absurd. There is no cause for shame in a father's being detected playing a game of "puss in the corner" with his children. It is not beneath the dignity of a true man, nor is it incompatible with his lofty views in regard to the purposes of life. Dignity has its proper place. It sits well on public men on public occasions; it becomes the statesman in the halls of Congress, and the judge in his robes; it sits well on the clergyman in his pulpit, and gives weight to the argument of the lawyer. But in the home circle, surrounded by children who delight, above all else, in "papa's fun," dignity can be well laid aside. Let mirth and freedom take its place for awhile. Not only the children, but the parents, too, are benefited by a good game of romps, and the home ties are drawn closer by this loving association of tastes.

Life is a sad thing to the sober ones. They are always brooding over some perplexing thought; always anxious; always dissatisfied; always fearful what the future may have in store for them.

The better way is so to mingle labor and recreation as to preserve the vigor of the body, the freshness of the heart and the ease of the mind. Let us indulge discriminately in amusements, whether they consist in athletic sports, in botanizing and naturalizing in the fields, or in a game at the fireside. Let us not, by unrelaxing toil, make life's pathway a weary treadmill, from which we long to be taken away into the certain rest which awaits us all in the mysterious beyond.

Mother.

[Written for the RURAL PRESS by MYRTLE.]

Yes, it is always mother. I do not think there is one person like mother. I do not think there is one person, however thoughtless, who does not sometimes think of mother—perhaps hundreds of miles away; perhaps in heaven. We cannot forget her ever gentle, loving hand, ready to do everything to make us feel contented and happy; *dear patient mother*, never once complaining. But soon, too soon, we see her failing fast; the angel of death has lain his hand heavily upon her. We do not see until it is too late, that mother needed rest. Instead of her waiting upon us, we should have waited upon ourselves and her too. Ere long the hour of parting comes, the slow mournful procession moves from the once happy cottage wending its way to the quiet churchyard, to lay our dear mother in her last resting place beside a grave we know so well—the grave of father. Alas, we do not appreciate her while she is with us; we are heedless and do not think until she is dead and gone, that she was our life and light. The troubles of the world soon fall upon our shoulders and our hearts are weighed down with sorrow, not one to love us or take us to their heart as mother did. There is no love like a mother's love.

Mason Valley, Nev.

Sensible Dresses.

EDITORS PRESS:—I took particular notice of a piece written in the RURAL PRESS of Feb. 18th, by "Jewell," which I think is the most sensible piece I have seen written for a long time in regard to woman's dress. It looks so much out of place to see a woman trying to do her work around the house with a long-tailed dress draggling after her on a washing day, wiping up the dirty wet floor. There is nothing that a woman looks so well in as a neat, plain, clean dress; and when it gets a little soiled, how much less trouble it is for her to wash and iron it than it is to wash and iron one of those fashionable dresses that so many silly women wear to-day. W. J. P.

Rocklin, Cal.

A SCOTCH minister was once busy catechising his young parishioners before the congregation, when he put the first question to a stout girl whose father kept a public house: "What is your name?" No reply. The question having been repeated, the girl replied, "Nane o' yer fun, Mr. Minister; ye ken my name weel enough. D'ye no say when ye come to our house on a night, 'Bet, bring me some ale?'"

Leaflets from the Margin of Lake Tahoe.

[Written for the RURAL PRESS by M. E. O. W.]

Such a perfect glory as this world was yesterday morning, Thursday! It snowed all day long and every one of the green trees in this forest kept the snowflakes as they fell, until they were drooping in their white robes. The sun shone out bright, and from every shrub came the cheerful voices of the sturdy little chickadees. How they do stand the cold! The mercury was 40 above zero, the windows draped with frost-lace curtains, rather prettier than it was comfortable.

To-day it is snowing again. We would bid it welcome if we knew that those who need the rain so much were getting it now. But as it is, the roads are blocked and the mail has to come in on snow-shoes. It is very hard work, the snow is so light and drifting. It would be quite a discouraging task to a less enterprising and energetic people than the lake dwellers: Those of us who live a few miles from the post-office have to wait and wait. Just now a young man came to the door to see if any mail had reached this far in the last ten days; but not a bit was here. He said, "It's kinder lonesome without the mail, ain't it?" and went right back to camp, though his was the first face seen and the first voice heard in five days.

It is surprising how diffident people become who live so isolated. A mile back from the lake the snow is so deep that the woodchoppers cannot work with any profit.

You who have always lived where you can always go into your gardens for fruit and flowers at all seasons, cannot imagine the happiness that comes with the few fruits that reach us here. A tiny box of red-ripe raspberries, grown right out doors, without a bit of shelter, came. We ate the luscious drupes and kept the box, which is fragrant yet. There were sent to us from St. Helena, Napa county, a pair of Japanese persimmons, the first we ever saw, with instructions not to taste them until they were soft. We were glad that they were hard, and hoped they would stay so forever, they were so bright and such an ornament in the study, noticed and admired by all; but in the course of two months they grew a shade darker and began to shrivel. One of the neighbors said, "Let 'em freeze and thaw before you eat 'em. They were best after they were froze in Missouri." So we put them out and let them "freeze and thaw;" then we removed the top of the shell, and there was a cup of the most delicious jelly we ever tasted.

We think every copy of the PRESS grows better and better. We are especially pleased with the new department on natural history, and hope that everyone interested in a leaf or stone will have something to say.

Castle Keep, Lake Tahoe, Feb., 1882.

Chaff.

CHINAMEN don't rock the cradle; they make the sky rocket.

A BOOK with a loose leaf should be bound over to keep the piece.

THERE is one town in Connecticut that has no fear of the measles. It's Haddam.

A RECENT African explorer, in giving an account of his travels, speaks of ants one inch long. The insects must be giants.

THERE is a whistling buoy anchored off Block Island. Oh, that all the whistling boys could be anchored in deep water far away!

"KNOW thyself" may be an excellent sort of proverb, but it's forcing a pretty tough acquaintance on some folks.

A FRENCHMAN on the point of being guillotined was asked if he had any last wish to make. The dying man's wish is held sacred. "Yes," he replied, "I wish to learn the English language."

"MOTHER," said little Ned, one morning, after having fallen out of bed, "I think I know why I fell out of bed last night. It was because I slept too near where I got in." Musing a little while, as if in doubt whether he had given the right explanation, he added, "No, that wasn't the reason; it was because I slept too near where I fell out."

WOMEN'S SHOES.—Take the most recent fashion of shoes. The heel of the human being projects outward, or rather backward, and gives steadiness to "the sure and certain step of man." But fashion has decided that the heel of the boot or shoe shall get as near the center of the instep as possible. Instead of the weight resting upon an arch, in the modern fine lady it rests upon pegs with the toes in front which have to prevent the body from toppling forward. Then the heel is so high that the foot rests upon the peg and the toes; and the gait is about as elegant as if the lady were practicing walking upon stilts. In order to poise the body on these two points a bend forward is necessitated, which is regarded as the correct attitude of the "form divine." It is needless to say that there are few ankles which can stand this strain without yielding; and it is quite common to see young ladies walking along with their ankles twisting all ways, or perhaps with the sole of their shoe or boot escaping from under the foot and the side of the heel in contact with the ground. With such modern improvements on sandals (which allow the feet perfect freedom and play) the present mademoiselle, when she attempts to run, is a spectacle at which the gods—well, not quite that, but at which her mother might well weep.—*Good Words.*

YOUNG FOLKS' COLUMN.

Science Club.—No. 5.

[All communications for this department should be addressed "RURAL PRESS Science Club," Berkeley, Cal.]

A Few Shells of the S. F. Bay Region.

EDITOR SCIENCE CLUB:—On almost any warm, cloudy day of the wet season, a visit to some of the canyons in the foothills back of Oakland, will be repaid by finding species of the genus *Helix*. In Laundry Farm canyon, especially, under large stones and piles of rubbish, in moist, but not wet spots, I have found specimens of *Helix reticulata*, *H. arrosa* (a small variety), and, perhaps, *H. infumata*. This last, however, is very scarce. In the same locality, I have also found a species of the genus *Macrocyclis*.

Just north of Shell Mound park, in a willow thicket, two species, *Helix reticulata* and *H. loricata*, are to be found, clinging to the under side of rubbish, while on the beach at this same locality, at some seasons of the year, there are immense numbers of *Macoma inconspicua*, a pretty little pink bivalve.

At extreme low tide near Oakland wharf, *Cardium corbis* and *Macoma nasuta* can be found in the mud, while the piles, in places, are almost covered with *Mytilus edulis*.

Around the shores of Lake Merritt, on the mud, are quantities of *Cerithidea sacrata*, and on the Alameda marsh, clinging to the under side of drift wood, are two minute species, *Assiminea californica* and *Alexia setifer*. The last two require patient hunting, especially as they resemble the wood in color.

There are a few fresh-water shells in the streams near Oakland, but the number, both of specimens and species, is not to be compared with that in Mountain lake, near the Marine hospital, S. F. The best time to visit this place is at low water. On the bed of the lake, there are numbers of *Anadonato oregonensis*. On the mud near the shore, or swimming upside down on the surface, or clinging to the under side of water plants, there are two *Physas*, and several other species of spiral fresh-water shells.

On the way across the hills to Fort Point, digging around the roots of dry brush will generally be rewarded by some fine specimens of *Helix reticulata*.

Pupa californica and *Hyalina conspecta* are found collected on dry brush near the Presidio. The time for these is the dry season.

Walking along the beach toward the fort, specimens of *Tapes staminea* and *Cardium corbis* may possibly be met with. At low tide, on the rocks beyond the fort, I have found seven species of the Chiton family, besides 12 or 15 other species of marine shells. The Chitons, on being taken from the rocks, should be immediately bound to a flat stick by a strip of cloth. After a day or two they may be removed, cleaned and rebound. They should then be left until entirely dry.

If we wish to take a longer excursion, at Bolinas bay, on the Duxbury reef, a hammer used where perforations of the rock are seen, will probably bring to light specimens of the rock-borer family, or specimens of boring mussels.

For sea-side researches, an extreme low tide is necessary to success. The months of April and May are best for many species, which then come up from deep water. It is best to place small spiral shells which have *opercula* in a dry place, and let them remain until the soft parts have dried, when no offensive odor will be noticed. For the other species, a hot-water bath of 10 or 15 minutes loosens the soft parts so that they can be removed by a bent pin. Small tin or paper boxes are needed for the larger, and glass vials for the minute species of land shells. For the fresh-water shells, larger boxes are required, as the shells are usually met with in large numbers.

I shall be glad to correspond with collectors, both for the purpose of exchanging and for learning new spots where new shells may be found, either in this region, or elsewhere.

W. J. RAYMOND.

P. O. Box, 193, Oakland, Cal.

Remarks

The local distribution of species is not only interesting, but very important. We hope some day to see recorded a list of all the species and variations peculiar to every school district and beach of our coast. Here is a wide, wide field for research.

H. B. Everett, Sweetland, Nevada county, sends a small box of specimens to be named: No. 1 is pyrite; No. 2, quartz and pyrite; No. 3, hornstone, a thin veinlet; No. 4, hornstone, variation of quartz; No. 5, magnetic pyrite; No. 6, quartz, with a little oxide of iron and manganese.

He also writes: "Do you know of any good book for beginners to study in mineralogy? For young beginners, a "Mineralogy," by Collins, we would prefer; it is used in some of our high schools. But we know of nothing better than the new edition of Dana's "Manual of Mineralogy and Lithology;" it is both readable and interesting, and, all things considered, our best elementary text-book. Some valuable lessons may be learned in one of those assay offices attached to many of our larger stamp mills. A week's study under a practical mineralogist is worth a year's poring over books. Determinative mineralogy is so closely allied to chemistry that a knowledge of the latter is necessary.

Just as we give the manuscript to the PRESS, a letter comes from a kind elderly lady, a paragraph of which we append: "If I remember rightly, you gave the old folks an invitation to join the Young Folks' Science Club. Your story of the "Petrified Fern" is a treasure. I am so glad I can see to read. I send you a tiny package of carnelian stones from Lake Tahoe, near which I live," etc. "About 15 years ago we cut that poem out of an old newspaper, and laid it away in the old family Bible. Now we do not wish you to infer that we have not read the Bible in the meantime, as we found it lately by accident. But the moral we wish to inculcate is the Spanish proverb, 'Keep an article seven years and a use may be found for it.'"

Several exchanges are waiting to be inserted, but we are afraid the editor is shaking his head at the length of this column.

GOOD HEALTH.

How to Apply the Soda Remedy in Burns and Scalds.

It is now many years ago (see the London *Medical Gazette* of March, 1844) that the author of this paper, while engaged in some investigations as to the qualities and effects of the alkalies in inflammations of the skin, etc., was fortunate enough to discover that a saline lotion, or *saturated* solution of the bicarbonated soda in either plain water or camphorated water, if applied speedily, or as soon as possible, to a burned or scalded part, was most effectual in immediately relieving the acute burning pain; and, when the burn was only superficial, or not severe, removing all pain in the course of a very short time; having also the very great advantage of cleanliness, and, if applied at once, of preventing the usual consequences—a painful blistering of the skin, separation of the epidermis, and, perhaps, more or less of suppuration.

For this purpose, all that is necessary is to cut a piece of lint, or old soft rag, or even thick blotting paper, of a size sufficient to cover the burned or scalded parts, and to keep it constantly well wetted with the sodaic lotion so as to prevent its drying. By this means, it usually happens that all pain ceases in from a quarter to half an hour, or even in much less time.

When the main part of a limb, such as the hand and forearm, or the foot and leg, has been burned, it is best, when practicable, to plunge the part at once into a jug, or pail, or other convenient vessel filled with the soda lotion, and keep it there until the pain subsides; or the limb may be swathed or encircled with a surgeon's cotton bandage previously soaked in the *saturated* solution, and kept constantly wetted with it, the relief being usually immediate, provided the solution be saturated and cold.

What is now usually sold as bicarbonate of soda is what I have commonly used and recommended; although this is well known to vary much in quality, according to where it is manufactured—but it will be found to answer the purpose, although, probably, Howard's is most to be depended on, the common carbonate being too caustic. It is believed that a large proportion of medical practitioners are still unaware of the remarkable qualities of this easily-applied remedy, which recommends itself for obvious reasons.—*Popular Science Month'y.*

Action of Coffee and Sugar in Digestion.

M. Leuen makes a report before the Paris Biological Society of the effects of these articles of food, in connection with Dr. Semerie. There is great diversity of opinion on these subjects. Some, as Trousseau and Pidoux, consider coffee an excellent digestive. Others, on the contrary, consider it very injurious.

M. Leuen thus writes: He mixed 30 grams of coffee in 150 grams of water, for a dog, which is killed three hours after. The mucous membrane of the stomach is found pale, discolored and profoundly anæmic. The vessels on the internal surface, as well as those in the periphery, are contracted. There remains 145 grams of the mixture undigested, and the stomach digestion diminished, because the contraction of the vessels, and the consequent anæmic condition of the mucous membrane, prevent the secretion of the gastric juice. The abuse of coffee will produce dyspepsia. Thus the English and the Dutch, who drink freely both of tea and coffee, are very dyspeptic. Coffee increases the cerebral functions, an effect useful, agreeable and innocuous.

Sugar has been denounced by modern chemists as a substance whose effects on dyspeptics are deplorable.

Dr. Leuen does not partake of these fears. He cites the case of a dyspeptic doctor, who for 20 years had a terror of sugar, but who now consumes 120 grams (3¾ ozs.) of sugar daily, without inconvenience. He followed similar experiments with sugar. A dog ate 80 grains of sugar with 200 of other food. Six hours afterward its stomach showed little food. The mucous lining of the stomach was red and highly congested. The congestion of the liver was notable. If one opens an animal after eating 200 grains of food and no sugar, 90 to 100 grams of food is undigested. Sugar, then, favors the secretion of the gastric juice. Coffee sweetened loses part of its defects.—*Le Medecin Practicien.*

DOMESTIC ECONOMY.

BOILED FOWL WITH MACARONI.—Break twelve sticks of macaroni in pieces about two inches long; throw them into one quart of boiling water; add salt and pepper; boil rapidly for twelve minutes, then take up and drain off the water; season with one tablespoonful of butter, and add more salt if necessary. After the fowl have been singed and cleaned, stuff with the macaroni; truss them, and then pin in a floured cloth and plunge into enough boiling water to cover them. Boil rapidly for fifteen minutes; then set back where they will just simmer for from one and a half to two and a half hours. The time of cooking depends upon the age of the birds. Serve with an egg or a Bechamel sauce. The quantity of macaroni given is for two fowl. Plain boiled macaroni should be served with this dish.

ROYAL CORN BREAD.—Make a pint of batter of two-thirds nice corn meal and one-third coarse flour stirred in water; let it stand in a warm place until it ferments well; then add warm water, two or three spoonfuls of molasses, a teaspoonful of salt and a teaspoonful of soda (or enough to correct the acidity), then thicken with corn meal and coarse flour, in the same proportion as at first, making the batter about the same consistency as for griddle cakes; oil your baking dish and fill about half full, always have about a pint of the batter to start with again. Place the loaf in a steamer and steam it two hours for a two-quart loaf, and bake it in the oven about thirty minutes to brown it. The same recipe may be used for griddle cakes.

LEMON FLOAT.—Boil one quart of sweet milk and three tablespoonfuls of sugar, and mix with it one tablespoonful of corn starch, stirred smoothly, and the grated peel of one lemon. When it has boiled ten minutes, add the yelks of three eggs well beaten, and stir constantly for five minutes. Put the pail it was cooked in directly into a pail of cold water, and stir it some time; then strain it into a pudding dish. Beat the whites of the eggs to a very stiff froth; add the juice of the lemon and two tablespoonfuls of sugar. Put them over the pudding and serve ice cold. Desiccated or fresh cocoanut grated finely can be added to the whites of the eggs, and will improve the dish very much.

LEMON PIES.—Moisten three tablespoonfuls of corn starch with cold water, then pour boiling water on it gradually until it is of the consistency of and as clear as prepared starch. While this is cooling, prepare the juice and grated peel of three lemons, two cups of sugar and the well-beaten yelks of four eggs. Mix with the partially cooled corn starch, and pour into three pie dishes previously lined with pastry. Bake about half an hour, then cover with meringue, prepared by beating the whites of four eggs to a stiff froth, and three tablespoonfuls of powdered sugar. Return the pies to the oven until the meringue turns to a light yellow, which requires a very short time. To be eaten cold.

MACARONI.—Macaroni makes an excellent variety in the scarcity of vegetables, and should be much better known and more used by the masses here. It is the staple food of the common people of Italy—indeed of most classes. It is made of strongly glutenous wheat flour; hence, is flesh-forming, while its starch supplies heat. It may be cooked tender in boiling water, seasoned with salt and eaten with or without cream sauce, or milk or butter. After boiling, it can be put in a pudding dish with about a quarter its weight of grated cheese sprinkled over it, and lightly baked. The addition of cheese makes this diet about equal to lean meat as a flesh former.

SUET PUDDING.—One cup of milk, two of suet (scanted) chopped fine, three of flour, one cup of seeded raisins (chop part of them), one teaspoonful of cloves, one of cinnamon, a little nutmeg, one teaspoonful of soda. Steam three hours. The longer they are cooked the better they are. Sauce—One cup of sugar, one-half cup of butter, one egg beaten to a stiff froth, one-half cup of boiling wine.

STEAMED PUDDING.—One cup of sweet milk, two eggs, two tablespoonfuls of melted butter, one-half cup of sugar, one pint of flour, two teaspoonfuls of baking powder. Steam one-half hour. It is nice with a cup of raisins added to it.

SNOW CAKE.—One and one-half cups of powdered sugar, one cup of flour, whites of eight eggs, three-fourths of a teaspoonful of cream-of-tartar. This is just as good as the "Angel's Food" so much spoken about lately, and much less troublesome.

STEAMED CORN BREAD.—Three cups of corn meal, one cup of flour, two cups of sweet milk, one cup of sour milk, one cup of molasses, one teaspoonful of soda, a little salt. Steam three hours and bake one-half hour.

CREAM PIE.—Half a pound of butter, four eggs, sugar, salt and nutmeg to your taste, and two tablespoonfuls of arrowroot, wet; pour on it a pint of boiling milk and stir the whole together. To be baked in deep dishes.

DELICATE CAKE.—Whites of three eggs, one cup of sugar, one-third of a cup of butter, one and one-half cups of flour, one-half cup of milk, two teaspoonfuls of baking powder.

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TABLE OF CONTENTS.

EDITORIALS.—New Berries; The Citrus Fairs, 189. The Week; Lima Bean Growing; The Rains; The Sunday Law, 196.
ILLUSTRATIONS.—A Group of New Berries, 189.
CORRESPONDENCE.—Up Coast Notes; Debris and the Lower Sacramento Valley, 190. Commercial Reveries, 193.
HORTICULTURE.—The Other Side, 190.
SERICULTURE.—The Silkworm—Its Education and Reproduction, 191.
PATRONS OF HUSBANDRY.—The Department of Agriculture; Who Represent the People; Touchingly Strange; J. W. Moore; Stockton Grange Reunion, 192.
AGRICULTURAL NOTES, from the various Counties of California, 192-3.
HOME CIRCLE.—After Dark, (poetry); John's Little Joke; The Old-Fashioned Mother; Spirit and Dignity; Mother; Sensible Dresses, 194. Leaflets from the Margin of Lake Tahoe; Chaff, 195.
YOUNG FOLKS' COLUMN.—Science Club, No. 5, 195.
GOOD HEALTH.—How to Apply the Soda Remedy in Burns and Scalds; Action of Coffee and Sugar in Digestion, 195.
DOMESTIC ECONOMY.—Boiled Fowl with Macaroni; Royal Corn Bread; Lemon Float; Lemon Pies; Macaroni; Suet Pudding, 195.
QUERIES AND REPLIES.—The Enemies of the Hop Plant, 196.
THE STABLE.—Horse Breeding in California, 200.
SHEEP AND WOOL.—The Vermont Breeders and their Work, 200.
NEWS IN BRIEF on page 193 and other pages.

Business Announcements.

Champion Reaper and Mower, Baker & Hamilton, S. F.
Harvesting Machines, Frank Bros., S. F.
Harrows, Jackson & Truman, S. F.
McCormick Harvesting Machine Co., N. E. Barnes, S. F.
Lift and Suction Pump, F. A. Ruhl, Stockton, Cal.
Elkhart Carriage Manufactory, W. R. Pratt, Elkhart, Ind.
Pacific Coast Land Bureau, S. F.
Triple-acting Irrigating Pump, F. W. Krogh, S. F.
Petaluma Incubator, I. L. Dias, Petaluma, Cal.
Real Estate Sale, J. Wm. Buob, Black's Station, Cal.
Save Money, Montgomery Ward & Co., Chicago, Ill.
Toulouse Geese, T. D. Morris, Sonoma, Cal.
Horses and Cattle, B. F. Fish, Santa Clara, Cal.
Durham Cattle—Sylvester Scott, Cloverdale, Cal.
Pacific Business College—S. F.
Farm Implements—Wheeler Melick Co., Albany, N. Y.
Short Horns for Sale—Moses Wick, Oroville, Cal.
California Roses—W. A. J. Stratton, Petaluma, Cal.
Widney's Transplanter—R. M. Widney, Los Angeles, Cal.
Colton Hose—W. T. Schenck, S. F.
Farming Land—McAfee Bros., S. F.

The Week.

The rains have come at last in most copious quantities and over great areas. The whole State has been drenched, and the prospects for satisfactory yields of produce have been brightened almost to the gleam of surety. We have not borne all these chilling winds and sharp frosts for nothing, for now certainly must come the period of growth—the carpeted pasture, the sturdy grain and the gorgeous display of flowers over the broad valleys and upon the hillsides.

The present season is another lesson of trust for Californians, like many which have gone before. With the elements, as with men, there is hope in activity, even if early efforts be apparently futile. Nothing is more suspicious than a calm. A period of summer warmth with balmy air and mellow sky thrown into the winter months is dangerous. The driving wind and the frosts, in fact all the general symptoms of discontent in nature, are hopeful indications that the disturbance will end in a downfall. Thus the disagreeable season we have endured may be but the price of summer's plenty and a rounded year of comfort. This, at least, passing events seem to declare.

Lima Bean Growing.

The growth of Lima beans for export is one of the several interesting minor industries which are bringing comfort and competence to our people whose lands are adapted to these special cultures. It is a very good thing to develop these specialties of farming, and when one sets out to secure accurate information concerning them, he is doing a public service. Such a work has just been discharged by Dr. R. Caugh, a resident of Carpinteria, who has collected accurate information of the actual production of Lima beans in that district of Santa Barbara, from which one can learn the yield per acre and the amount realized for the product. We shall append the chief part of Dr. Caugh's report as published in the Santa Barbara *Press:*

This is a banner valley for raising the Lima bean, the climate and soil are particularly adapted to this crop. The average yield is larger than any other section where the Lima is raised, and as the area is limited where they can be raised to perfection in paying quantities, that fact also enhances the value of the land. Another consideration is that it costs less to raise and market Lima beans than it does the same weight of corn. I have endeavored to confine myself to facts, leaving out mere speculations. The number of acres raised, I have obtained from the farmers themselves, as also the prices received for (with two exceptions), last year's crop. The number of pounds sold does not include the whole yield realized from the land, for all farmers save seed for the next season's crop and also for other purposes. I designed to give a fuller report, but can give only a small part of what was raised. In fact, many of our largest farmers are not included, as some have not sold their crop, while others have not delivered theirs yet. Neither have a few been selected, for the sake of making a favorable showing, but they are taken at random from various parts of the valley. But enough are given to show the yield and the returns in solid coin.

The difference in price does not depend upon the quality of the beans, but on the time of selling. Many of the farmers contracted their whole crop before the harvest, at a very low figure, and hence at a serious loss to themselves. The difference in yield is owing to various reasons, such as a thorough cultivation of the land at the proper time. Some had a better stand than others, and there is a difference too in the quality of the soil; the lower lands, as a rule, yielding the best.

I am under obligations to J. M. Smith, who has kindly furnished me with the actual number of pounds sold by each party, from duplicate warehouse receipts.

By Whom Raised.	No. of Acres.	No. lbs Sold.	Price per lb.	Amount Realized.
Butler, James†	22	18,399	4 c	$ 735.96
Callis, Wm	20	10,576	5	2,043.80
Callis, Thomas	17	23,405	4	1,176.20
Cauch, Dr. R	7½	13,396	6	803.46
Cravens, Thomas	38	.....	.....	.....
Knapp, Eugene	30	51,682	2½	1,292.05
Lieb, C	16	22,563	5½	1 240.96
Lewis, J. S	17½	37,404	4½	1 683.18
Martin, Andrew	25	45,080	5	2,254.00
Moncton, Henry	5	3,248	5	312.40
Moss, Wm. C	14	22,306	4¾	1,059.52
Moore & Webb	18	31,219	6	1,873.14
Ogan, James	22	35,812	4	1,433.68
Pierce, E. H	12	13,027	5½	716.48
Pinney and Son	14	18,670	5	933.50
Richardson, Chas †	12	12 861	4¾	610.89
McLean, G. T	2½	2,745	6	164.70
Kahl, Henry	2	2 816	5¾	161.92
Jennings, E. H	10	12 208	5¾	701.96
Thurmond, J. R	9	12,000	4½	540.00
Thurmond, G. E	5	6,000	6	360.00
Talley, Ed	5	4 800	4¾	228.00
Wride, George	22	30,500	2½	.....
Way, W. A	18	23,371	5	1,168.55
Whitford, D. M	25	32,454	5	1,622.75
Smith, J. M‡	18	34 280	6	.....
Wilcox, Wm.	6	11,890	5¾	683.66
Wormstead, H	30	41,131	6	2,467.87
Bailard, Lawrence	15	24,584	5½	1,352.16
Bluel & Keeler ††	25	39,101	5¼	2,052.82

† Two-thirds of the crop.
†† Over a ton reserved for seed.
* Foothill land.
‡ Only part of the crop sold.

It will be but a few years before the land in this valley will be subdivided into small tracts of from 5 to 15 acres, and sold to parties who wish to make permanent homes on account of climate and other advantages not to be had elsewhere. This is already being done, and many are rejoicing in their five and ten-acre orchards and little homesteads. Corn, wheat, barley, flax, etc., can be raised, but beans are mainly raised, because they pay the best.

I must not forget to state that irrigation is not required to raise the best crops, unless we have a dry year, which occurs occasionally. The average annual rainfall for the past 14 years being 16.19 inches, that amount is ample for any crop. During the above period there have been two dry years, that of 1870–71, when only 8 91 inches of rain fell, and 1876–77, when only 4.49 fell. I know our beautiful valley is not without its disadvantages, and a dry year is one of them.

THE Iowa Senate requests the Attorney-General of the United States to bring suits against the barb-wire patent holders.

The Rains.

The most satisfactory item of the season is in progress as we write. The following dispatches show that the water has fallen where most needed:

Los Angeles, March 14.—The weather continues showery, with an east wind. The farmers feel assured of good crops in view of the heavy rain of this week.

Merced, March 14.—Since 8 A. M. 1.25 inches of rain have fallen. The creeks are all running full, and the plains are covered with water. The best crop for many years is expected. It is still storming.

Salinas, March 14.—It still continues to rain, with no immediate prospect of abatement. The reports from the whole valley are most cheering regarding crop prospects. The fall in the last 24 hours was 1.16 inches, and the total for the season is 10 inches. The Salinas river has risen so much that it cannot be forded, and ferries have to transport teams and passengers.

Sacramento, March 14.—It has rained steadily all day, and the fall to noon was .76 of an inch. Dispatches from points along the line of the Oregon division show that the rainfall during the 24 hours ending at 8 o'clock this morning averaged about a quarter of an inch, and it is still raining at all places between Sacramento and Redding. At Biggs .52 of an inch fell during that time. On the California Pacific and Northern roads the fall was something over a quarter of an inch also.

Hollister, March 14.—To-day's rainfall is .97 of an inch, and for this storm 2.43 inches. Good crops are now assured. Stock is doing well.

Santa Barbara, March 14.—It has continued to rain unceasingly all day. The amount of rainfall now reaches 12.50 inches. It is still raining; the wind is from the southeast, and it looks as though the rain would last several days longer.

San Diego, March 14.—Rain has fallen for the last 24 hours, making .68 of an inch for the storm. A southerly gale still continues and rain is falling.

San Jose, March 14.—Rain fell here steadily last night and to-day. The creeks have risen 4 ft. This is the first time sufficient water has fallen to materially affect the streams.

Gilroy, March 14.—Eleven inches of rain have fallen for the season, and it is still pouring, with prospects of a flood.

Petaluma, March 14.—A fine rain has visited this section within the past three days. The light, warm, almost continuous rain wet the ground to a depth that insures crops in this section. An unusually large acreage has been sown, and grain never looked better at this season of the year.

Visalia, March 14.—It rained hard last night and has been raining steadily to-day—a warm rain which will probably melt the mountain snow and flood the streams. It is still raining.

Oakland, March 14.—The total rainfall in Oakland for the season of 1882 to noon of March 14th, is 15.07 inches. The amount of rain that has fallen during the present storm is 1.68 inches.

The Sunday Law.

The Supreme Court has decided the Sunday law to be constitutional, and the Chief of Police of San Francisco has ordered the Captains to authorize officers to arrest all persons violating it. It is therefore an established misdemeanor to conduct business prohibited in Section 299, Chapter VII, of the Penal Code. The only way of escaping punishment for violation of the law is by the favor of a petty jury.

There is no doubt there will be a great number of trials and contests before the courts, and as it is well for people to know exactly what the law is, we therefore give the full text, as follows:

Sec. 299. Every person who, on the Christian Sabbath, gets up, exhibits, opens or maintains, or aids in getting up, exhibiting, opening or maintaining any bull, bear, cock or prize fight, horse race, circus, gambling house or saloon, or any barbarous and noisy amusement, or who keeps, conducts or exhibits any theater, melodeon, dance cellar, or other place of musical, theatrical or operatic performance, spectacle, or representation where any wines, liquors or intoxicating drinks are bought, sold, used, drank, or given away, or who purchases any ticket of admission, or directly or indirectly pays any admission fee to or for the purpose of witnessing or attending any such place of amusement, spectacle, performance or representation is guilty of a misdemeanor.

Sec. 300. Every person who keeps open on Sunday any store, workshop, bar, saloon, banking house, or other place of business, for the purpose of transacting business therein, is punishable by a fine not less than $5 or more than $50.

Sec. 301. The provisions of the preceding section do not apply to persons who, on Sunday, keep open hotels, boarding-houses, barber shops, baths, markets, restaurants, taverns, livery stables, or retail drug stores, for the legitimate business of each, or such manufacturing establishments as are usually kept in continued operation.

THE Atchison, Topeka and Santa Fe Railroad Company has taken off the guards heretofore running on its trains in New Mexico.

QUERIES AND REPLIES.

The Enemies of the Hop Plant.

EDITORS PRESS:—In your issue of Feb. 25th appears an inquiry in regard to the enemies of the hop plant, and an answer, as far as known of it in the Eastern States and Europe. I am very glad to see that your correspondent from Ukiah takes such an interest in the crop that he cultivates. While we have been thus far comparatively free from all enemies of the hop plant, it is not known at what day or how they may come upon us like the plagues of Egypt.

The horticulturists, until the last three or four years, were congratulating themselves how free from enemies were the fruits of this coast; but at a time when little expected the enemy came upon them, their fruit was punctured as with a gimlet, and 50% of whole orchards were made unmarketable. When the worm made its appearance in an orchard two miles from my place, I paid but little attention to it, thinking it a mere local freak, not discovering anything wrong with mine. Next year, when I discovered that about every other one of my pears had been taken as a local habitation by these worms, I made up my mind that it was only a matter of time when we would be troubled with all the pests that our Eastern brethren are, in their fruits, flowers and shrubs.

On account of absence of rains at the maturity, and securing of the hop crop, I do not apprehend any danger from the hop louse or mold in California. But farther north, say Oregon and Washington Territory, where they have early rains, fogs and frosts, I think it merely a matter of time when they will be subject to all the drawbacks in the culture of hops of the Eastern grower. If our hop is attacked at all I think it will be at the root.

The most serious thing I know of now is a large white grub worm, from one to three inches long, with red head and powerful jaws.

The worm is not very fastidious in regard to his diet, for he apparently goes up and down and through a dry hop-pole with the same relish that he bores the heart out of a juicy hop root. This worm has no legs, limbs, or wings, but moves about by the contraction and expansion of a series of muscular rings. Whence he comes or whither he goes I know not, but the next healthy subject I capture I will take to Professor Cooke, the noted bugologist, and I am sure he will give his history, and point out to us the method of his destruction. This worm resents any infringement on his domestic habits, and to show his power of grip, with his jaws, which lie horizontal: If a polished blade of a knife be inserted between his nippers, he will grasp the blade with such force that he may be carried around and shaken without letting go of his grip. When I find one at work in a hop root, dig it out, and destroy the worm and reset the hill with new roots.

The other worm is a gray one, from three-fourths to one and one-half inches long, and is usually called the potato worm. He lives close to the surface and near the vine, and does his work of destruction by climbing the hop pole at night and biting off the tender shoots of the vine. Thus far, he has not done much damage, for he has been content to work at the end of the vine, and the hop being such a thrifty grower and provided by nature against just such attacks, has the power to throw out more vines at the next joint below, and will send up two vines to take the place and bear the crop for the one destroyed.

I have seen something a number of times that I supposed killed the roots in a new yard, but was never fully satisfied what it was. I intend to make a thorough examination this year of new yards where the roots do not come, to see what is the cause.

My attention has been called once or twice to a hop where the lupuline and seed had been ground to a powder. I saw no insect, and have no idea what caused it.

Occasionally, in a hop yard, the leaves of a hop vine will look yellow, and on close examination they will appear transparent; that is, all eaten away but the framework. This, of course, works an injury to the hop, as the leaves are a necessary adjunct to procure the moisture from the atmosphere to assist the growth and maturity of the hop.

One of the most serious things that a hop grower has to contend against in this valley is the rust on the hop. The leaves will turn red, sometimes from the friction against another vine, and sometimes apparently without cause. In the last part of the harvest, if there should come up a sudden blow or slight rain, in 24 hours one-quarter of the yard is liable to turn rusty; and if put with the rest of the hops will make second or third grade of the entire lot.

I intend to keep a sharp lookout for the approaching enemy, and if I find any skirmishing about my yards, I will have them taken before Prof. Cooke for his examination.

As the editor of the PRESS has generously offered its columns for the comparison of notes of the hop growers, I hope they will avail themselves of his offer, and if anyone has experience in regard to any of these threatening foes that they will give us the benefit of their research.

If any hop grower, on finding something wrong with his roots or vines, will send me a sample and description, I will have it investigated and report thereon through the PRESS.—DANIEL FLINT, Sacramento, Cal.

Fruit Growing in Southern California.

The Varieties which Succeed in the Different Counties.

Letters from Leading Fruit Growers.

Pertinent to the great horticultural occasion of southern California, to wit, the holding of the citrus fair at Riverside, we give below a large collection of new data concerning the success of different fruits, drawn from unpublished correspondence of the State Horticultural Society. For the present purpose we make an arbitrary division of the State, and include in southern California all the counties south of the 37th parallel of latitude. It will appear that the writers below are among the leading fruit growers in each of the counties named:

Monterey County.

E. Berwick, Carmel Valley.

Apples.—The kinds which have yielded most satisfactorily are Early Harvest and Red Astracan, Smith's Cider, Rhode Island Greening, White Winter Pearmain and Yellow Newton Pippin. Soil, sandy loam.

Pears.—The Bartlett does excellently. The Louis Bon de Jersey, Easter Beurre are good, and Winter Nelis does well some seasons. The Bartlett pays best for shipping. Soil, sandy loam.

Peaches.—Hale's Early is perhaps my best early peach. All peaches curl more or less in "curl season."

Plums.—All plums do well. Soil, sandy loam and bitumenous shale drift. The Petite Prune d'Agen and large German prune are grown.

Berries.—The Lawton is the best blackberry. Longworth's Prolific and Jucunda are our best strawberries.

Nuts.—Almonds are not satisfactory.

Cherries.—We irrigate cherries when setting fruit and when the fruit is swelling; otherwise it drops off.

Remarks.—Carmel valley seems well adapted to apple, pear, plum and cherry trees. Peach trees near the coast are not a success; away from the sea they bear fair crops in favorable seasons. An orchard of pear trees on the coast, planted by the Mission fathers, bears abundantly, but the fruit is of an inferior variety. Our main foes at present are the gopher and the scale insect. A small woodpecker or sap-sucker sometimes makes a spiral succession of punctures round apple trees. I cannot really say what kinds do best, as my trees are mostly too young to judge by. Apricots seem to flourish exceedingly here. Would like to give more decided report.

San Luis Obispo.

J. P. Andrews, San Luis Obispo.

Apples.—Gloria Mundi and Yellow Bellfleur are best early apples. All winter varieties seem to do well, especially White Winter Pearmain. Heavy bottom soil.

Pears.—Pears do well, especially Bartlett and Seckel.

Peaches.—The early varieties of peaches do best. Soil, upland, chalky.

Plums.—All plums do well. Soil, rich bottom land.

Apricots.—Generally succeed.

Cherries.—Cherries are not a success in this region.

Currants and Berries.—All small fruits which have been tried do well.

Nuts.—Almonds, walnuts and chestnuts do well so far as tried.

Citrus Fruits.—The orange, lemon and olive do well here.

Figs.—Figs ripen late and are not so satisfactory.

Irrigation.—We irrigate berries, lemons and oranges.

Remarks.—Nearly all varieties of fruits do well in this locality. Grapes grow well. The Mission variety is the greatest success in point of yield.

James Kay Vernon, San Luis Obispo.

Apples.—All kinds of aples do well here, excepting that east of the Coast Range the sun is apt to burn the bark when the tree is not grown with the limbs low so as to protect the trunk. As a rule, apples do best on a strong loamy soil.

Pears.—All kinds do well. The best shipping pears are Bartlett and Easter Beurre, especially the latter. The trees are mostly on low or "monte" lands.

Peaches.—Peaches do well if planted on warm, high lands. Briggs' Red May, George the Fourth and President curl least. The seedlings, which were mostly planted by the native Californians, curl badly.

Plums—All kinds of plums and prunes do remarkably well—but, perhaps, best in the foothills.

Apricots—All the apricots do well, especially Moorpark and Royal, and the Hemskirke is best of all.

Nectarines—Nectarines do well here, although they are planted in but few localities.

Cherries—Cherries do not seem to do well, except about Paso Robles—east of the Coast range.

Currants—Currants have never been properly grown, except in a very few instances. Then they do well, but nothing extra. The White Grape and Cherry currant have done best.

Gooseberries—Gooseberries only do well when the ground is mulched, and bushes well grown are almost unknown. I have a few Crownbob and Whitesmith which do well.

Berries—All kinds of blackberries do well when well treated—Lawton and Kittatinny best. Raspberries ditto. Philadelphia and Turner Red do best for me. All the black cap varieties seem to fail. All strawberries do well, but chiefly the Wilson, Longworth's Prolific, and Capt. Jack.

Almonds—Almonds are grown in a few localities. The best I have seen are near the coast, when planted at a high altitude.

Citrus Fruits—The orange and lemon do well in a few favored localities.

Olive—The olive does well at the old Mission, the only place where grown.

Fig—The fig does well if out of the frost belt.

Irrigation—Fruit trees on the coast side of this county do not require irrigation.

Remarks.—From five years residence here in this county, I have come to the conclusion that nearly all kinds of fruit will do well here if properly grown, and due regard paid to the locality chosen. It is only within the past few years that orchards have been planted by the American people. Some very old fruit trees are growing here that were planted by the Californians, and their orchards are nearly all where water can be run upon the ground, which is really a damage to the trees; what fruit trees need in this county, is cultivation, not irrigation. The almond, when planted high up, and when not exposed to the raking coast winds, is a complete success. I know of a few trees, in some different localities, that are loaded every year.

A. M. Hardie, Cayucos.

Apples—The Early Harvest and Yellow Newton Pippin do best.

Pears—The Madeline is my best early pear.

Peaches—Late peaches are all small, dry, and tasteless. The soil is sandy loam, about 10 inches deep on an adobe bottom.

Small Fruits—Red currants do well. Gooseberries are not a success. Blackberries and raspberries I have not tried. All strawberries do well. I have fruit every week in the year.

Other Fruits—Oranges grow well, and there is no frost to hurt them. The trees are too young to bear. Olives and figs do well.

Irrigation—No irrigation.

Remarks—Most of my trees, and nearly all the trees in this neighborhood, are too young yet to be able to make any report on. I have the only bearing trees there are on this creek. They bear well, and the fruit is all a fair size and good flavor. My location is three miles from the coast. The soil is a sandy loam on a heavy adobe.

Remarks—Apples of all varieties appear to do well here, are very healthy; have never seen a borer or codlin moth here. Plums and pears do only moderately well. Peaches only moderately, most too close to the ocean, only about three and one-half miles. Blackberries and currants will do well, but they are only cultivated on a very small scale as yet.

A. J. Mothersead, Moro.

Apples.—Early apples do moderately well, fall apples very well and winter apples best of all. I have 26 varieties. The soil is black and stiff, almost adobe.

Pears.—Pears do very well, the fall varieties are most satisfactory, Winter Nelis does well, the trees are on a black, gravely soil.

Peaches.—Early York is the best early. Late freestone varieties do not do well. Late clingstone do tolerably well. None are entirely free from curl. Early York and Early Crawford curl least.

Plums—Of early plums the Imperial Gage is best and Jefferson next. Late plums do only tolerably well.

Small Fruits—I have the small American gooseberry. It does not do well. The Lawton blackberry is just beginning to bear and is promising.

Almonds—Almonds do not bear satisfactorily.

Citrus Fruit—I have orange trees growing, but the scale and black mold affect them badly.

Figs—Figs do very well.

Irrigation—No Irrigation.

Santa Barbara.

Joseph Sexton, Goleta.

Apples—Best early apples: Early Harvest, Red June, Red Astracan. Best fall apples: Fall Pippin, Rambo, Grovenstein. Best winter apples: Yellow Bellefleur, R. I. Greening, W. W. Pearmain, Yellow Newtown Pippin. Soil deep, sandy.

Pears—Best early pears: Madeline, Bartlett. Best fall pears: Flemish Beauty. Best winter: Winter Nelis.

Peaches—Early freestone varieties: Early Tillotson, Early Crawford. Best late freestone: Solway. Best late clingstone: Lemon Cling. Early Crawford and Lemon Cling curl least. Soil deep, sandy.

Plums—Plums do very poorly in this section and there are but few that are worth cultivating, as follows: Cherry plum, Green Gage and Red Egg. Soil, sandy.

Apricots—The best are the Large Early, Royal, Peach, and Blenheim.

Nectarines—The Downton is best.

Blackberries—Dorchester and Lawton are best.

Almonds—Almonds do not bear well.

English Walnuts—English walnuts bear satisfactory crops.

Citrus Fruits—Oranges do well. The lemon is also satisfactory. Sicily seedlings are preferred.

Olive—The olive does well here.

Figs—All figs fruit well.

Irrigation—I do not irrigate.

Remarks—The cherries do not fruit well in this section. They did fruit this year, but I think it will be so seldom that they are not worth cultivation. Currants and gooseberries do not fruit. The wild gooseberries thrive well. Plums and prunes generally grow slowly and fruit poorly. Some varieties of prunes have fruited nicely this year, but it is a question of time if they will keep it up. This county is new yet in the fruit industry, and we may find varieties that will do here that are worthless above. The apricot will do here and be more profitable than the plum and prune. They bear better and the trees are much more rapid growers. Each locality should raise what does best, and but few can grow all to perfection.

O. N. Caldwell, Carpinteria.

Apples.—Best early: Red Astracan, Yellow Harvest. Best fall: Yellow Bellefleur, Fall Pippin. Best winter: White Winter Pearmain, Newtown Pippin. The soil is mostly a rich loam, with more or less sand.

Pears.—The Madeline appears to be the best early pear, but it is not as good as we like. The tree is a fine grower. The Flemish Beauty is a fine fruit. The tree grows well and is very productive. It is the best fall pear we have. The Winter Nelis is our best winter pear, and is best for shipping. The tree grows finely and fruits well. Soil, rich sandy loam, mostly.

Peaches.—The Crawford peaches do best so far. The early peaches are not very free; not as free as farther north. That is my experience. The Crawford family is freest from "curl."

Plums.—The Prince of Wales is the best plum, but my experience with the plum has not, as a whole, been satisfactory. I have no experience with prunes.

Apricots.—The Royal Hemskirke and Large Early are best, so far as tested. The apricot will excel here. We can produce as good ones as can be grown anywhere.

Nectarines.—The Downton is best. But few varieties are grown as yet. The nectarine promises well.

Cherries.—Cherries are not much grown, and I do not think they will ever be much cultivated.

Small Fruits.—The currant has never proved satisfactory. I can give no reasons for it. The gooseberry has the same history with me. The Lawton blackberry is most cultivated in this vicinity, and does well. Few raspberries are grown. Monarch of the West, Wilson and Longworth's Prolific are our best strawberries.

Almonds.—Some are grown, but I have failed to see much profit in them. They do not bear regularly. Most of those who have almond trees wish they were something else, and many are digging up or grafting over their trees.

Walnuts.—English walnuts bear very satisfactory crops and promise well in favorable locations.

Citrus Fruits.—But few oranges are grown. We have no frost to injure the trees and they grow well; but the leaves are more or less smutty. I think the lemon will do better than the orange.

Olives.—There are some large olive trees in this vicinity which grow well and look very clean and thrifty, bearing more or less every year.

Figs.—Figs do very well.

Irrigation.—I do not irrigate.

Remarks.—This may be considered an old settled country, covered with large fruit trees, but most of our fruit is grown on trees planted within 12 years. As yet I consider this a new country, as we know little what our possibilities are. We know this: we have the best of soil and climate. Our limited experience shows that we have raised some of the finest of fruits, trees growing very thriftily and of the finest appearance. Give us 12 years more and we can then begin to tell something of what we have done, and we then hope to know what we can do, for there is a great future for a land thus favored. We have no frosts to injure our fruits, and thus far few insects that play havoc with our products. The woolly aphis has made its appearance, and our apple trees may suffer from that source; so we must be vigilant and "watch," and begin the fight in season. The apricot and olive appear to be full of promise, and with the little experience we have had we have great faith in that direction. The apricot grows well on the rich bottom soil and takes kindly to the hillsides also. The English walnut does finely on our rich bottom soil, not too close to the ocean.

T. C. Nance, Santa Maria.

Apples.—All kinds do well when well treated. The soil is dark, sandy.

Pears.—Early pears do best so far.

Peaches.—All varieties tried do well so far. Soil, sandy.

Plums.—I cannot say that any plums do well. They set fruit well but drop off before maturing.

Apricots.—All do well so far as tried.

Nectarines.—The white varieties are best.

Cherries.—None seem to bear well, although the trees are thrifty enough.

Berries.—Blackberries do very well; raspberries moderately; but no strawberries seem to succeed.

Nuts.—Almonds grow thriftily enough, but they do not bear well. Birds destroying the buds is one drawback. Walnuts do not bear well.

Citrus fruits.—They do not succeed in this region.

Figs.—Figs do very well so far as tried.

Irrigation.—I do not irrigate at all.

Remarks.—Santa Maria valley is one of the finest valleys in the State for a self-supporting district. I am located 15 miles up the valley from the coast, near Central City. We raise wheat, oats, barley, corn, all kinds of vegetables, and the finest quality of tomatoes I think I ever saw—all without irrigation; and our wells are from 60 to 110 feet deep. Still, summer crops do well. I have as fine a young orchard as there is in this end of the county.

S. P. Snow, Santa Barbara.

Apples.—Best early apples: Early Harvest, Red Astracan. Fall apples: Domine, Fall Pippin, Rambo, Golden Pippin. Winter apples: Newtown Pippin, White Winter Pearmain. Soil, rather rich loam, steep northern exposure, trees making a big growth. Some trees on light loam facing southeast making a much poorer growth.

Pears.—Mine have grown well, but are not in bearing yet.

Plums.—Cherry plums and Damsons do best. Soil mostly loam. Some trees on marl.

Apricots.—Moorpark is the only apricot I have. They do well on steep hill facing west.

Nectarines.—They are all thrifty on a steep hillside.

Cherries.—My cherries are not in bearing yet. Everyone said two or three years ago that cherries would grow well but would not bear in this vicinity. The past season proved this saying incorrect.

Small Fruits—The Red Dutch currant, the only one tried, nearly failed; situation, north side of hill. Gooseberries (Houghtons) made rank growth on northern exposure, but bore little fruit. Lawton and Kittatinny blackberries do about equally well on rich, steep side hill facing north. They do not do so well on ordinary level ground; such, I think, would need irrigation to continue in bearing late in the season. Mine sometimes bear till November. I tried Brinkles Orange raspberry, among the blackberries. It bore fairly, but the blackberries have nearly overpowered the plants. My strawberries do well on a steep, dry hillside facing south, bearing several months without watering—the plants dying during the summer. About half those set in the winter of 1880 survived, owing to so much rain late in the spring.

Almonds—My trees grow well, but do not fruit satisfactorily. I am budding them to nectarines.

Figs—Figs do well. I prefer the Smyrna. I have a large black fig that produces well; but, in 1880, owing to so little warm weather, few figs ripened well.

Irrigation—I do not irrigate at all. For most soils, and exposures, and localities and seasons, I think irrigation for fruit trees injurious rather than beneficial. Where the quantity of fruit would be thereby increased, I think by so much the quality would be deteriorated. It would also injure the habit of growth of the tree, necessitating a continuance of the watering, like too much clothing or coddling to a child. The dry year of 1877 I irrigated a little trees and vines just set. I kept some of them alive, but they never amounted to much. The same season I set eucalyptus, watering when set only; they are now 40 or 50 ft. high.

Remarks—My little ranch of 25 acres is one-half mile from the ocean, on high mesa land; is nearly all very hilly and very steep. I have been here only five years last spring; had my land to clear of trees and brush, and few of my trees are yet old enough to bear. The dry year, 1877, injured many of my trees severely, spoiling some of my apple trees on steep, south exposure; otherwise, although some prophesied failure, especially in my ocean-exposed locality, I have met with fair to good success in nearly all kinds of fruit that I have tried. I attribute this, however, partially to constant care and thorough cultivation, without which I have never been able to raise fruit satisfactorily in any State.

Ellwood Cooper, Ellwood.

Apples—All the apples I have do remarkably well. Soil, deep, sandy loam, formerly covered with large live-oak trees.

Pears—Do well, especially Bartlett and Seckel.

Peaches—All peaches do remarkably well; late varieties are freest from curl-leaf. Seedlings curl worse than budded stocks.

Plums—Plums have done well.

Apricots—None of mine have succeeded so far.

Nectarines—The white nectarine does remarkably well.

Cherries—Royal Ann, the Black Tartarian, Napoleon and Alton do well and bear well.

Berries—Berries require too much water.

Almonds—Almonds have not borne extra well. The Languedoc has done best. Trees in this locality have not been planted long enough to answer fully as to best varieties. The year '76-7 was too dry; '77-8 and '79-80 too wet. The trees will not do well with such heavy rains.

English Walnuts—Walnuts bear satisfactory crops.

Citrus Fruits—Oranges and lemons do well.

Olive—The olive does well.

Figs—Figs are a success here.

Irrigation—No irrigation is practiced in this section.

Remarks—I have answered only as to my own orchards, except as to the orange, lemon, almond, walnut, and as to irrigation. I am largely engaged in the olive for the purpose of

oil making; also have a great number of English walnut trees and almond trees.

E. J. KNAPP, Carpinteria.

Apples.—Best early apples: Early Harvest, 20-oz. Pippin. Best fall apples: Yellow Bellefleur, Yellow Newtown Pippin, Fall Pippin. Winter apples: White Winter Pearmain. Soil, sandy loam and black mold, clay subsoil.

Pears.—The best are Bartlett, Flemish Beauty, Seckel, Winter Nelis.

Prunes.—I am raising prunes quite extensively; find the German prune will not bear in this locality. The Petite prune bears well from the second year. The Gross prune does well, but no sale—also the Hungarian.

Peaches.—The Early Crawford peach has never failed to bear a good crop with me.

Plums.—The Yellow Egg plum promises to be one of our best bearers.

Apricots.—The Royal apricot never fails to bear large crops.

Cherries.—Cherries do not bear well, with the exception of Early Richmond.

Currants.—Cannot raise currants here.

Berries.—Raspberries and blackberries do well without irrigation. Strawberries have to be irrigated.

Remarks.—Have failed as yet to discover any pests to our fruit trees, with the exception of woolly aphis.

Ventura.

JAMES A. DAY, San Buenaventura.

Apples—All apples do exceedingly well. The White Winter Pearmain is better than in the northern part of the State. Soil deep, rich, sandy, clay loam; silt from the foothills, very deep.

Pears—So far as tried, pears do finely.

Peaches—Briggs' May is the best early peach. Crawfords and Morris White do well.

Apricots—All apricots do finely. Large Early, Moorpark, and Royal are the favorites.

Nectarines—All do well. The red seems to bear more regularly, and perhaps heavier than the white.

Cherries—Red Ox-heart cherries have done well.

Berries—Berries succeed.

Almonds.—The trees grow well, but do not bear regularly.

Other Fruits.—English walnuts, chestnuts, oranges, lemons, olives, and figs are all bearing satisfactorily.

No irrigation.

CHAS. G. FINNEY, San Buenaventura.

Pears.—My trees are all young, but are bearing finely, and have borne a little very excellent fruit. Soil a deep loam; wash from the hills. I have dug into it 160 feet, and find it all the same.

Peaches.—All do well.

Apricots.—This is the home of the apricot. We can beat the world.

Nectarines.—Nectarines seem to do as well as peaches. We like the red Olmstead best.

Prunes.—Prune trees are young; first crops satisfactory.

Olives.—Olives grow like willows anywhere about here.

Figs.—Figs are first rate, and the trees will break themselves down if you let them. We have not secured the best fig of commerce yet.

Irrigation.—We never irrigate.

ROBERT LYON, Cliff Glen.

Apples—Red Astracan does splendidly; Golden Pippin and Yellow Bellefleur are our best fall apples. Winter apples: Pearmain and Newtown Pippin.

Pears—Bartletts do well and keep well. Winter Nelis is the best late pear.

Peaches—The best early peaches are Briggs' May, Tillotson and Crawford; Beatrice is a failure here. The Tillotson curls least.

Plums—Duane's Purple and Imperial Gage do well.

Cherries—Cherry trees grow well but do not bear well.

Prunes—The German and Fellenberg prunes are grown; the German does best.

Small Fruits—The Red English and Cherry currants are grown; the former is the better. Houghton's Seedling gooseberry bears well. The Lawton blackberry is a success. Other varieties do not do well. Strawberries do very well.

Almonds—The 20 trees that I have bear regularly, but not heavy crops.

Citrus Fruits—My orange trees are healthy, and not affected with scale or smut. The Sicily Seedling lemon does well.

Figs—Figs do splendidly; the brown variety best of all.

Irrigation—I irrigate apples, plums and pears in June, then cultivate the land—that is all. The soil is black, gravelly loam. Orange, lemon and peach trees on sandy loam are irrigated every six weeks after April.

Remarks.—My place (Cliff Glen) is 16 miles from the ocean and 1,300 ft. above its level. Frost did not injure any trees here in 1879. My trees have been set six years. Apples, peaches and apricots ripen four weeks earlier on this place than the same varieties do on the coast or in the Santa Clara valley.

Los Angeles.

JEANNE C. CARR, Pasadena.

Apples.—Early Harvest, Red Astracan and Strawberry apples are best early varieties; Rhode Island Greening, White Winter Pearmain, Esopus Spitzenberg and Blue Pearmain are best winter varieties.

Pears.—Bartlett, Seckel, Beurre d'Aremberg and Winter Nelis are fine here, on clayey soil.

Peaches.—Waterloo and Early Rivers are good early peaches.

Plums.—Plums bear heavily; all kinds I have on clayey soil.

Apricots.—I call the Moorpark best.

Nectarines.—The Red.

Cherries.—Royal Ann.

Prunes.—Petite d'Agen.

Currants.—When I came here I was told that currants would not do well. I planted a few bushes, which have done as well as I ever saw any bushes in San Lorenzo.

Small Fruits.—Blackberries—Crandall's extra early and Kittatinny are best. Raspberry—Pride of Hudson. Strawberries—Monarch of the West and Sharpless.

Almonds.—Almonds are grown, but do not as a rule bear well. Mine do well. The stock is from J. Routier's, called "French almond."

English Walnut.—Does not always bear satisfactory crops.

Chestnut.—Succeeds fairly.

Citrus Fruits.—The orange has succeeded here for a century. Varieties preferred are Wilson's best, Wolfskill's best, Konah, Navel and Mediterranean Sweet. The lemon does well. Wolfskill's XX, Eureka and Sicily are preferred varieties.

Olive.—The profitability of the olive is considered doubtful.

Figs.—Figs do well. White Ischia and Brown Turkey are best.

Irrigation.—Irrigate twice a year, in June and August.

ROBERT STRONG, Westminster.

Apples.—Early varieties: Early Harvest, Red Astracan. Fall apples: Gravenstein, R. I. Greening, Yellow Bellefleur. Winter apples: White Winter Pearmain, Yellow Newtown Pippin, Nickajack, Shackley, etc. Soil, sandy loam.

Pears.—All pears do well on heavy sandy loam. A little alkali helps them.

Peaches.—The following varieties are preferred: Early Hale, Rivers, Tillotson, York, Alexander, Amsdens, Briggs' May, Smock, Solway, etc. The freest from curl leaf are Alexander, Amsden, Briggs' Early York, Coolidge's Favorite, Smock and Solway.

Plums.—The Damsons are best.

Apricot.—The Royal is the best bearer.

Nectarines.—Perhaps the Newington cling is the best. New White is a good bearer. Boston is a shy bearer.

Cherries.—Cherries are still in the experimental stage.

Prunes.—French, German and Hungarian prunes on peach roots grow thriftily and bear well.

Small Fruits.—Currants are a failure. Houghton's gooseberry does well. Lawton's blackberry ditto. Raspberries are poor so far. The Monarch is preferred over all other strawberries.

Almonds.—Almonds do not bear regularly.

Citrus Fruits.—The orange succeeds tolerably if sheltered from the sea breeze. The lemon is not a success.

Figs.—Figs succeed finely. The White Ischia is best for canning and the White Genoa is preferred for drying.

Irrigation.—We irrigate the first year and sometimes the second only. Once in June is sufficient.

Remarks.—We have found that pears do best where the soil is too alkaloid for apples or any other fruit. Our specialty will be pears, perhaps prunes (doing finely so far), apricots and late-keeping winter apples of superior quality. In oranges we cannot compete with the higher lands. Grapes succeed perfectly, except on very sandy soils, where they mildew. They will stand some alkali. There are a few Winter Nelis pears here bearing that we cannot call tested yet. Bartletts are fine.

G. D. COMPTON, Compton.

Apples.—Best early are Red June and Early Harvest. Fall apples: Fall Pippin, Maiden's Blush, R. I. Greening. Winter apples: White Winter Pearmain, Yellow Newtown Pippin. Soil dark sandy loam, and red clay.

Pears.—The best early pears are Bartlett and Early Madeline. The Winter Nelis is the best late pear.

Peaches.—Hale's Early and Early Crawford, Late Crawford, Solway, Lemon Cling and Health Cling. None of these varieties have "curled" here for eight years. Soil reddish clay.

Plums—I have a good late plum, a seedling of my own raising. It bears well and is the latest plum we grow. We grow also Yellow Egg, Green Gage, Jefferson. The soil is adobe and red clay.

Apricots.—The Royal and Early Golden succeed best.

Cherries.—The English Morello, May Duke and Black Tartarian succeed best.

Prunes.—The only one which does well is the Hungarian.

Small Fruits.—The Cherry currant is the only one which is satisfactory. The Lawton blackberry and Black Cap raspberries do well. Strawberries do well if cared for.

Nuts.—Almonds are not a satisfactory crop. English walnuts bear well. The Italian chestnut is a success.

Citrus Fruits.—It is too cold for the orange. I have some trees which bear well some years; others, there is too much frost. The lemon does not do well, nor the olive.

Figs.—All varieties bear well.

Irrigation.—Part of my trees I irrigate twice a year; some not at all. If I had not watered when first planted, I would not irrigate at all.

Remarks.—My opinion is that many persons have injured their trees and land by irrigation in this county. My experience is that almost all kinds of fruit can be grown here without any irrigation, if the land is well cultivated, especialy the low lands in this county I know are better without it. The plum generally has not given satisfaction in this county, but on heavy soil I have no doubt it will do well. This season I have 16 varieties bearing; all did well except the German prunes, which always drop off before ripening, except a few. Those that do ripen are very fine fruit. I wish some one could tell me how to keep them from dropping. They bloom full every year; the fruit sets but drops when about half grown.

J. N. SHIELDS, Florence.

Apples—The Yellow Bellefleur is the preferred fall apple, and the White Winter Pearmain is the favorite for late keeping. All varieties flourish, and the identities with similar varieties at the East are preserved in all points better than in keeping qualities. There is a remarkable absence of uniformity among the varieties in the loss of keeping qualities. For instance, the Roxbury Russet, a long keeper at the East, mellows out here in December; the White Winter Pearmain, a long keeper at the East, is so here. It keeps until March, and with proper care, still later. Pearmains were found in April, 1880, near Florence, just where they fell from the tree, covered with leaves. These were perfectly sound, and not shriveled. Apples from the same tree, on the shelf, were sound but slightly shriveled. Just how to keep apples is a question coupled with another question, of how and where to get or develop varieties with better keeping qualities.

Pears.—The pear tree will flourish on soil here too strongly charged with alkali for the well-being of any other fruit tree.

Peaches.—The Peach is, perhaps, of all fruit trees the most shy of alkali.

Plums.—All have succeeded that have been properly tried. Soil moderately charged with alkali seems to be no detriment.

Apricots.—Moorpark is the favorite, but not the only prosperous variety.

Cherries.—Cherries have not been tried here. They have fruited handsomely in Pasadena, and ought to do better here, because it is cooler.

Small Fruits.—The red cherry currant does well. Strawberries do well in rich loam with plenty of water.

Nuts.—The almond makes wood faster than nuts. The English walnut in 1880 did well on almost all kinds of soil. It is profitable every year on rich, deep, alluvial soil.

Irrigation.—Grape vines and fruit trees are not irrigated in the neighborhood of Florence, as the land is moist.

Remarks.—Since the Los Angeles 1880 Exposition, at which the alfalfa belt of Los Angeles county very much surprised the public as an exhibitor of grapes, numerous visitors have called at some of the vineyards contributing to the grape display at the Horticultural Pavilion. Mr. Josiah F. Durrell, of Florence, who made the most extensive exhibit of grapes ever made in Southern California, speaks of a greater interest in Florence grape lands than he expected ever to witness. Among those who have visited his vineyard, eager to investigate on the spot, was a company of Germans. The three cardinal points on grape culture on the squash belt, recently made public, are the fourfold yield as compared with higher lands; about equal quality, all without irrigation.

A. R. MESERVE, Pomona.

Apples—Duchess of Oldenburg, Yellow Bellefleur, Swaar, Yellow Newtown Pippin, White Winter Pearmain are the leading varieties. The soil is gravely and sandy loam.

Peaches—Early Crawford and Early Louise and the Late Crawford have done best.

Plums.—The Cherry, Coe's Early, Royal and the several prunes do well. Soil, sandy loam.

Apricots.—The Moorpark apricot is preferred.

Nectarine—The Boston is best.

Small Fruits—The Red Cherry currant, the English gooseberries, the Lawton and Kittatinny blackberries all do well. The large red raspberry bears well and continuously. The Monarch of the West strawberry does well; the Wilson is very poor.

Nuts.—Almonds are not satisfactory, but the Languedoc trees growing adjacent to the paper-shell have borne heavily. English walnuts do not bear well.

Citrus Fruits.—The orange does splendidly, being free from scale or smut. Navel, Malta Blood, Mediterranean Sweet and St. Michael are best. The lemon does very well; the Eureka, Lisbon and "Sweet Rind" are best.

Olives.—The olive does well and is free from scale.

Figs.—Figs bear abundantly.

Irrigation.—We irrigate once in three to six weeks from first of May until September. The number of times is governed by the age of the trees.

Remarks.—In this locality budded peaches, varieties of plums, cherries and apricots have been put out only within the last three years. The cherries have not thus far bid fair to do much. The Petite d'Agen annd Gros d'Agen prune bear abundantly. The Cherry and Royal plum are very prolific. The apples came into fruit this first season, and have proven satisfactory beyond the hopes of the most sanguine, in bearing and quality. The soil, for all kinds

[CONTINUED ON PAGE 205.]

The Origin of Our Moon.

Prof. Robert S. Ball, a somewhat distinguished English scientist delivered a lecture, recently in which he incidentally alluded to the probable formation of our moon in the following terms:

Let us leave the earth for a few minutes, and examine the past history of the moon. We have seen the moon revolves around the earth in an ever-widening orbit, and consequently the moon must in ancient times have been nearer the earth than it is now. No doubt the change is slow. There is not much difference between the orbit of the moon a thousand years ago and the orbit in which the moon is now moving.

But when we rise to millions of years the difference becomes very appreciable. Thirty or forty millions of years ago the moon was much closer to the earth than it is at present; very possibly the moon was then only half its present distance. We must, however, look still earlier, to a certain epoch not less than fifty millions of years ago. At that epoch the moon must have been so close to the earth that the two bodies were almost touching.

Everybody knows that the moon revolves now around the earth in a period of 27 days. The period depends upon the distance between the earth and the moon. The time and the distance are connected together by one of Kepler's celebrated laws, so that, as the distance shortens, so must the time of revolution shorten. In earlier times the month must have been shorter than our present month. Some millions of years ago the moon completed its journey in a week instead of taking 28 days, as at present. Looking back earlier still, we find the month has dwindled down to a day, then to a few hours, until at that wondrous epoch when the moon was almost touching the earth, the moon spun round the earth once every three hours.

We have hitherto been guided by the unerring light of dynamics, but at this momentous epoch dynamics desert us, and we have only probability to guide our faltering steps. One hint, however, dynamics does give. It reminds us that a rotation once in three hours is very close to the quickest rotation which the earth could have without falling to pieces. As the earth was thus predisposed to rupture, it is of extreme interest to observe that a cause tending to precipitate such a rupture was then ready to hand. It seems not unlikely that we are indebted to the sun as the occasion by which the moon was fractured off from the earth and assumed the dignity of an independent body. It must be remembered that the sun produces tides in the earth as well as the moon, but the solar tides are so small compared with the lunar tides, that we have hitherto been enabled to neglect them. There could, however, have been no lunar tides before the moon existed, and consequently in the early ages before the moon was detached the earth was disturbed by the solar tides, and by the solar tides alone.

The primæval earth thus rose and fell under the tidal action of the sun. Probably there were no oceans then on the earth; but tides do not require oceans, or even water, for their operation. The primitive tides were manifest as throbs in the actual body of the earth itself, which was then in a more or less fluid condition.

At the remote epoch of which we are speaking the solar tides were very small, as they are at present. Yet, small as they are, there was a particular circumstance which may have enormously increased their importance. The point to which I refer can be illustrated very simply. We have here a weight of 14 lbs. freely suspended, and here I have a small wooden mallet which barely weighs half an ounce, yet small as this mallet is, I can make the heavy weight swing by merely giving it blows with the mallet. Let me try. I give the weight blow after blow. I hit it as hard as I can, yet the weight hardly swings. I have not yet been successful. The art of succeeding is merely to time the blows properly; this I am now doing, and you see the weight swings in an arc which is steadily augmenting.

We therefore see that a succession of impulses, in themselves small, can yet produce a great effect when they are properly timed. In the present case the impulses should succeed each other at the same interval as this pendulum requires for one two-and-fro oscillation. The time therefore depends on the body struck, and not at all on the body which gives the impulses.

Just as this pendulum swings with a definite period so the vibrations of the primæval earth had a certain period appropriate to them. Suppose that the liquid primæval globe were pressed in on two quadrants and drawn out on the two others, and that the pressures were then released. The globe would attempt to regain its original form, but this it could not do at once, any more than the pendulum can at once regain its vertical position; the protruded portions would go in, but they would overshoot the mark, and the globe would thus oscillate to and fro. Now it has been shown that the period of such oscillations in our primitive globe is about an hour and a half, or very closely to a half the supposed length of the day at that time. The solar tides, however, also have a period half the length of the day. Here then we have a case precisely analogous to the 14 lb. weight I have just experimented on.

THE CHAMPION REAPERS AND MOWERS

Merit Is What Makes The Champion Sell.

The old adage that "merit, like the camel's lading, stops the bearer at the gate while the empty pass in," is not now true, whatever it once was. In fact, the order is exactly reversed. Merit is what wins now-a-days, and the want of it conduces to certain and inevitable failure and demoralization. The triumphs of fictitious merit are at best short-lived, because an intelligent and discriminating public soon perceive the fraud and brand it as such.

NEW CHAMPION MOWER.

THE CHAMPION Reaping and Mowing Machines

Have triumphed over all obstacles and become the recognized criterion in harvesting machinery for the very good reason that they had the good qualities to sustain them, and were always able under all circumstances to demonstrate that their worth was real and not fictitious.

The various styles of these machines which are being built, by the tens of thousands, for the season of 1882, are emphatically commended on their merits. It has taken many years' experience in the manufacture of reapers and mowers to arrive at the perfection now characteristic of all CHAMPION MACHINES. But such is that perfection, that no regret is to be indulged in at the expenditure of the labor, patience and money which were required to produce it.

The fact that fully one-half of the reapers and mowers now sold are CHAMPIONS is a sufficient assurance that the efforts of its builders in this direction have been appreciated. The season of 1882 opens with a brighter prospect than has any previous one. Our local agents throughout the country have contracted for largely increased numbers, being determined, if possible, to have enough machines at their disposal to supply the demands of their customers, as they do not wish to repeat the experience of last season, when many of them were entirely out even before the harvest had set in. The volume of inquiry is also very large and increases with each day's mails. To all requests for information of any kind we take pleasure in making early and full responses.

LIGHT CHAMPION MOWER.

The secret of all this success lies in the fact that the CHAMPION has the solid merit to stand upon. It possesses all the necessary qualities to constitute a thoroughly reliable and in every way satisfactory machine. It inspires the farmer with confidence at once, and the longer he uses it the better he likes it. The complete satisfaction it invariably gives to the purchaser accounts for the enthusiasm of our local dealers, which, we venture to remark, was never before equaled in the history of the manufacture and sale of agricultural implements.

ANOTHER HEAVY REDUCTION IN PRICES.

We always have aimed to give our patrons the benefit of the

LOWEST POSSIBLE PRICE

THAT A STRICTLY

First-Class Mower and Reaper

CAN BE MADE AND SOLD FOR.

NO. 4. CHAMPION COMBINED REAPER AND MOWER.

We take great pleasure in informing the farmers that the great

INCREASE OF OUR SALES

—OF—

CHAMPION MACHINES

Enables us to make

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In our Price List.

PRICES OF CHAMPION MACHINES.

	Weight.	Price.
Light Mower, cuts 4 feet	580 pounds, reduced to	$100.00
New Mower, cuts 4 feet 3 inches	650 "	115.00
No. 4 Mower, cuts 5 feet	800 "	140.00
No. 4 Self-Rake Reaper and Mower, cuts 5 feet	1165 "	230.00
No. 1 Self-Rake Single Reaper, cuts 6 feet	1050 pounds, reduced to	175.00
No. 4 Hand-Rake Reaper and Mower, cuts 5 feet	1125 "	215.00
No. 4 Dropping Reaper and Mower, cuts 5 feet	1065 "	215.00

We give Two Knives and One Sickle with each Combined Champion, and Two Knives with each Mower.

Reaping Attachments.

	Weight.	Price.
Self-Raking for No. 4 Mower	365 pounds, reduced to	$90.00.
Hand-Raking for No. 4 Mower	325 "	65.00.
Dropping for No. 4 Mower	265 "	65.00.

We send one Sickle with each Attachment.

San Francisco. BAKER & HAMILTON, **Sacramento.**

THE STABLE.

Horse Breeding in California.—No. 6.

Written for the Press by JOSEPH CAIRN SIMPSON.

Roadsters and Fast Trotters.

Beside the families mentioned in previous articles, there are others well worthy of a high place in the estimation of the breeder and with which California is bountifully supplied. It would require too much space to enter into as full a description as has been awarded the families which occupy the first rank in the estimation of a large majority, and it is scarcely necessary in a treatise of this kind to go into an elaborate detail; not that the others are unworthy, for, taking into consideration the "chances" which have been allotted those which could not boast of so fasionable breeding, there is not such a disparity as the records without other explanation show. There is a family, peculiar to California, which has forced recognition in the face of persevering calumny, and another, which ranks very high on the track and road, has sprung from long-ago importations to this coast. Decendants of the first have lowered the records in several classes, and of the second a wider claim can be filed, as they have been noted as race-horses, trotters, roadsters, and emphatically good for all the ordinary uses to which horses are put. The first is St. Clair, the second Belmont. There is another Belmont which has gained distinction in the East as the sire of trotters, and the two are frequently confounded, the Eastern people thinking that Alexander's Belmont is meant whenever the name is used, and many on this side of the continent make the mistake that all that are called Belmonts trace to the thoroughbred horse owned by Henry Williamson, and brought here from Ohio when a young colt. As a son of Alexander's Belmont, Nutwood, made several seasons here, and there are others of the blood in the State, whenever the general term is used in these articles, the California horse will be understood, and the other qualified with the prefix of his owner's name. There being no other St. Clair of prominence, the appellation is understood without explanation. Judging from his appearance, those who were well acquainted with St. Clair unite in the opinion that he was an animal of high breeding, but every effort to discover his pedigree was futile. The papers relating to his breeding were destroyed in the great fire at Sacramento, and when the stock became noted it was found too late to obtain a clue which would lead to his birthplace. He was a pacer and quite fast for his time. He had worked in freight teams, and before his colts had shown on the tracks his get were in demand for work horses. In the construction of the Central Pacific railroad, they showed such a decided superiority for hard work, ready, as regularly as the days came, to perform their allotted task, that the purchasing agent of the company would pay a higher price for them than for others which looked fully as well. They were also prized for endurance on a journey, and when Occident, a grandson of St. Clair, startled the trotting world with his performances, a few became satisfied that there was a high degree of merit in the strain. Occident trotted in 2:16¾ at Sacramento, Sept. 17, 1873, and this was the fastest record up to that date. A daughter of St. Clair, Lady St. Clair, has a pacing record of 2:20, and a son, Ben Butler, 2:19¾. To show that there is endurance at a fast race, as well as hauling loads or journeying over the mountains, Lady St. Clair has the fastest record, trotting or pacing for five miles, being less than 13:00 by some three seconds and a fraction; but not having the exact time at hand, I cannot give it definitely. His son, Fred Low, trotted well when a colt, and he is the sire of Clay, who gained a record last year of 2:25½, and there are other sons and grandsons which have shown well. But the highest glory, the culmination of the greatness of the family, has been witnessed in the past two years, by three daughters of St. Clair producing the fastest two-year-olds which have ever appeared. In 1880 Fred Crocker trotted in 2:25¼, and in 1881, Wildflower in 2.21½, and Bonita, 2:24½. There is a significance in these great facts beyond what the figures show. These young prodigies are all by Electioneer, and it proves that the St. Clair is a capital out-cross for the Hambletonian, and likely to nick with others of the family. It is unfortunate that there is not more of the blood available, as there can be no question of its value when accompanied by the proper form. With the exception of Fred Low, the St. Clairs I have seen have shown the "finish" which is credited to the "old horse." There is rather more of the quarte-rhorse in their build than the longer-distance racer, and there is a striking resemblance in the form of some of them to the Printer stock.

It apears almost superfluous to write much about the Belmonts, and to old residents of California there would not be any necessity for extended comments. There is not a county in the State where the descendents of this patriarch of the Occident are unknown, and it is safe to assert, invariably "under the tongue of good report," they have figured prominently in every department of horse life. On the race course, on the trotting tracks, the road, the plow, the wagon, and in the heavy work incidental to the traffic of a large city, the Belmonts have played well their part. Owen Dale, Langford, Dashaway, Bonnie Belle, Reveille, Pele, Pilot, Leonora, Solomon, etc., in the first generation; in the second, Thad. Stevens, Thornhill, Waterford, Phil. Sheridan, Nathan Coombs, and others, have sustained the name on the turf. On the tracks, there have been Venture, Monarch, Lady Ellen, Susie. And it is almost sure that if an animal has a fraction of the blood it will be good on the road. With these qualities so generally known and acknowledged, there is little danger of the breeder neglecting this line. The Nelsons are also a California family, as the founder of it, John Nelson, was brought here about a quarter of a century ago—his advertisement appears in the *Spirit of the Times* of 1860—and he is reported to be still alive and hearty. His sire was imported Trustee, the sire of the great race mare, Fashion—and his dam was the Redmond mare, by Abdallah, the sire of Rysdyk's Hambletonian. From this breeding it is not surprising that his stock is in demand, and a Nelson mare is sought for by breeders as likely to mate well with any other of recognized merit. He is the sire of Nerea, 2:23½; Aurora, 2:27; Gov. Stanford, 2:27½, and Nerno, 2:30. A horse which has made his mark as the progenitor of roadsters and fast trotters is Chieftain, and he was located at or near Stockton for many years. He was by Hiatoga, his dam by Trimble's Eclipse, a son of American Eclipse, grandam by Kentucky Whip. He was the sire of Defiance, a horse which has the fastest combined record, trotting and pacing, 2:24 trotting and 2:17¾ pacing. He also has the fastest two miles to his credit, and another son, Cairo, has a record of 2:25. The Chieftains are large, fine-looking horses, and in my opinion a desirable element in the production of the class of horses under consideration. The Hiatogas are very popular in Ohio, where Chieftain was bred, and quite a number of them figure in the "Breeder's Trotting Stud Book."

There are two Blackbird stallions in California, Reavis' Blackbird, at Chico, and A. W. Richmond, at Los Angeles. Both are from dams of good breeding, and their stock is sure to occupy a prominent position in the trotting annals of this coast. As I owned their sire, and brought Richmond here, it might be considered undue partiality which led me to express opinions which I hold; but what has been publicly shown will not come under that head. Reavis' Blackbird was bred by A. C. Smith, in Jackson county, Iowa, from a mare by Captain Lightfoot, and his grandam by Kentucky Eclipse. He won several stakes at four years old, and several races in the East. He trotted in 2:22 at Sacramento, September, 1874. As the sire of Susie Brown and Berlin, he gives a token of his colts possessing speed, and those who have seen them at the exhibitions of the State Agricultural Society can testify that they are of high form. A. W. Richmond was bred by A. Prussia, Jackson county, Iowa, and his dam by Thos. W. Pope, of Cleveland, Ohio. She was by Rattler, thoroughbred, and her dam was by Spotted Ranger, called an Arabian, but probably what is called in the South an Opelousas horse. Owing to an injury to his leg he would not stand training, though he showed a remarkable turn of speed, and as a road horse had no superior. As I drove him on the road for three years in Chicago, I had a good opportunity to test him, and there is scarcely a quality desirable in a road horse which he did not possess. He is the sire of Romero, who heads the list of four-year-old stallions with a record of 2:22½, of San Diego, Len Rose and Mavis, all of which have shown on California tracks.

I anticipated completing the genealogical part of the essay in this paper, but find that another article, at least, will be required. There are the Vermont Black Hawks, Morgans, Rattlers, Signals, Bellfounders, McLellans, General Taylors, etc., yet to describe, all demanding notice and entitled to a place. There is scarcely a limit to the choice of selection among the various strains, and in so extensive a quarry it will be strange indeed if proper foundation stones cannot be found.

A NEW MANUFACTURE.—A new and curious branch of the silk manufacture has lately crept into some Paterson factories. The process is a secret, and no information can be given about it, as every safeguard is maintained to prevent its getting out. The weavers themselves alone possess the secret, which is not even imparted to their employers. They work in a small room, closely locked on the inside and out, so that no one can see how the curious loom is worked. The work is said to require great skill, and only a few weavers can do it, who consequently demand and receive very large wages. Whether the thing is a success or not remains to be seen, as none of the goods have yet been placed in the market. Some of the samples that have been exhibited, however, are said to have created a decided sensation. The goods produced are nothing more or less than imitation seal skin, made of silk. It is a new process, and entirely different from the manufacture of velvet or plush, or anything of that sort, and the product is said to so closely resemble genuine seal skin of the finest quality as to deceive even experts. It is quite expensive, although of course nothing to be compared with real seal skin. The future of this branch of the silk trade remains to be seen. If the product is really what it is represented to be, it is a big thing, and will doubtless prove exceedingly profitable to those possessed of the secret of its manufacture.—*Paterson Guardian.*

SHEEP AND WOOL.

The Vermont Breeders and their Work.

EDITORS PRESS:—I closed my letter of recent date with a reference to the existence of two thoroughbred sheep breeders associations in the little State of Vermont. As they have become somewhat prominent, in the successful achievement of a certain object, I esteem it a privilege to again refer to them, the conditions suggesting their necessity, their organization, development, and peculiar co-existing relations.

The Early Importations.

I might preface these lines with a brief historic sketch of the importation and characteristics of the ancestry of the sheep involved in the interests of the associations under consideration. But it will suit our purpose as well in this connection to commence about the year 1827, when a number of these sheep from the two distinct families found their way into New England.

The "Infantados" fell into the hands of a Mr. Atwood, of Connecticut, with whom they flourished until some years later they were purchased by Mr. Hammond, of Middlebury, Vermont.

The "Paulers" fell into equally good hands, and were associated with the names of Robinson & Rich. For 40 years the two families have been known as the Atwood & Robinson sheep. Since 1840 the Rich Brothers, of Addison county, Vermont, have bread the Paulers pure—relying wholly upon their best male specimens for improvement. Mr. Hammond bred in the same way, leaning always to the outer circle of relationship, everything else being equal and equally promising of desired results.

Like seed falling upon good ground, these sheep fell into good hands, consequently they have a world-wide reputation and bring the enormous figures before referred to. It was as fortunate as strange that the few first experimental breeders should have been such remarkable men. Remarkable as possessing a tenacity of purpose, a clear, positive, intuition creating, and realizing, the ideal in perfection—a result which seemed beyond the realms of possibility. For quite a term of years after the introduction of Spanish sheep into Vermont, the farmers, aside from a few friends of the pioneers, were slow to wed their faith to the little greasy merinos—as they were called. But time through her manifold auxiliaries works great changes, and proves that disease is not the only thing which is catching. Gradually one after another of their neighbors, through contract and observation, became infected with the desire to put away their coarse and keep a less number of fine wool sheep. In time, thoroughbred flocks became numerous, and many of the hills and valleys in the State were dotted with little groups of the dark-coated, white, fine wooled merinos—especially in Addison county, where to-day almost every farmer, banker, lawyer, doctor and merchant is the owner of a little flock of sheep.

Trade in Sheep.

At length a large and profitable trade sprang up with the Middle and Western States. Many flocks were being founded at home and abroad from selections of both families. Some purchased ewes of the Pauler breeds and rams of the Infantado or Atwood and so crossed the two. The mixed home flocks now stand well and have their friends the same as have those that have been bred pure.

A class of traders, middle-men (not breeders) had carried on a large trade with the West for 20 years. Some flocks in the West, originating through this medium, were found to be other than thoroughbred. Flocks at home were being misrepresented, and people abroad were being imposed upon. Home breeders four years ago discovered it was for their interest to try and do something to protect themselves from the evils of such misrepresentation and the sales of sheep from spurious flocks. Accordingly the effort was made and the means devised. Through concert of action a few prominent men breathed the breath of life into what is known as the Vermont Sheep Breeders Association. It is broad and simple in its aims, prudential and just in its provisions. It makes no distinction of family blood, but accepts all flocks for record that are pure-bred Spanish Merino—excluding everything that cannot prove purity in origin and breeding beyond a doubt. Its growth has been almost magical. From less than 100 the year of its organization it has grown to 730 members.

The results sought in the organization are now being fully realized. Buyers from abroad visit the office, take list of recorded sheep, and look at no other. The traders deal with none but those with recorded flocks, as they can sell no other sheep for remunerative prices. In the register of this association most of the sheep are recorded, and yet there is another association, with 200 members, which might be denominated the "close communion," but is called the "Atwood Club." Its aims and objects are essentially the same as the other, except that it is *exclusive.* None but the high-toned Bourbons—the pure-bred Atwood—can be numbered upon the pages of its register.

There has ever been a modest spirit of rivalry existing between the breeders of the two families, and yet the points and characteristics peculiar to each are so slightly different, that it would seem almost foolish and unwise to sustain two organizations of the same kind in the same State. As it is, there is a competition in the effort to produce the superior animal. And to this end and proving it to the public, they have instituted

Public Sheep Shearings,

Where their best sheep are shorn this year and next year, and the fleece grown in the meantime taken by a committee and cleansed. I saw a fleece produced in this way by V. Rich, weighing (cleansed) 9 lbs. 3 ozs., and as fine as any Silesian wool—a wonderful fleece! In this feeling of competition, not bitter enough to defeat the means of progress, exists really the only difference in the relations of the two associations. It is more than possible that drawing these lines of demarcation is a decided advantage to the business in general, because there are a large number of breeders of mixed flocks, and to have the two families brought into competition, enables them to choose a sire from either family wherever they see a promise of the best results.

Benefits of Association.

The question of how these, or all such associations of thoroughbred breeders, are to benefit or affect the wool growing industry at large, may be answered in a few words. The more perfect and pure the fountain-head, the less turbid the stream below and beyond; the more complete and improved your fire-arm, the stronger your explosive—the more chances you have of centering your mark. Let no wool grower, however remote, forget that he is directly interested in every thoroughbred flock of sheep in the country and in every association created to foster their culture and perpetuity. Associations can always bring a power to bear upon all vital questions at issue, while as individuals the voices of the members would have little weight. The tariff on wool and woolens is a question in point where this influence has been signally manifest.

The wool growers and wool manufacturers have for several years worked together as one, and thereby sustained a fair protective tariff on wool, which helps the producer on this coast several cents per pound.

In closing, we would assert that one-half of all the sheep roaming over the pasture lands of the Pacific slope to-day produce only one-half the wool they are capable of doing, and yet double the amount their ancestors did fifteen years ago. This is really a fact, and as such is remarkably suggestive, pointing as it does directly to the thoroughbred flocks of this State, and through them to the object of the associations referred to in this letter. The thoroughbred Spanish flocks of this coast, their quality compared with their relatives in the East and their value in the relation sustained to the graded sheep of this coast, will be the subject of the next letter. E. W. PEET.

Haywards, Cal.

Electricity as a Motive Power.

The *Manufacturer and Builder* says that the development of electricity as a motive power is an aim which, though difficult of realization, is yet so strongly to be desired. Its achievement is not very far off, if we may take the utterances of some of the best authorities on the subject as conclusive evidence of the probabilities of the future. For example, M. Bontonx, presiding recently at a meeting of the Parisian Society for the Utilization of Electric Force, observed that the artisan who needs a little motive power for his work, is forced to seek it in the employer's factory, while thousands of workmen and workwomen wear out their bodies and destroy their strength in impelling the sewing machine, the lathe, and other motive powers of small industry. The division of electric energy is destined to effect an entire revolution in this sphere.

The day will come, and sooner than is imagined, when the artisan family will see enter their dwelling by means of a magic wire, the force which is now so costly to them, and this will be the democratization of force for the benefit of the working class. The solution of the question of motive force in mechanical industries is, by this, apparently not far distant, and it is curious to contemplate the changes in our social and public arrangements which such a development of the electric motor would accomplish. If an efficient, actuating agent for small machines of every kind could be readily obtained and cheaply purchased, what a revolution would come over the existing labor market! How many work-shops for men and work-rooms for women would be closed, and quondom employees supplied in their own homes with the means of carrying on their work in their own apartments. Without attempting to forshadow all that might happen, certain it is that the cost of driving lathes, and machines of every kind, would be largely diminished, and the means and motive for extending their application supplied.

From all points of view, it is much to be wished that this novel mode of actuating machinery may be developed so that its efficiency and economy may establish a reputation, and be largely patronized by both large and small employers of labor.

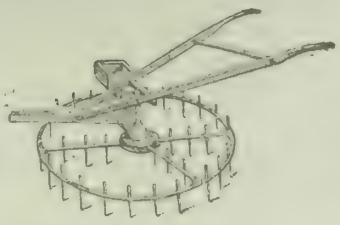
FINE DRILLING.—Prof. Edward C. Pickering, of Harvard College, says that, in undertaking to measure the intensity of the light of the satellites of Mars, he had occasion to need an extremely small hole. A hole about the *twenty-five-hundredth* part of an inch in diameter was finally secured.

JACKSON & TRUMAN.

Jackson's Rotary Vineyard or Orchard Harrow.

PRICE: 5 feet Diameter, $25.

It has one-half inch Steel Teeth, and is made to rotate either way by simply changing the cast-iron weight from one side to the other. The Harrow weighs 315 pounds, and can be taken down and packed closely for shipment.



The Jackson Vineyard Harrow rotates either way at the will of the driver, and by driving the SLOW side next to the vine or tree, there is no danger of hurting them, as the Harrow will roll gently around them.

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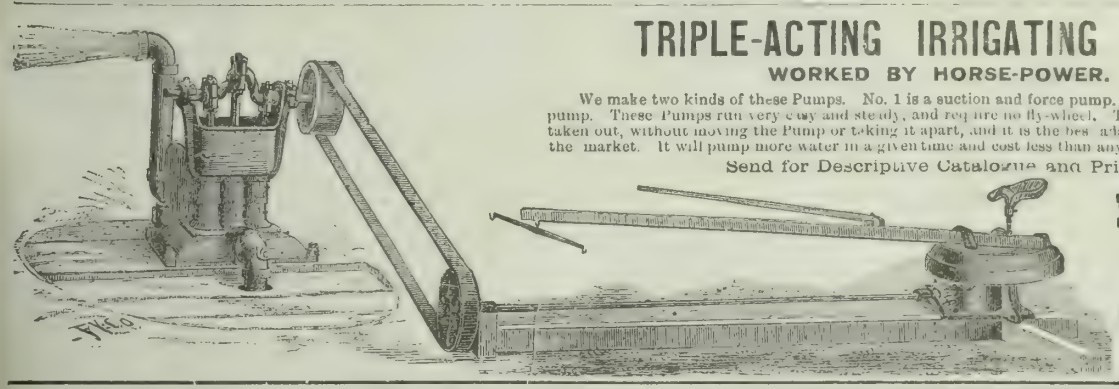

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I, the undersigned, J. WM. BUOB, offer my farm situated about 3 miles southwest of Blacks, for sale at auction to come off on

Thursday, April 27, 1882,

Commencing at 11 o'clock A. M. The place contains 110 acres, of which there are about [illegible] acres in cultivation, [illegible] of it summer fallow and the rest [illegible] and about [illegible] acres of [illegible]. To be sold [illegible] as a whole or in parcels, will [illegible] to a Young Wishing to buy and at [illegible] place.

TERMS OF SALE: CASH,

U. S. Gold Coin, ten per cent on the day of sale and the balance when the deed is made out. Deed at the expense of the purchaser.

J. WM. BUOB.

Blacks Station, Yolo Co., Cal., March 6th, 1882.

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[Illustrated in RURAL PRESS, Dec. 3, 1881.]

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Southern California Citrus Fair, at Riverside, March 22d, 23d and 24th.

To the Citizens of Southern California:—

The day selected for our annual citrus exhibition is near at hand and we desire to direct your attention to the value and importance of these exhibitions.

1st. In the opportunities they afford our people for selecting the best varieties for cultivation, and the best methods for preparing them for market.

2d. In the advantage they give to dealers in these products, to examine and compare varieties, as also the opportunity to judge of the quantity and quality of the fruits produced.

It is therefore both important and desirable that all portions of southern California adapted to, and growing these fruits should be represented here, that the extent of territory specially suited to them may be made known and recognized.

Even the first fruits of a newly planted orchard may possess greater value upon comparison than is suspected by the producer, and hence we specially desire to see specimens from every locality.

Ample space for the display of fruits is provided in the pavilion, so that there need be no hesitancy in sending either a single specimen or the largest cluster. Exhibits of fruit from Riverside must be at the pavilion on Tuesday afternoon, the 21st. We would like to see every orchard in the valley represented by as full a display as possible.

Separate specimens must be entered for each premium competed for. The following

PROGRAMME

For the evenings of the exhibition has been adopted:

Wednesday evening will be devoted to an address in the nature of a dedication of the building, music, social conversation and announcement of Committees of Award.

Thursday evening, to essays upon subjects connected with horticulture, and discussions.

Friday evening, to essays, discussions and report of committees.

The following committees have been appointed:

On Reception of Guests.

G. W. Garcelon,	Hon. H. M. Streeter,
S. C. Evans,	L. M. Holt,
Jas. H. Benedict.	L. J. Swett,
E. Caldwell,	E. G. Brown,
O. T. Johnson,	A. Kleinschmidt,
O. T. Dyer,	Dr. C. J. Gill,
A. J. Twogood,	A. D Haight,
Dr. J. Jarvis,	R. F. Cunningham,
P. J. Kleinfelter,	P. D. Cover,
L. C. Waite,	Frank A. Miller,
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Nelson W. Mann,	C. L. Benedict,
W. J. Norcross,	Fred J. Hall,
B. F. Allen,	R P. Waite,
Jno. J. Evans,	W. Prior Russell,
H. T. Rudisill,	Frank Patton,
Chas. Johnson,	Harry Benedict,
Jno. A Simms,	Manly Crawford,
Benj. B. Handy,	Samuel McCoy,
Chas Chaffee,	Thos. Hendry,
Ross Hart,	Priestly Hall,

S. O. Lovell.

The Committee on Reception is requested to meet at the pavilion on Monday, the 13th inst., at 3 P. M., and the Committee on Decoration of Hall at the same place, on Tuesday, the 14th, at 3 P. M. A full attendance of the respective committees is very much desired at the time specified, when the plan of work will be presented.

The ladies of the valley are cordially invited to assist in the decoration of the hall, and all who can are requested to meet the Committee on Decoration, at the pavilion, on Friday, the 17th, at 9 A. M.

H. J. RUDISILL, Manager.

A. S. WHITE, JAS. BETTNER, B. D. BURT, } Ex. Com.

PREMIUMS AND REGULATIONS.

The fourth annual exhibition of citrus and semi-tropical fruits grown in California, will be held at Riverside, San Bernardino county, on Wednesday, Thursday and Friday, the 22d, 23d and 24th of March, under the auspices of the Riverside Citrus Fair Association.

The following programme has been adopted:

Premium List.

CLASS 1.

Best display of citrus fruits grown by one exhibitor in the counties of San Diego, Los Angeles, Ventura and Santa Barbara $15.00
Second best 10.00

CLASS 2.

Best display of citrus fruits grown by one exhibitor in the counties north of Los Angeles and Santa Barbara $15 00
Second best 10.00

CLASS 3.

Best display of citrus fruits grown by one exhibitor in the county of San Bernardino $10.00
Second best 5.00

CLASS 4.

Best display of one variety of budded fruit, not less than 30 specimens; size and general appearance to decide ..... $ 5.00
Second best 3.00

CLASS 5.

Best display of one variety of seedling fruit, not less than 30 specimens; size and general appearance to decide ..... $ 5.00
Second best 3.00

CLASS 6.

Best pyramid of oranges in variety, not less than 50 specimens, general appearance to decide ..... $ 5.00
Second best 3.00

CLASS 7

Best budded orange ..... $ 5 00
Second best budded orange 3.00

CLASS 8.

Best seedling orange ..... $ 5 00
Second best seedling orange 3.00

CLASS 9.

Best orange on exhibiton ..... $ 5.00

CLASS 10.

Largest orange on exhibition ..... $ 5 00
Second largest orange on exhibition 3 00
Largest and finest cluster of oranges 5.00
Second do " " " 3.00

CLASS 11.

Best plate of Riverside or Washington Navel oranges ..... $ 3 00
Second do 2.00
Best plate of Australian Navel Oranges 3.00
Second do 2.00
Best plate of Malta Blood oranges 3.00
Second do 2.00
Best plate of Paper Rind St. Michael oranges 3.00
Second do 2.00
Best plate of Mediterranean Sweet oranges 3.00
Second do 2.00

CLASS 12.

Best display of lemons $5.00
Second do 3.00

CLASS 13.

Best lemon ..... $ 5.00

CLASS 14.

Best display of Limes ..... $ 3 00
Second best display of Limes 2.00

CLASS 15.

Best box Muscat Raisins ..... $ 5 00
Second do 3 00
Third do 2 00
Best box Sultana Raisins 3.00
Second do 2.00
Best box of Zante Currants 3 00
Second do 2 00
Best box of Figs 3.00
Second do 2.00
Best specimen of Preserved Citron 3.00
Second do 2.00
Best specimen of Preserved Lemon 2.00

CLASS 16.

Best specimen of Olive Oil ..... $ 5 00
" " " Pickled Olives 5 00
" " " Limes 2.00

CLASS 17.

Best specimen of Fresh Grapes ..... $ 3 00
Second do. 2 00
Best specimen of Almonds 2.00
Second do 1 00
Best specimen English Walnuts 2 00
Second do 1 00

CLASS 18

Best display of Winter Apples ..... $ 3.00
Second do 2.00
Best display of Winter Pears 3 00
Second do 2.00

CLASS 19.

Best display of Fruit in Glass ..... $ 3.00
Second do 2.00
Best display of Preserved Fruit in Glass 3.00
Second do 2.00
Best displays of Jellies in Glass 3 00
Second do 2.00
Best specimen of Orange Jelly 2.00
Best specimen of Orange Marmalades 2.00

CLASS 20.

Best exhibit of Dried Apricots ..... $ 2 00
Best exhibit of Dried Peaches 2.00
Best exhibit of Dried Apples 2.00
Best exhibit of Dried Pears 2.00
Best exhibit of Dried Prunes 2 00

CLASS 21.

Best display of Flowers ..... $ 5.00
Second do 3.00

RULES ADOPTED FOR THE GOVERNMENT OF THE EXHIBITION.

1.—All fruits entered for premium must be grown by the exhibitor

2.—Each exhibit of Citrus Fruits must consist of at least six specimens.

3. All entries from Riverside must be in by Tuesday afternoon, the 21st, and from all other parts of the State by noon on Wednesday, the 22d

4. All exhibits must remain until the close of the Exhibition, at which time premiums will be paid.

5. Parties residing in districts affected with red scale are requested to be very careful in selecting specimens to be furnished for exhibition, as no fruit affected with that insect will be exhibited.

6.—For the purpose of determining the best orange, the prize varieties as determined by the Committees in Class 7 and 8 will be selected for comparison

7. Exhibitors from abroad are requested to send four extra specimens for the use of the Awarding Committee

8.—The Awarding Committee will be announced on the morning of the second day

9.—The Committee would suggest that all oranges intended for competition for quality, should be picked at least ten days, and the lemon one month before the date of exhibition

ADMISSION FEES

Season ticket, not transferable, admitting one person to the hall during the Exhibition $1.00
Season ticket for children under 12 years 50
Single entry, adult person 25
Children under 12 years 15

The exhibition will open at 1 P. M. Wednesday, March 22d, and the evenings will be devoted to the discussion of topics connected with citrus culture.

The committees of awards will meet in the hall at 9 A. M. Friday, March 24th, to award the premiums, and the reports of awards will be made in the evening of that day.

Fruit growers will please notice that the territory of California in which citrus and semi-tropical fruits are grown has been divided into three districts, and the premium list so arranged as to enable the growers of citrus fruits in these districts to compete with each other in the matter of display, while competition is open to all for other premiums. Also, that the Riverside Land and Irrigating Co. has very generously offered to pay all freight and express charges of fruit sent to the exhibition.

The success which has attended our experiments of the past three years in bringing together the citrus fruits of southern California cannot be over estimated. It has stimulated the production of the very best varieties, aided us in perfecting our method of cultivation, and drawn the attention of those interested in fruit growing to this coast.

Riverside citrus exhibitions are now one of the permanent institutions of California, and are visited by persons from all parts of the country. So numerous have been the exhibits and so great the attendance, that it has made it necessary to provide more commodious quarters. An association of citizens of Riverside, with their accustomed liberality and enterprise, have built a large and handsome pavilion 135x56 ft., in which future citrus exhibitions will be held. This pavilion will be ready for use on the date fixed for the exhibition. May we not expect that all persons interested in the culture of citrus fruits will attend and contribute by their presence and products to the interest and success of that occasion. H. J. RUDISILL, Manager.

Albert S. White, James Bettner, B. D. Burt, Executive Committee.

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WITH APPENDIX ON GRAPE CULTURE.

Table of Contents.

CHAPTER. PAGE.
Preface .....
1. Introductory Remarks on Orange Raising .....
2. Selection of Seed, and How to Raise the Plants .....
3. Selection of a Site for a Nursery .....
4. Transplanting to the Nursery .....
5. Selection of Site for an Orange Orchard .....
6. Selection and Purchase of Trees .....
7. Plan of an Orchard .....
8. Transplanting to Orchard .....
9. Cultivation .....
10. Irrigation .....
11. Crops Admissible in Young Orchards .....
12. Fertilizing .....
13. Pruning an Orange Orchard .....
14. Diseases of Orange Trees .....
15. Destructive Insects, and Remedies .....
16. Enemies Protection, Prevention and Cure .....
17. Age at which an Orange Orchard will Begin to Fruit .....
18. Profits of Orange Growing—Ten Acres Enough .....
19. Picking and Packing .....
20. Cost of Planting an Orange Orchard in California and Conducting it to a Paying Basis .....
21. Our Markets, Present and Prospective. Over Production Considered .....
22. Where Can Orange Trees be Successfully Grown in in this State .....
23. Varieties .....
24. Best Varieties to Plant .....
25. Seedling Versus Budded Trees .....
26. How to Bud .....
27. Grafting .....
28. Propagating by Cuttings and Layers .....
29. Stocks for Budding and Grafting .....
30. Lemon Culture .....
31. Limes .....
32. Citrons .....
33. Orange Wine and Brandy .....
34. Rules for Ascertaining the Average Number of Trees or Plants that Can be Set on an Acre .....
35. Recipes .....

Preface of the Author.

For a number of years I have thought of putting my extensive practical experience in citrus culture into book form, and now, at the earnest request of numerous friends, I shall, for the benefit of those who are seeking information in semi-tropical fruit culture, proceed to carry my purpose into effect, hoping that this will be a profitable guide to this most interesting and remunerative industry.

A residence of 28 years in this State, the last 16 of which have been devoted exclusively and uninterruptedly to semi-tropical orcharding and nursery business, enables me to write from a practical standpoint possessed by few. A lover by nature of the beautiful in horticulture, I have applied myself assiduously to assist in developing the latent interests of the business of citrus culture, by endeavoring to procure the best of the different species, by propagating and experimenting on a large scale, and carefully noting the different varieties. The field has been and still is wide and ample. However much I may have learned, I feel that we are only on the threshold of learning what are the most successful conditions for the profitable citrus culture of the future.

I shall endeavor to present the subject in as brief a form as possible consistent with the many ramifications of the business, using no technical phrases, the object being to adapt the work to the understanding of all that may at any time be engaged in the business.

It is important that all that venture in this business start right. This book is written to enable them to avoid many of the sunken rocks on which hundreds have been wrecked. I do not purpose to present myself vainly and egotistically to the public as one who has learned all there is to know about citrus culture, but as one who is willing to give his long and practical experience conscientiously.

I believe there is yet much to be learned on this subject, and that this may the more speedily be done, I record my views, believing that by comparing them with the experience of others the object may be sooner attained.

It was my intention to write a chapter on the history of orange culture in Southern California, but the want of reliable historical data does not justify the attempt.

Hopeful that this work will fill a niche unoccupied at present, and that it will result very beneficially to this advancing branch of horticulture, I humbly dedicate it to all lovers of the beautiful in nature, and especially to all lovers of this health-giving, profitable industry.

THE AUTHOR.

An Important Work,

This book is written by Thos. A. Garey, of Los Angeles, after many years of practical experience and observation in orange culture. The subject is an interesting as well as important one, containing information which all reading Californians should possess, whether engaged in orange or grape culture or not.

There are few writers in America who could have contributed more richly or abundantly on this subject than has the author.

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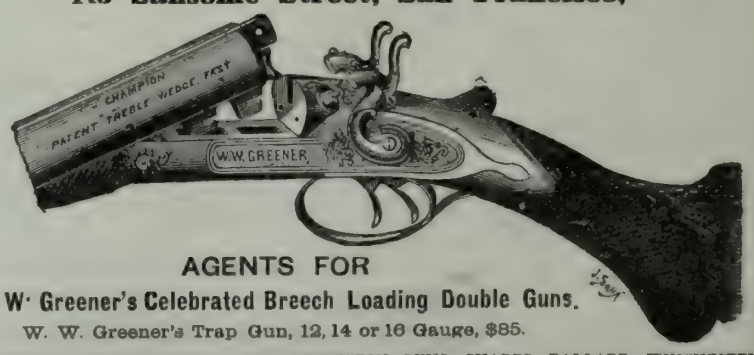

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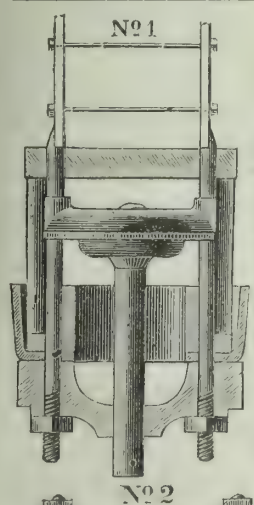

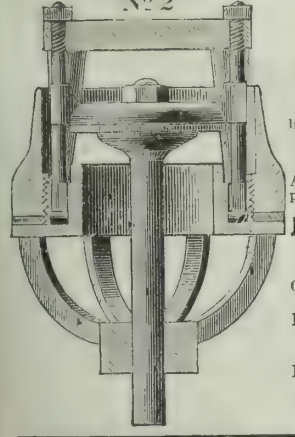

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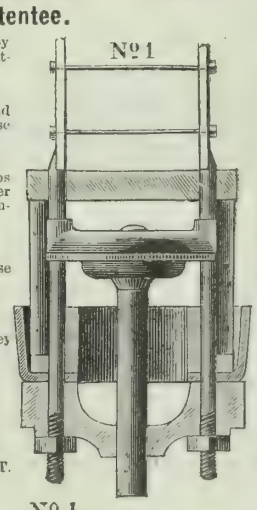

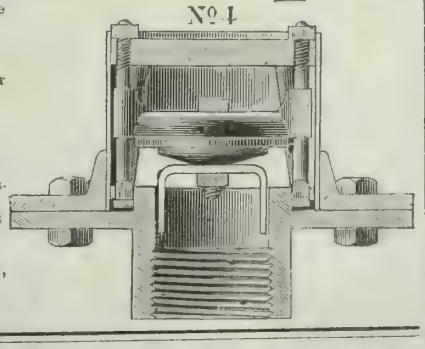

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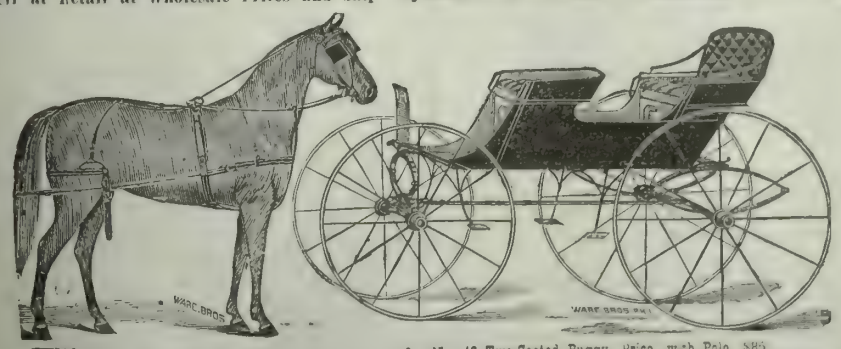

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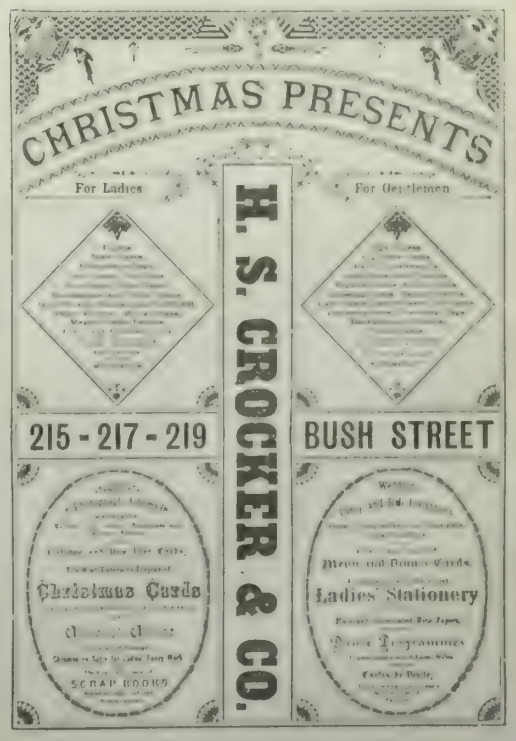

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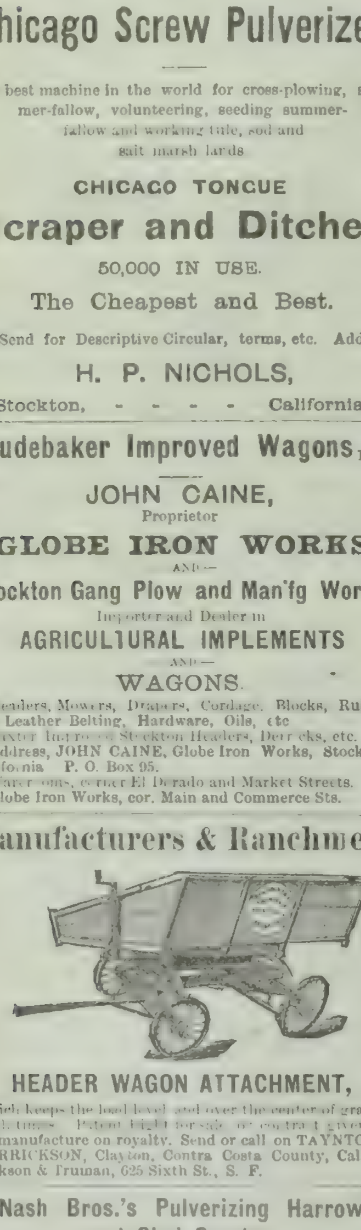

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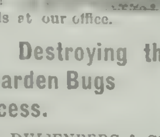

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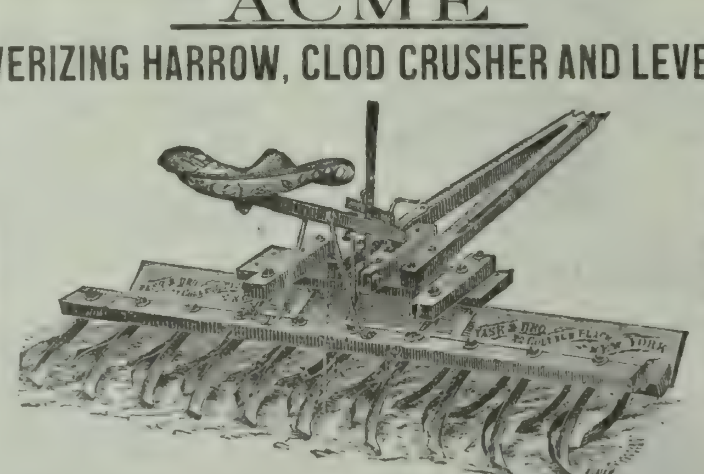

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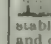

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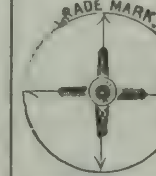

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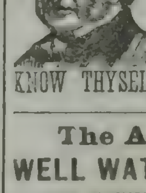

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Fruit Growing in Southern California.

[CONTINUED FROM PAGE 198.]

of fruit, varies from a coarse gravel to a heavy, rich loam. By means of irrigation on the lighter and coarser soils, no great difference can be seen in productiveness. Opinions on kinds of oranges best for culture are frequently governed by the varieties the owner has under cultivation. The opinions of those who have all kinds, and not interested to advocate any individual variety, is that the ones named are best; perhaps the Duroi should be added.

San Bernardino.

JOSEPH JARVIS, Riverside.

Apples.—Apples do not thrive.

Pears.—The best pears are Seckel, Bartlett, Flemish Beauty, Winter Nelis, Vicar of Winkfield. Soil, light adobe.

Peaches.—Early Crawford, Beatrice, Briggs' Red May, Alexander, Late Crawford. Foster Smock's Free and Rare Ripe are best, and all thus far are free from curl. Soil, sandy loam and adobe.

Apricots.—Moorpark, Royal Hemskirk, Early Golden. Peach, Large Early, are valuable about in the order named.

Nectarines.—Nectarines are thrifty growers, but shy bearers.

Cherries.—Cherries grow freely but do not fruit.

Small Fruits.—I grow no currants, raspberries nor gooseberries. Lawton blackberry and Wilson strawberry I consider best.

Almonds.—Almonds do not bear regularly nor well.

Walnuts.—Walnuts and chestnuts are not yet in bearing.

Citrus Fruits.—The orange does wonderfully well. If budded, the Washington Navel, Mediterranean Sweet, St. Michael and Duroi are preferred, though many still consider the seedlings best. The lemon does moderately well, the Lisbon and Sicily being preferred.

Olives.—There are no trees in bearing, though young trees are growing very thriftily and give good promise.

Figs.—Figs do well. The White Smyrna, White Genoa and Red Turkey are best.

Irrigation.—We irrigate trees from three to five times during the season.

JOHN HALL, Riverside.

Apples.—Red June and White Bellefleur do best. Soil, sandy loam.

Pears.—The Bartlett is best.

Peaches.—George Fourth and Early York. Late Crawford and late clingstone seedling peaches are best. The late Crawford curls least.

Plums.—Plums are counted a failure.

Apricots.—The Moorpark is most highly esteemed.

Nectarines.—The red kinds are most thrifty and best.

Prunes.—Prunes have been tried and proved a failure.

Almonds.—Almonds bear irregularly and poorly.

Citrus Fruits.—The orange succeeds admirably. The best varieties are Navel, Mediterranean, Sweet and Seedling.

Olives.—The olive is doubtful.

Figs.—Figs would do well but for the birds.

Irrigation.—Trees are irrigated once a month from May until November.

Remarks.—Lemons will grow on the mesa, but not in the arroya. Our main dependence is on our raisin vineyard; other fruit is secondary. We are thinking of setting out an orchard of Moorpark and Royal apricots. We have tried prunes and plums; they blossom well, but do not perfect. Almonds blossom first-rate, but bear only scattering nuts every other year.

JAMES BOYD, Riverside.

Apples.—The Red Astracan, Gravenstein, Yellow Bellefleur and Yellow Newtown pippin are best. Soil, red clay loam.

Pears.—Madeline, Bartlett and Winter Nelis pears succeed best.

Peaches.—Early Tillotson, Crawford, Late Crawford, Smock and Lemon Cling peaches are best. All curled more or less in 1880. Seedlings curl most.

Plums.—No plums do well.

Apricots.—The Royal and Moorpark apricots are best.

Nectarines.—The Hartwick is thriftiest and best.

Cherries.—Cherries do not bear.

Small Fruits.—Currants do not succeed. The sun is too hot for gooseberries. The Kittatinny is the best blackberry. It is too hot for raspberries. Wilson's Albany is the only strawberry I have tried, and it bears well with good care and plenty of water.

Nuts.—Almonds do not bear well. Walnuts not of bearing age.

Citrus Fruits.—The orange does well. The Naval and Mediterranean Sweet are preferred varieties. The lemon succeeds, the Lisbon and Eureka being the best varieties.

Olive.—So far my seven-year-old trees have borne lightly.

Figs.—Figs do well, especially the small white Smyrna.

Irrigation.—Usually apply water once a month from June to October, also in December, if we have a dry fall.

Remarks.—In regard to oranges, budded fruit has not thus far shown any superiority to seedling fruit; but Navel and Mediterranean Sweet are thornless or nearly so, and for this reason preferable. They also bear earlier than seedlings, but I do not count this any special advantage, as you cannot expect fruit until you have a tree to hang it on, and budded trees grow no faster than seedling, and the probability is that you will have taken as much fruit from a 12-year-old orchard of seedlings as you would from budded trees of the same age, if you count the age of the stock you budded into.

D. W. MCLEOD, Riverside.

Apples.—Red Astracan, Yellow Bellefleur, and White Winter Pearmain are best.

Pears.—Bartletts and Winter Nelis are preferred.

Peaches.—Hale's Early, Early Crawford, Briggs' May, Amsden's June, Solway, Late Crawford, White Heath, Oldmixon, Lemon Cling and December are the best peaches in their seasons. There is very little, if any, curl leaf.

Plums.—None grown.

Apricots.—Moorpark, Hemskirk, Royal and Early Golden are best.

Nectarines.—I have fruited none but the red nectarine. It bears fairly.

Cherries.—Cherries will not bear.

Prunes.—Petite d'Agen

Small Fruits.—No currants, raspberries or gooseberries are grown. The Kittatinny and Lawton blackberries are best. Strawberries do well.

Citrus Fruits.—The orange does admirably; Seedling Navel and Mediterranean Sweet are the best varieties. The lemon succeeds; Lisbon, Sweet Rind and Eureka are best varieties.

Olive.—The olive bears every other year.

Figs.—Figs do well; the white and brown Ischia are best.

Irrigation.—From three to five times during the season.

L. M. HOLT, Riverside.

Apples.—The Red Astracan, Gravenstein, Red June and Early Harvest, Yellow Bellefleur, White Bellefleur, Golden Russet and Gloria Mundi; Rhode Island Greening and Ben Davis do best in their seasons.

Plums and Prunes.—They are only grown on a small scale.

Apricots.—Moorpark, Early Royal and Golden are best.

Nectarines.—Nectarines are not much grown.

Cherries.—Do not bear well.

Small Fruits.—No currants nor gooseberries are cultivated, and raspberries are of no account. Lawton and Kittatinny blackberries are grown, but neither are considered profitable. Strawberries are grown only in small patches.

Nuts.—Almonds are not largely grown. They do not bear well. Languedoc in some cases are borne well if mixed with King's variety in the same orchard. English walnuts do not bear satisfactory crops. No chestnuts are grown.

Citrus Fruits.—We consider this the "boss" valley of the world for raising oranges and other citrus fruits. Riverside Navel, Australian Navel, Meiterranean Sweet or Duroi, St. Michael, Malta Blood, Konah, are the favorites, though many prefer the seedlings. The lemon succeeds so far as tried; Eureka and Lisbon are the best varieties.

Olives.—Olives have not been thoroughly tried.

Figs.—Figs are a success.

Irrigation.—Irrigation is necessary for all kinds of fruit trees. Orchards are irrigated usually every five or six weeks. A few growers irrigate but two or three times each season

E. G. JUDSON, Lugonia.

Apples.—Not many apples are grown in my immediate vicinity. Red June and Red Astracan are grown. The former does well, but the latter is often dry and poor; some seasons good.

Pears.—Pears are little grown; the Madeline is the only summer pear here, and it has a great tendency to decay early. The best fall pear is doubtless the Bartlett; its flavor is unexcelled, and it is, we may say, the only fall pear grown. Winter Nelis and Easter Buerre are, as far as known, the best winter pears, being of fine flavor and good shippers.

Peaches.—Peaches do well—exceptionally so, but only on the warmer, dryer soils. There is little curl-leaf, except on seedlings. Last season, 1880, seedlings were much affected by it, yet my own budded trees were not injured, and from observation, it was hard to say which felt it the most, or rather the least. I regard the Beer's Smock, Smock's Late Free and Lemon and Heath Clings as our most valuable peaches. I have fruited many kinds, but only one season, and cannot say much about them at present. Kinds like Rareripe, Crimson, Galande, Salway, Cooledge Fav., Grosse Mignonne etc., appear to do well.

Nectarines.—I regard New White as the best, but it has not been tested long enough to prove its bearing qualities. Hardwick is the only kind which is known to be a thoroughly reliable bearer.

Apricots.—Among apricots, Large Early bears better than any other variety. Moorpark bears well, and is the best flavored. Early Golden and Royal are not grown enough for me to speak reliably about. This section is well adapted to apricot culture.

Berries.—Very few berries are grown.

Nuts.—Almonds are hardly worth mentioning. They do not bear well, but parties have paper-shell grafted on hard-shell which have borne well since grafting, a few years ago. English walnuts bear well. Young chestnut trees are thriving, but have not reached bearing age.

Citrus Fruits.—The orange succeeds well. Seedlings are best; next come Navels, next Mediterranean Sweets. The lemon trees, as elsewhere in California, were badly injured by the frosts of 1879-80. The Lisbon lemon is preferred.

Olives.—The olive does well so far as tested. There are not many trees grown.

Irrigation.—We irrigate about once in three weeks, from June to October, for deciduous fruits; for citrus fruits, once in five weeks, from the middle of June to the first of September. I believe I have irrigated more than is necessary, and shall not water so much in future.

PARISH BROS., San Bernardino.

Apples.—Winter apples, Missouri Pippins, Romanite and Ben Davis are most satisfactory. Soil, rather sandy loam—a little alkaline.

Pears.—The Bartlett, De l'Assumption and Seckel are the best fall pears—the latter very large and fine. Winter Nelis, Beurre Rances (early winter) and Beurre Easter are the best winter pears. Soil, rather heavier than that on which we grow apples, with considerable alkali. A moderate amount of alkali seems of advantage.

Peaches.—Parson's Early and Hale's Early, Amsden's, Alexander, and Briggs' Red May are the best early peaches. We have discarded all the Rivers seedlings. Reeve's Favorite, Mission Dolores, President, Stump and Grosse Mignonne are the best late freestones. Of late clings, the Lemon cling is the favorite, but any good-sized yellow cling answers to that name at the canneries. We have absolutely no trouble with curl-leaf, or other disease, in any variety of peach. Our peaches are on moderately to very sandy loam, with very little alkali.

Plums.—Plum trees grow very well, but all varieties we have tried or seen tried are very irregular bearers. They occasionally have a heavy crop, but usually none. The improved Chickasaws are more certain. The best are De Caradeuc and Wild Goose. Soil, heavy clay.

Apricots.—Most of the bearing trees are Moorparks; an irregular bearer. Newer kinds have not fruited enough (1880) to show their quality.

Nectarines.—Our finest nectarines are a local variety known as "Mammoth."

Cherries.—Cherries do not fruit in the valley. They are being tried in the mountains with good indications.

Small Fruits.—Currants and gooseberries do not fruit well, except in the mountains.

Olive.—The olive does well.

Figs.—Figs succeed everywhere. Smyrna and Genoa are best, but the nomenclature of figs is very much mixed.

Irrigation.—About once a month during the dry season.

Remarks—In San Bernardino valley the apples, although of fine appearance, are not of first quality, lacking crispness and flavor, and are not very good keepers. In the mountains near by very excellent apples are raised. We have over 50 varieties of peaches in bearing. All do well, and we only discard some varieties because there are others of superior quality ripening with them. Foster is better than either of the Crawfords, but much better yet is Reeve's Favorite. All large yellow varieties go to the canners as Crawfords. Amsden and Alexander are practically the same. Geary's Holdon, Bildyeu's Late and December are worthless. Picquett's Late is very promising. Salway is the latest good peach. Shipley's Late Red, which precedes it, is very good quality and bearer; so is Silver Medal. Atlanta, an earlier peach, is one of the very best for quality, but is not long enough in bearing to show as to productiveness. We have a few Bartlett pears on very wet alkaline soil, too alkaline for farming; they bear heavily every year, but the trees are only half the size they would be on less alkaline soil.

S. E. A. PALMER, San Bernardino.

Apples.—Red Astracan, Early Harvest, Gravenstein, Yellow Bellefleur, Wine Sap, White Winter Pearmain are best in their seasons. Soil, sandy loam.

Pears.—Early pears: Bloodgood, Madeline and Des Noanes. Fall pears: Bartlett, Flemish Beauty, Beurre Diel and Sheldon. Winter Nelis, Easter Beurre, Doyenne d'Alencon. The above are the best. The best for shipping are Bartlett and Winter Nelis. Soil, sandy loam.

Peaches.—Oldmixon and Stump-the-World, Crawford's Early and Late, Foster, Susquehanna, George the Fourth, President, Lemon Cling, Salway, Smock, Heath and Ringold's Mammoth are the most satisfactory peaches. The President, the Crawfords, and yellow fleshed peaches generally are least affected by curl.

Plums.—Plums are not to be depended on.

Apricots.—The Large Early and English—a seedling here—are best.

Nectarines.—Elruge and Hardwick are best.

Cherries.—With me, cherries are a failure. In the mountains they are doing well.

Prunes.—Petite Prune d'Agen.

Small Fruits.—Currants, gooseberries and raspberries are not grown. The Kittatinny blackberry and Triumph de Gand strawberries are best.

Nuts.—Almonds are not satisfactory. English walnuts do well.

Citrus Fruits.—The orange does well; the Mediterranean Sweet and Navel are best. Lemons are not grown with any profit; the Eureka and Lisbon are preferred.

Irrigation.—We irrigate in summer about once a month.

San Diego.

J. M. ASHER, San Diego.

Apples—Early apples: Red Astracan, Early Harvest, Gravenstein. Fall: Rhode Island Greening, Jonathan, Fall Pippin. Winter: Yellow Newtown Pippin, White Winter Pearmain, Yellow Bellefleur, Smith's Cider, etc. Soil: mesa and valley with sea breeze.

Pears.—Early: Bartlett, Madeline; others have not been tested. Fall: Flemish Beauty, Louise Bonne, Seckel. Winter: Nelis, Easter Beurre, Glout Morceau. Good valley soil.

Peaches.—Early: Amsden, Early Tillotson, Strawberry, Foster, Early Crawford. Late freestone: Salway, Ward's Late, Smock. Late clingstone: December. Trees on sandy loam and all free from curl-leaf.

Plums.—None are grown by me.

Apricots.—The Royal is best.

Cherries.—Cherries are a failure with me.

Small Fruits.—Houghton's gooseberry grows well, but does not fruit. The New Rochelle and Kittatinny are best blackberries. Raspberries do well on rich valley loam. Wilson's is the best strawberry.

Nuts.—Almonds do not bear well, as a rule. Paper-shell and Languedoc, when grown near the former, do best.

Citrus Fruits.—The orange does well. The leading varieties are Asher's Best, Navel, Malta Blood, although other varieties do well. Lemons do well. Best varieties: Eureka, Olivia and Sweet Rind.

Olives.—Olives do well.

Irrigation.—We irrigate some trees twice a year, others not at all. Peaches especially should not be irrigated unless it is an extremely dry season.

LEVI CHASE, San Diego.

Apples.—But few apples have been bearing many years. Every variety tried has done admirably except the Spitzenberg, which does not give sufficient foliage. Our apples excel in flavor and the trees are free from moth or disease. Soil, gravely loam, mixed considerably with decomposed granite.

Plums.—Plums have not done well, and I do not think they will be a success here.

Apricots.—Royal, Hemskirk and Moorpark do admirably.

Pears.—It is too soon to determine, as my trees have just commenced bearing. The Bartlett, Seckel and Beurre Hardy do very well.

Cherries.—Cherries have not done well. I have no confidence in their success.

Prunes.—Prune d'Agen and German prune are grown; the former has done best so far.

Small Fruits.—Currants have not done well. Gooseberries are not grown. Kittatinny and Lawton blackberries do well, where given plenty of water. I have tried a few raspberries, but have done very little with them. All strawberries do well if attended to, and bear the year round.

Almonds.—Most of our people consider the almond a failure. The trees grow well, but the fruit drops off. Where Paper-shell has been grown with Languedoc both have done better.

Citrus Fruits.—The orange does well. The best varieties are Wilson's Best, Navel and Mediterranean Sweet. But few lemons are grown yet, but Swan and Higgins produce fine fruit.

Olives.—The olive does splendidly. It is not subject to scale or disease. I have 600 trees that I have never washed, and no scale has been seen. They bear well.

Figs.—Figs do not do very well. I have no confidence in them as a paying crop.

Irrigation.—Irrigate orange trees two or three times in the season, deciduous trees but once, and nut trees not at all.

Remarks.—The apple is a perfect success with us. The flavor is equal to any Eastern apple I ever saw; far superior to those raised in the northern part of the State. My apples this season sold readily at twice the price apples from San Francisco were being sold at in this market.

G. C. SWAN, San Diego.

Apples—Early Harvest, Gravenstein and Yellow Newtown Pippin do best with me. Soil, clay.

Pears—The best are Madeline, Bartlett and Winter Nelis.

Peaches—Briggs' May, Late Crawford and Lemon Cling are best. Soil, sandy loam and clay loam.

Plums—The Damson does better than others. Soil, clay loam.

Apricots—Royal is preferred.

Berries—The Lawton blackberry and Wilson strawberry do best.

Almonds—Almonds do not bear very well. The Bidwell bears every other year.

Citrus Fruits—The orange does well; seedlings are my preference. Lemons succeed. Seedling Sicily is generally chosen. I prefer the Olivia.

Figs—Figs do well. The Eudrich and Purple are best.

Irrigation.—We irrigate some trees, and others do not. We use water just as the trees seem to need it.

Upper San Joaquin Valley.

[When we began this compilation we intended to include correspondence from the upper San Joaquin valley, which lies below the 37th parallel, but we find we have not room in this issue. At another time we shall present data from other districts of the State.—EDS. PRESS.]

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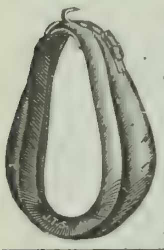

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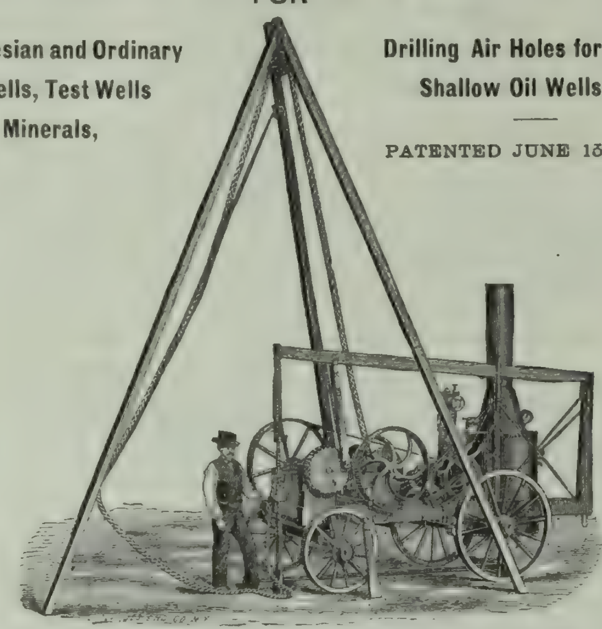

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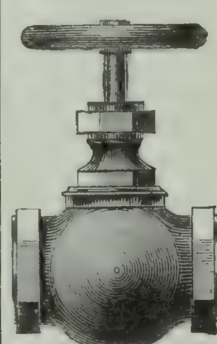

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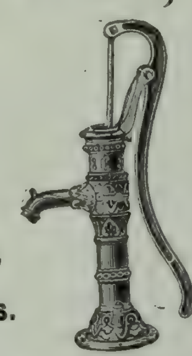

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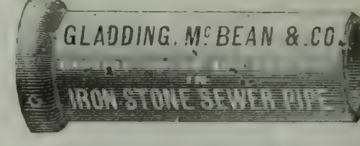

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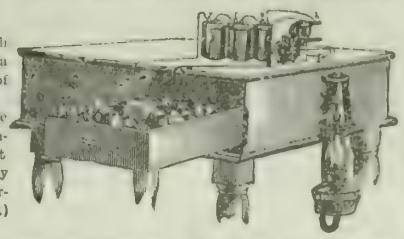

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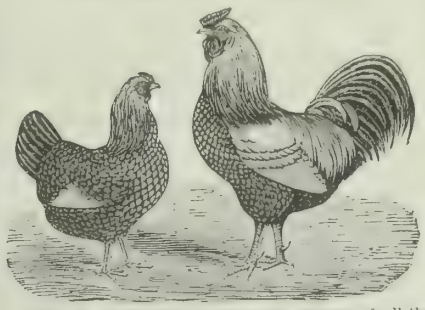

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My Berkshires are Thoroughbred, and selected with great care from the best herds of imported stock in the United States and Canada, and for individual merit cane not be excelled. My breeding stock are recorded in the "American Berkshire Record," where none but pure bred Hogs are admitted. Pigs sold at reasonable rates. Correspondence solicited.

JOHN RIDER,
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We have for sale at our farm at Mountain View, thoroughbred

BERKSHIRE PIGS

From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880. Pigs from Imported Boar and Sow, $25 each. From Imported Boar and Thoroughbred Sow, $10 to $20 Our Imported Pigs are as nice Pigs as there are in the State Address JACKSON & TRUMAN, S F.

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Thoroughbred

Spanish Merino SHEEP.

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J. H. STROBRIDGE, Haywards, Alameda Co.
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The undersigned now have for sale a few choice Thoroughbred and high grade bulls from the best milk strains Our herd consists of "Young Marys," "Dauries," "Imp Britannias," etc. Prices Reasonable

HYDE & MOORE, Visalia, Cal.

OIL CAKE MEAL.

Best Food for Milch Cows
Or Fattening Stock.

CHEAPEST FEED FOR SHEEP.

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KITTLE & CO.
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To Fish Raisers.

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J. A. POPPE, Sonoma, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of special mention:

TENSION BRACES.—A. Lawson, Gilroy, Santa Clara Co. No. 253,927. Dated Feb. 21, 1882. This tension brace consists in a wire or other flexible rod so twisted at its middle as to form a double loop somewhat in the form of the figure 8. The ends of the wire project in opposite directions and at right angles with the loop, and are provided on their tips with screw threads. These threads are formed on one end to make a right-hand screw and on the other a left-hand screw, so that when screwed in place, they draw in opposite directions and pull tight on the central loop, which locks itself. The use of this brace is confined to articles the joints of which are liable to separate and need holding together. It may be used on bedsteads, chairs, or tables, etc. In any available corner one of these braces may be screwed and its projecting loop act as a hat-rack or hook or peg on which to hang articles.

HORSE-SHOE.—Wm. Leech, Oroville, Butte Co. No. 253,930. Dated, February 21, 1882. This invention relates to the class of horse-shoes the object of which is to spread or expand contracted hoofs. It consists in two sides pivoted at the front center to a toe-plate, said toe-plate forming a bearing or support for a peculiar spring which lies thereon, and whose ends embrace the rear ends of the sides, whereby its tension is exerted at the ends. The beneficial object is further accomplished by the position of the nails in the shoe, whereby the outward pressure is brought to bear to the best advantage.

CLASP FOR CORSET STIFFENERS.—Christina V. Turner, Nicola Valley, B. C., assignor of one-half to D. K. McMullen, S. F. No. 253,642. Dated Feb. 14, 1882. This invention relates to a device for fastening the whalebones or stiffeners in corsets, and for protecting the corsets from the wear of the ends of the stiffeners. It consists of a small metal clip having points, which pass through the cloth on each side of the stiffeners and are clasped behind, the top being provided with an extension for the insertion of an eyelet, and the whole device being pressed down upon and on both sides of the stiffeners. This device has for its object the holding of the stiffeners in place and the prevention of wear by means of the ends of the stiffeners being forced through the cloth.

PREPARE FOR BUSINESS LIFE.—If parents would only see to it and properly prepare their boys for business before trying to get them into business, they would save great trouble to themselves, the boys and their employers. Moreover, the boys would have some basis to begin with and to build upon, and instead of spending a year or two learning the rudiments and general principles, would begin active work with a knowledge of them already. If such preparation could not be made without great trouble and expense, there would be some excuse for people taking "green" boys around trying to get them places. But when there are such institutions as the Pacific Business College, where a life scholarship can be had for $70, there is no reason why parents should not help the boys out and give them a good start. There they will learn the mysteries of book-keeping in all its branches, learn to write well, and learn practical business details. When they leave, they go prepared to be of some use to their employers, instead of a drag and a source of annoyance, as must be the case when everything is to be learned. The case does not admit of argument. Any one with a boy destined for business pursuits, who neglects to give him the advantages of such an institution, if it is in his power, is responsible for the boys backwardness in business, and the direct cause of his slow advancement.

THE RURAL PRESS IN INYO COUNTY.—An esteemed friend of the RURAL in Round Valley, Inyo county, writes: "I greatly appreciate the PRESS. It ought to have a much wider circulation in this section, and I will endeavor to have it visit more of our farmers. Those who already take it in these settlements speak very highly of the PACIFIC RURAL PRESS. Long may it flourish!"

Postmasters having their attention directed to this notice by the publishers, are requested to act as agent for this paper (whenever they can do so without interference with our published list of solicitors), and we will allow them a favorable commission on subscriptions, as per terms published elsewhere.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances. The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

A TURNED LEAF will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

Pleasure in Recommending, Etc.

OAKDALE, Stanislaus Co., Cal., March 6, 1882.

Messrs. Dewey & Co.—DEAR SIRS: I hereby acknowledge receipt of patent with copies, for which please accept my sincere thanks. I shall take pleasure in recommending your agency when I have an opportunity.

Yours Truly, J. M. NELSON.

Try the Rural Press for 25 Cts. a Month.

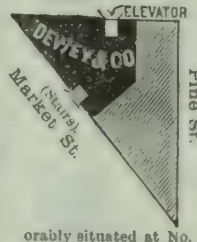
Tell your friends that they can have the PACIFIC RURAL PRESS mailed to them one month on trial for 25 cents. Four back Nos. will be added on receipt of 10 cents additional—making eight copies for 35 cents. It is a handsomely printed and illustrated home journal. Mail it to friends abroad.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

Canvassing Agents.

We want several canvassing agents who will make it their business to solicit subscriptions and advertising for our first class progressive newspapers. Men of ability and experience can secure good pay and permanent employment. Send references and state your past occupation, etc., to the publishers of this paper.



Dewey & Co.'s Patent Agency and Newspaper Offices.

Dewey & Co.'s Patent Agency and the business offices of the Mining and Scientific Press, Pacific Rural Press, Pacific States Watchman and the Fraternal Record are now orably situated at No. 252 Market Street. Elevator entrance, *No. 12 Front St., S. F.*

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts and $1 per bottle.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired), be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

REMITTANCES to this office should be made by postal order or registered letter, when practicable; cost of postal order, for $15 or less, 10 cts.; for registered letter, in addition to regular postage (at 3 cts. per half-ounce), 10 cts

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDHOUT & Co., 10 Barclay St., N. Y

S. F. Market Report.

NOTE—Our quotations are for Wednesday, not Saturday the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Mar. 15, 1882.

The generous rains have given new life to business and have started up sales of produce which has been held in hope of high rates if the production was lessened by a dry year. The sales on Call to-day were larger than on any previous day, as will appear in our reports below.

Wheat abroad is doing better. The latest from London is as follows:

Wheat, spot, firmer, 9s 8d@9s 11d for good to choice California; floating cargoes, steady; on passage for shipment, steady; Mark Lane Wheat, quiet; cargoes off coast, 47@47s 6d; nearly due, 46s 6d; just shipped, 44s 6d.

The Foreign Review.

LONDON, March 13.—The Mark Lane *Express* in its review of the British Grain trade for the past week, says: The crop prospects are exceedingly favorable for this time of year. The markets are drooping, supplies restricted and prices mostly 1s@2s lower. Foreign trade continues inanimate. The supply is large, and prices are still declining. They have fallen 2s. The off-coast market is liberally supplied. Twenty-seven cargoes arrived, of which 8 were sold, including a cargo of Red Californian, at 49s. The floating bulk is slightly decreased, about half from America. Trade forward is very quiet and drooping. Flour is freely offered, and values are lower. Foreign is extremely dull, and is lower. There was less inquiry for Barley; foreign is slow. Oats are unchanged, foreign in moderate supply, and values maintained. The supply of Maize is small, and the demand feeble. Quotations, however, are maintained. The receipts of English Wheat for the week were 32,054 quarters, at 44s 9d per quarter, against 34,685 quarters, at 42s 3d per quarter, for the corresponding week last year.

Eastern Wool Markets.

BOSTON, March 11.—There is a steady demand for Wool, and, under the influence of favorable advices from England, prices are well sustained. Sales of the week have been 250,000 lbs of all kinds. We quote sales, as follows: Ohio and Pennsylvania fleeces, 43@45c, including choice XX at latter rate; XXX at 46@46½c; good average lots XX from 44c. Some holders are not disposed to sell under 45c. Michigan and Wisconsin fleeces have been selling at 41@43c, and have been in moderate demand. Ohio No. 1 has been selling at 47@48c. Combing and delaine selections are firm and in demand; prices range from 46c to 49c for fine delaine, and for fine and No. 1 combing. Unwashed combing and dull, coarse and low combing are about as unsalable as ever. The demand is almost exclusively for fine grades. Unwashed Wools have been in demand, with a considerable number of sales, largely of fine Wools, at 26@33c per lb. California Wool is scarce, and the sales are odds and ends that are now on hand. Holders are closing out their old stocks to prepare for the spring clip. Pulled Wools are in demand and firm. Choice supers sell at 45@52c; common to good, 28@43c. Choice California pulled sells at 45@50c. Australian Wool has been in demand, and sales are reported of 434,000 lbs at 46@48½c for combing, and 44@46c for clothing grades. Other foreign Wool has been quiet, and there have been no sales of importance.

BOSTON, March 14.—The Wool market remains steady and firm with a fair demand. Advices from abroad are favorable and impart a better tone to the market. Ohio and Pennsylvania are quoted at 42@45c for XXX, with choice selections a shade higher. Michigan and Wisconsin at 41, 43@44c. Medium fleeces at 45@48c, as to quality and condition. Combing and selections are scarce and met with a ready sale at 46@50c for fine delaine and medium combing. In unwashed fleeces sales have been principally of fine grades at 25@32c, according to quality. California Wools are quiet. The stocks on hand are not desirable, and are being sold out at low prices. Pulled Wools are steady and in demand. Choice Eastern and Maine supers at 45@52½c, and common and good at 28@43c. There is considerable inquiry for Australian, but nothing of any consequence has been done since the large deals of last week. Carpet wools are quiet.

London Wool Sales.

LONDON, March 13.—At the Wool sales to-day 10,900 bales were sold, comprising Port Phillip, Queensland and Sydney. There was a good demand, and rates were maintained.

Freights and Charters.

The storm improves the prospect of a heavy wheat crop and ship owners are not slow to elevate their views. They put their price at £3, although charters were effected a few days ago at £2 10s. The chartered Wheat fleet in port has now a register of 61,562, or a carrying capacity of 92,343 short tons, or 1,846,860 ctls, against 48,090 tons at the same time last year. The disengaged tonnage in port has now a register of 20,151, or an export capacity of 30,226 short tons, or 604,520 ctls, against 12,127 tons at the same time in 1881. There is also a disengaged tonnage of 6,594 at Wilmington. Tonnage now bound for this port has a register of 232,468, against 172,068 at the same time in 1881, and 116,090 in 1880.

Eastern Grain and Provision Markets.

NEW YORK, March 13 h.—The markets are not over active. Wheat is higher. Public news from European markets has been better in purport, with Wheat showing an advancing tendency. Private advices are corroborative as to the better feeling, but fail to convey extensive orders for purchases of American grain, as the relation of values is still against American breadstuffs as compared with the prices at which foreign exporting countries are offering supplies. Barley is quiet. Provisions are quiet and firmer.

BAGS—Sales on Call: 100,000 Calcutta, July del, $9.25 100,000 Calcutta, June and July del, $9.25.

BARLEY—Barley is a shade lower. Sales on Call were many, as follows: 50 tons No. 1 Brewing, Sept. new, $1 22½; 50 tons do No. 1 Brewing, Sept, $1 22½; 200 tons No. 2 Brewing, new, Sept, $1.12½; 100 tons No. 1 Feed, June del $1 45; 100 tons do do, $1.45; 100 tons No. 1 Feed; July, $1.32½; 50 tons do, July, $1.30; 50 tons do, July, $1.30; 50 tons do, July, $1 30; 50 tons do, July, $1 31; 100 tons do, Aug del, $1 15; 100 tons No. 1 Feed, Sept, $1.10; 50 tons No. 2 Feed, July, $1.25; 50 tons do, Sept, $1.07½ 100 tons do, Sept, $1.02½; 100 tons do, Sept, $1.05; 100 tons No. 1 Feed, June, $1.45.

BEANS—There is little change, except that Bayos are quotable 25c lower ℔ ctl.

CORN—There is no trade, and quotations are nominal

DAIRY PRODUCE—Butter is coming freely and has a downward tendency. Cheese is about the same as before.

EGGS—Eggs have shaded off 1c; the best bringing 20c.

FEED—Bran and Middlings are considerably cheaper, as shown in our list.

FRUIT—There is no change in California Citrus Fruits. Mexican Limes are $2 50 lower ℔ box.

FRESH MEAT—The high price of Beef contin ues Some carcases sell higher than Beef has sold for six years in this market, excepting fancy Christmas Beef. Lamb is a little lower.

HOPS—Hops are very dull and quoted lower. At New York by telegraph they are quoted dull and easier.

OATS—Sales are few. Prices about the same as last week.

ONIONS—Onions are much cheaper. Some poor ones sell as low as 40@50c and the best are quotable at 90c per ctl.

POTATOES—Potatoes are still higher and in small supply.

PROVISIONS—Trade is good and feeling firm, although rates are about the same as last week.

POULTRY AND GAME—Nearly all kinds are selling better this week. Prices are shown in our list.

VEGETABLES—Fresh Vegetables are shading down slowly, Asparagus, Rhubarb, Green Peas and Mushrooms being about 2c per lb lower than last week. Receipts are still small.

WHEAT—Sales to-day were freer, and the price about 2½c per ctl lower than last week. We note the following sales on Call: 500 tons No. 1 White, Mission Bay, March, $1 62½; 25 tons Extra Choice Sonora, March, $1 65; 500 tons No. Sonora, July del, Porta Costa, $1.53¾; 500 tons No. 1 Sonora, Aug. del, Porta Costa, inspection waived, $1.51½; 100 tons, No. 1. White, May, $1.63¾.

WOOL—There is little Wool in now, and there is little to expect in prices until the spring clip appears.

Domestic Produce.

WHOLESALE.

WEDNESDAY M., March 15, 1882.

BEANS & PEAS.		Pecans	13 @ 15
Bayo, ctl	— @3 50	Peanuts	6 @ 6½
Butter	3 75 @4 25	Filberts	14 @ 15
Castor	3 50 @4 00	**ONIONS.**	
Pea	— @4 75	Red	— @ —
Red	2 50 @3 00	Silverskin	60 @ 90
Pink	2 50 @3 00	Oregon	— @ —
Large White	3 00 @3 25	**POTATOES.**	
Small White	@4 75	Early Rose	2 07½@2 10
Lima	— @6 00	Petaluma, ctl	2 30 @2 37½
Field Peas, b'lk eye	50 @1 75	Tomales	2 25 @2 35
do, green	2 00 @2 25	Humboldt	2 49 @2 50
BROOM CORN.		" Kidney	— @1 75
Southern	3 @ 3½	" Peachblow	2 40 @2 50
Northern	4 @ 6	Jersey Blue	— @ —
CHICORY.		Cuffey Cove	— @ —
California	4 @ 4½	River, red	1 90 @2 00
German	6½@ 7	Chile	1 50 @1 55
DAIRY PRODUCE, ETC.		do, Oregon	— @ —
BUTTER.		Oregon Peerless	— @ —
Cal. Fresh Roll, lb	30 @ 32½	Sweet	1 00 @1 25
do Fancy Brands	— @ 32½	**POULTRY & GAME.**	
Pickle Roll	— @ —	Hens, doz	6 50 @ 7 50
Firkin, new	25 @ 30	Roosters	5 50 @ 9 50
Eastern	18 @ 22½	Broilers	6 00 @ 7 50
New York	— @ —	Ducks, tame, doz	8 50 @10 00
CHEESE.		Mallard	2 00 @ 2 50
Cheese, Cal., lb	17 @ 18	Sprig	1 50 @ 1 75
EGGS.		Teal	75 @ 90
Cal. Fresh, doz	19 @ 20	Widgeon	1 00 @1 12½
Ducks	— @ —	Geese, pair	1 50 @2 00
Oregon	— @ —	Wild Gray, doz	1 75 @2 00
Eastern, by expr'ss	— @ —	White do	50 @1 00
Pickled here	— @ —	Turkeys	13 @ 15
Utah	— @ —	do, Dressed	14 @ 16
FEED.		Turkey Feathers, tail and wing, lb	10 @ 20
Bran, ton	15 50 @16 50	Snipe, Eng	2 00 @2 50
Corn Meal	42 00 @43 00	do, Common	50 @ 75
Hay	11 00 @16 00	Quail, doz	75 @ 80
Middlings	26 00 @27 00	Rabbits	1 00 @1 25
Oil Cake Meal	— @30 00	Hare	1 50 @1 75
Straw, bale	62½@— 70	Venison	5 @ 7
FLOUR.		**PROVISIONS.**	
Extra, City Mills	5 25 @5 50	Cal. Bacon, extra clear, lb	12½@ 13½
do, Co'ntry Mills	4 75 @5 00	Medium	12 @ 13½
do, Oregon	4 75 @5 12½	Light	13 @ 14
do, Walla Walla	4 50 @5 00	Lard	13 @ 15
Superfine	3 50 @4 25	Cal. Smoked Beef	11½@ 12½
FRESH MEAT.		Shoulders	9½@ 10½
Beef, 1st qual'y, lb	8½@ 9	Hams, Cal	12½@ 13½
Second	5½@ 6½	do, Eastern	15½@ 16½
Third	4 @ 4½	**SEEDS.**	
Mutton	6½@ 8	Alfalfa	12 @ 13
Spring Lamb	10 @ 15	do Chile	— @ —
Pork, undressed	5½@ 6½	Canary	3½@ 4
Dressed	8½ @ 9½	Clover, Red	14 @ 15
Veal	7½ @ 8	White	45 @ 50
Milk Calves	7½@ 8	Cotton	— @ 20
do, choice	— @ 10	Flaxseed	2½@ 3½
GRAIN, ETC.		Hemp	— @ 5
Barley, feed, ctl	1 55 @1 65	Italian Rye Grass	25 @ —
do, Brewing	1 70 @1 75	Perennial	25 @ —
Chevalier	1 60 @1 67½	Millet, German	10 @ 12
Buckwheat	— @1 75	do, Common	7 @ 10
Corn, White	2 00 @2 25	Mustard, White	1½@ 2½
Yellow	1 87½@1 90	Brown	2½@ 3
Small Round	1 87½@1 90	Rape	2½@ 2½
Oats	1 75 @1 85	Ky Blue Grass	20 @ 25
Milling	1 87½@1 95	2d quality	16 @ 18
Rye	2 25 @2 30	Sweet V Grass	— @ 75
Wheat, No. 1	— @1 62½	Orchard	20 @ 25
do, No. 2	1 57½@1 60	Red Top	— @ 15
do, No. 3	1 45 @1 50	Hungarian	8 @ 10
Choice Milling	— @1 65	Lawn	30 @ 40
HIDES.		Mesquit	10 @ 12
Hides, dry	18 @ 19	Timothy	9 @ 10
Wet salted	9½@ 11	**TALLOW.**	
HONEY, ETC.		Crude, lb	6½@ 7
Beeswax, lb	23 @ 25	Refined	9½@ 10
Honey in comb	14 @ 18	**WOOL, ETC.**	
Extracted, light	9 @ 10	FALL—1881.	
do, dark	7½@ 9	San Joaquin	10 @ 13
HOPS.		do, Lamb	13 @ 15
Oregon	20 @ 21	Southern Fall	10 @ 12½
California, new	22 @ 25	do lambs'	13 @ 14
Wash Ter	19 @ 20	Northern, free	16 @ 20
Old Hops	— @ —	do, defective	14 @ 16
NUTS—Jobbing.		Mountain, free	16 @ 18
Walnuts, Cal	10 @ 11	do, slightly seedy	13 @ 15
do, Chile	7½@ 8	Humboldt & Mendocino	20 @ 21
Almonds, hd shl'd	8 @ 10		
Soft shell	14 @ 15		
Brazil	10 @ 11		

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., March 15, 1882.

FRUIT MARKET.		Pears, sliced	— @— 9½
Apples, bx	1 00 @ 3 00	do whole	— @— 8
Bananas, bnch	2 50 @ 4 00	Plums	— @— 6
Cocoanuts, 100	6 00 @ 7 00	Pitted	— @— 14
Cranberries, bbl	12 50 @14 00	Prunes	— @— 12½
Limes, Mex	16 00 @17 00	Raisins, Cal, bx	— @ 2 50
do, Cal, box	2 00 @10 00	do, Halves	— @ 2 75
Lemons, Cal, bx	2 00 @ 3 50	do, Quarters	— @ 3 00
Sicily, box	6 50 @ 7 50	Eighths	— @ 3 25
Australian	— @ —	Zante Currants	— 8 @— 10
Oranges, Cal, bx	1 50 @ 3 00	**VEGETABLES.**	
do, Tahiti M	— @ —	Artichokes, doz	— @— 50
do, Mexican	15 00 @17 00	Asparagus, lb	— 18 @— 22½
do, Loreto	— @—	Beets, ctl	— @— 65
Pears, box	— @ —	Cabbage, 100 lbs	— 75 @ 1 00
Pineapples, doz	7 00 @ 8 00	Carrots, sk	— 75 @— 90
DRIED FRUIT.		Cauliflower, doz	— 90 @ 1 00
Apples, sliced, lb	— 6 @— 6½	Garlic, lb	— @— 1½
do, evaporated	— 10 @— 11	Lettuce, doz	— 10 @— —
do, quartered	— 5 @— 5½	Mushrooms, lb	— 8 @— 10
Apricots	— 15 @ — 17	Okra, lb	— 5 @— 8
Blackberries	— 14 @ — 16	Peas, green, lb	— 10 @— 12½
Citron	— 28 @— 30	Parsnips, lb	— @— 8
Dates	— 9 @— 10	Rhubarb	— 10 @— 15
Figs, pressed	— 4 @— 6	Squash, Marrow	
do, loose	— 3½@— 5	Tat, ton	10 00 @12 00
Nectarines	— 14 @— 16	Tomatoes	— @— 12½
Peaches	— 11 @— 11½	Turnips, ctl	— @— 75
do pared	— 14 @— 18		

Signal Service Meteorological Report.

SAN FRANCISCO.—Week ending March 14, 1882.

HIGHEST AND LOWEST BAROMETER.

Mar. 8	Mar. 9	Mar. 10	Mar. 11	Mar. 12	Mar. 13	Mar. 14
30.209	30.184	30.021	30.045	29.953	29.895	29.840
30.137	30.021	29.843	29.955	29.774	29.714	29.753

MAXIMUM AND MINIMUM THERMOMETER.

53	54.5	52	55	60	54	56
45.5	42.5	42.5	43	50	47.5	48

MEAN DAILY HUMIDITY.

68.3	62.3	70.7	71.7	63.3	78.7	73.3

PREVAILING WIND.

W	SW	SW	NE	E	SE	S

WIND—MILES TRAVELED.

291	219	242	227	307	253	247

STATE OF WEATHER.

Clear.	Fair.	Cloudy	Fair.	Cloudy	Cloudy.	Cloudy

RAINFALL IN TWENTY-FOUR HOURS.

	.13	.73	.34	.13	.66	.49

Total rain during the season, from July 1, 1881, 13.76 inches.

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., March 15, 1882.

Eng Standrd Wheat	8½@ 9	45 inch	9½@ 9½
Cal Manufacture		40 inch	8½@ 8½
Hand Sewed, 22x36	8¾@ 9	Wool Sks Hand Swd	
20x36	8½@ 8¾	3¼ lb	— @47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13	Machine Sewed	— @42½
Machine Swd 22x36	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10	Beau Bags	6½@ 7
Quarters	6 @ 6½	Twine, Detrick's A	32½@35
Eighths	4½@ 5	" " AA	35 @37
Hessian, 60 inch	— @12		

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CONCENTRATED LYE,

Manufactured by

Geo. T. Lewis & Menzies Co., of Philadelphia.

THE

AMERICAN LYE

IS THE

Purest, Strongest and Best.

IT WILL GO FARTHER THAN ANY OTHER.

AN INSECTICIDE

AND A

FERTILIZER.

CONCENTRATED LYE has proved itself where used of sufficient strength to be thoroughly reliable and effectual, and has the great property of fertilizing the tree and soil, as potash is one of the natural constituents of both, and is required for the health of the tree. Its use is therefore recommended. Sixty pounds of the Concentrated Lye of the American Lye Co. is equivalent to 100 pounds of commercial potash.—*Report to San Jose Horticultural Society, 1881.*

THE AMERICAN LYE was specially recommended by Dr. Chapin in his address at the Sacramento Convention, and is the standard basis for the alkaline now being used by tree growers in all parts of the State.

WM. T. COLEMAN & CO.,

WHOLESALE AGENTS,

121 and 123 Market St., S. E. cor. Main,

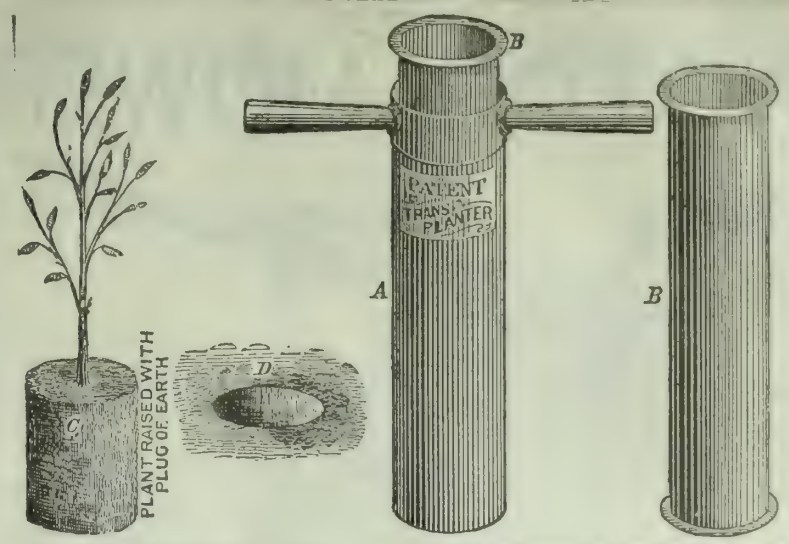
SAN FRANCISCO, CAL.

The Agents beg to notify the Wine Growers and Orchardists that the demand for this **UNRIVALLED BRAND** *has been so enormous as to temporarily deplete stock. We have, however,* **LARGE SUPPLIES** *en route, and now due. Hold your orders. No other Lyes will do the work as well.*

Later!

February 10, 1882.—A large Consignment has just arrived, and all orders will be promptly filled.

WM. T. COLEMAN & CO.



Widney's Patent Transplanter.

There are few inventions possessing so high a degree of labor-saving qualities as the above named. Referring to our engraving, the operator, placing both hands on the handles shown, presses the outer cylinder, *A*, into the ground, and raises with it a column of earth sufficient to leave a hole of the required depth to receive the plant. The inner cylinder, *B*, rests on the surface of the dirt brought up, and ejects it by downward pressure of the operator's thumbs, when the instrument is thrust over the plant into the ground, and brings up with it a plug of earth which is forced quickly and snugly into the first excavation. By a rapid twisting motion a smooth, easy drawing cut is made by the thin edge of the cylinder as it enters the ground. Pouring a trifle of water around the plant fills the slight crevices around the plug and perfects the work. An important object is accomplished by taking the plant or tree, with a solid plug of earth around the roots, undisturbed, and resetting the same in a hole, around which hole the ground is undisturbed and ready to receive and nourish the young roots, thus leaving the plant in as near its natural growing condition as possible.

Plants thus transferred are more than ordinarily certain of life, with less interruption in their growth. To persons having many small trees or plants to transfer from boxes to bed or field, we have no doubt of its value.

The implement is made of various sizes, usually from 2, 3, and up to 8 inches, for taking up and sacking larger trees.

The common-sized transplanters are 2, 2½ and 3 inches in diameter. Others are made to order only. The prices are $2, $2.50, $3 and upwards. It has been in use for several years and given satisfaction to many users, some of whom have each transferred over 100,000 trees by their use. They will transplant from 600 to 1,000 trees per day. R. M. Widney, Esq., is the inventor, Los Angeles, Cal. For sale in San Francisco by Geo. F. Silvester, seedsman, No. 317 Washington St.

Orders filled by mail or express. County and State rights for sale. Address the inventor and patentee, as above, for further information.

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Orders for Goods not in our line will be carefully purchased by experienced buyers. Ranch Supplies and the best Sacks and Twine, Tobacco, Sheep Dips, etc., furnished to customers. Doing business exclusively on commission. Liberal advances made on consignments at low rates of interest. Personal attention given all consignments. We are agents for the

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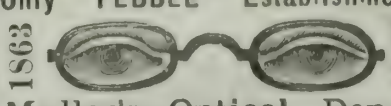
1863  1882

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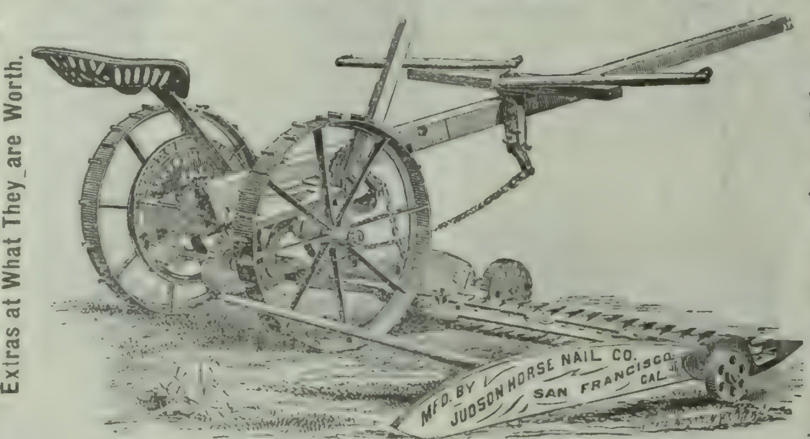

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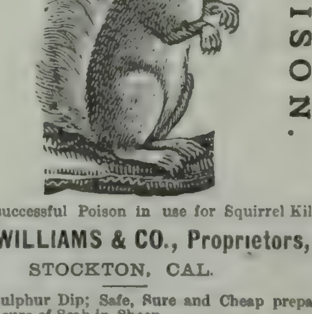

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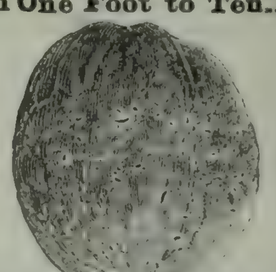

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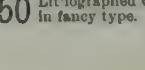

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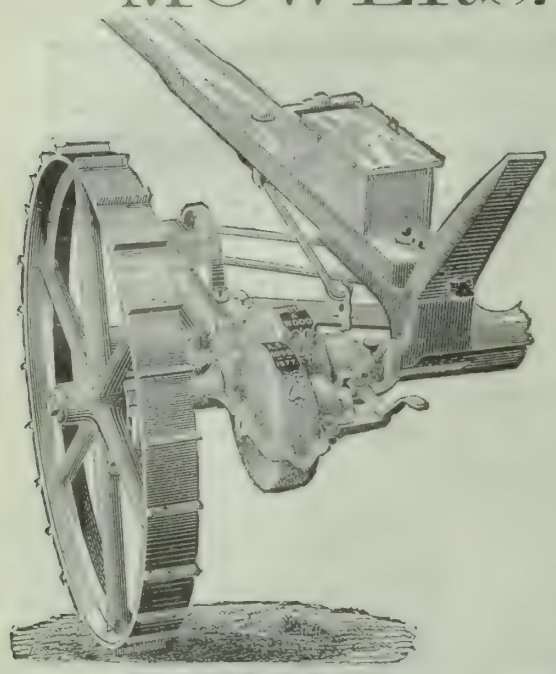
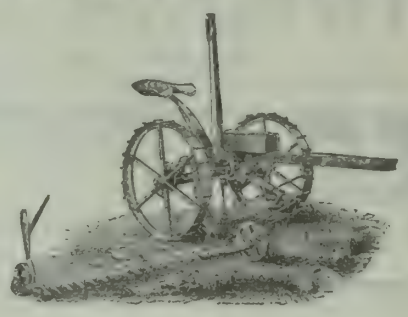


REAR VIEW OF MOWER.



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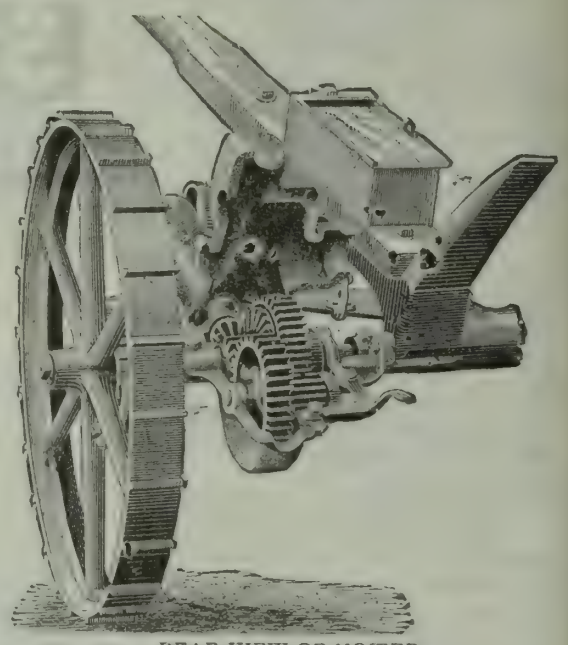

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PACIFIC RURAL PRESS

TWENTY-PAGE EDITION.

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Propagating Vines by Layering.

The time for vine propagation by cuttings is well nigh past. Ere long the canes will be starting forth, and the next method of vine propagation will be by layering. We propose to give thus early an account of several methods of layering, so that the practice may be thoroughly considered before the time comes for experiments, if any of our readers should desire to make them. The last report of Mr. Wetmore, Chief Viticultural Officer, contains a translation from the French of Gustave Foex, with illustrations, and from this we draw, by permission, the following review of layering, condensing it somewhat to suit our present purpose:

Layering consists, for the vine, in causing the cane to put forth roots before it is detached from the plant that gave it birth. This process, which, like propagation by cuttings, preserves in the new vine the characteristics peculiar to the mother stock, and even to the cane, offers the advantage over this last of better assuring the rooting of the new plant; moreover, its separation and setting out in place is not effected until it is possessed of all organs necessary for its existence. Therefore, should it be preferred, although its execution may be a little more complicated, for species or varieties difficult to root by cuttings, or for rare or precious varieties, in propagating which we seek to avoid the smallest loss.

We shall examine successively the following points appertaining to layering:

1. Principal methods of layering.
2. Means of facilitating the rooting of layers.
3. The most favorable time for layering.

The principal methods of layering used are the following:

A. Simple layering; *B.* Bedding the plant; *C.* Chinese or multiple layering; *D.* Inverse method of layering.

A. Simple layering may be employed for the production of rooted plants for replacing on the premises stocks that are lost in a plantation, to free an American cane grafted on a European stock, or for producing rooted internodes destined to serve as subjects for grafting in the workshop. When it is a matter of producing rooted plants, a portion of the cane is simply bedded in the earth as near the mother stock as possible. The extremity of the cane is then raised up so as to have one or two eyes emerging from the ground. All the intermediate buds between the beginning of the cane and the point of its penetration in the soil are cut off, so as to prevent their devoloping to the detriment of the layer itself. The subterranean passage of the cane should be as short as possible, so as to save the wood, the extremity of which may serve for a cutting; and to avoid the formation of too many tufts of roots, these last developing individually as much less as they are more numerous. Ripened or only herbaceous canes may be layered thus. In the latter case we gain time, since roots are formed in the same year in which a cutting would have had to be ripening. When vines thus rooted are dug up to be transplanted, it is well before planting them to cut them so as to leave only one or two tufts of healthy roots on them, these organs then growing much larger than they would if more had been left.

Simple layering, as we have seen, may also be used to replace a stock that is lost in a plantation, or to free an American cane grafted on a European vine; in these two cases the layer must remain where it has been established. Layering, under such circumstances, is done as follows (Fig. 1): After having found the place of the dead plant, and having carefully dug out its roots, a trench, deep enough for the embedded cane not to be disturbed by tilling (about one foot), is opened between the mother stock and the spot where the new vine is to be installed. A cane of sufficient length is chosen, and, and, as far as possible, from those that cannot be utilized for bearing spurs when the vine is pruned; it must be made to penetrate the trench as near the root of the plant as possible, so that it may be protected from accidents that might happen to it during cultivation; then it is bedded at the bottom of the ditch, then raised vertically at the desired point and fasteed to an stake driven into the ground; the trench is filled with very mellow earth that is pressed firmly down on the cane. Finally, the emerging part is cut so as to leave only two eyes above ground, and the intermediate buds between the origin of the layer and its point of penetration in the soil, are cut off. Frequently a certain quantity of manure is put, at the outset, into the ditch where the layer lies, in order to favor the development of roots; it seems preferable to manure only the mother stock the first year, and not to fertilize the new plant until after its separation from the parent vine; thus we avoid the invasion of roots from neighboring vines which would otherwise develop greatly in the ditch, and thus mingle unfavorably with those of the cane before the latter are large enough to buffet with them.

When a cane near the plant to be replaced is not long enough to reach the spot the latter occupied, we may proceed, either by a series of successive beddings, repeated from year to year until our end is attained, or by grafting, with the English cleft, on a branch chosen among those best situated, a cane of suitable length, and then treating it in the usual way. By this last process, the variety may be preserved or changed by using, in lengthening it, a cane of the same or of another variety.

Simple layers, destined to remain in their places, are generally severed from the stock at the end of two years; too early a severance abates vegetation for the time being, which is injurious to fructification. Finally, this mode of layering allows us, by taking up, in the winter, the canes imbedded since the preceding spring, and dividing them below each node, to obtain a large number of rooted fragments. Rooted fragments, to which Mr. Champion gave the name of rooted internodes, may be grafted like ordinary cuttings, and perhaps, with somewhat greater chance of success.

B. Layering by Bedding the Plant.—Layering by bedding the plant may be destined, either to replace a lost plant, or to free an American graft on a European stock. This system of layering may be considered, in a general way, as inferior to the others; plants resulting from it are usually neither vigorous nor strong, which must be attributed to the feeble development and bad distribution of the roots, partly developed on old wood and too widely dispersed. Moreover it is a more expensive operation than the preceding. There is no reason for using it, excepting when it is desired to obtain, simultaneously, several layers from the same parent stock, in which case it is better than any other process. This layering is done in the following manner (Fig. 2): A deep ditch is dug, starting from the mother stock and extending to where the new plant is to be installed; the principal roots are taken off the vine until it is sufficiently mobile to be embedded in the bottom of the ditch without being broken or mutilated; then the extremities of two canes are raised above the surface of the ground, one at the point where the new plant is to be, and the other in the very spot where the mother-stock was found. The ditch is then manured well and filled up with well-mellowed earth. By means of ditches, properly situated, several canes may be directed towards various points, and thus many vines be obtained through layering one.

C. Chinese Layering.—Multiple, or Chinese layering, is for the production of rooted plants. It presents the advantage of rendering it possible to obtain the latter in a single season; that is to say, in as short a time as is generally necessary for the production of a cutting, and that without loss of wood. It is done as follows (Fig. 3): A ditch, about 10 inches deep, is dug, starting at the mother stock; a suitable cane is chosen and laid horizontally in this ditch, and kept at two and a half to three inches below the surface of the ground, by means of little stakes to which it is firmly attached. Then all the intermediate eyes between the beginning of the cane and the point where it enters the excavation are cut off. When the vine begins to grow, every bud develops, and as soon as the canes coming from them are six or eight inches long the ditch is filled with the earth previously dug out, which, if of good quality, is simply manured with decomposed dung, or with a mixture of good made earth, mold and sand, if passable or poor.

When the soil lacks freshness, it must be covered with straw and irrigated. During the course of summer, numerous roots develop on the old cane and on the branches coming from it. When the time for planting comes, it is only necessary to take up the layer and divide it into as many parts as there are canes developed on it; each of them constitutes a good rooted vine.

D. Inverse Method of Layering.—The inverse method of layering may be utilized either for replacing a lost plant or for the establishment of an American vine having no foot, by using a cane coming from a vine of this origin, grafted on a European stock. A cane (Fig. 4), of sufficient size and conveniently situated is directed towards the point where the new plant is to be established; its free extremity is then bent down and forced to a depth of from eight to ten inches in a ditch previously manured. All the intermediate eyes between the origin of the cane and the point where it meets the ground, saving the two nearest the earth, must be removed. Roots are developed in the course of the year, and the new plant may be separated from the old the following winter, whatever may be the quality of the soil. Plants produced in this way are generally robust and of good constitution; they freqently yield fruit the same year the operation is performed. In short, this process may be considered as superior to ordinary layering as a means of replacing stocks as well as for the production of rooted plants in places where they are to remain. The only fault to be found is that it hinders plowing during the time preceding its separation from the mother stock, and that it entails too great a loss of wood.

Irrigation and covering with straw, or manure not decomposed, which keep the soil in a fresh condition advantageous for good vegetation, also aid greatly in the success of the operation.

The time that appears best suited for layering ripened canes is that almost immediately succeeding the fall of the leaves. The cane is then prepared, by a sort of stratification, to put forth roots quickly, as soon as vegetation begins. However, exception must be made for soil that is very wet in winter, in which the buds would risk being injured.

When herbaceous canes are used, they should be buried until they are pliable enough to be bent without danger of breaking. In fact, the more tender the tissues are, the more apt they seem for putting forth leaves.

Fig. 1.—Simple Layer.

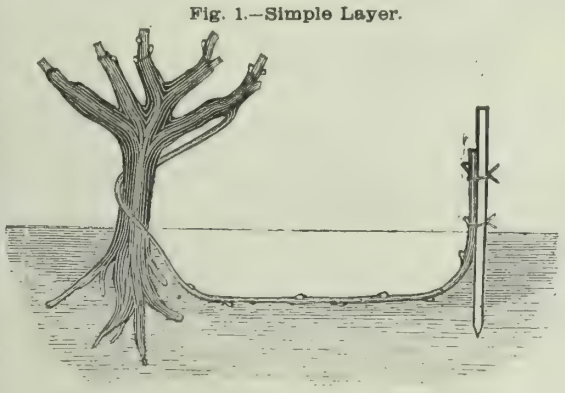


Fig. 2.—Layering by Burying the Vine.

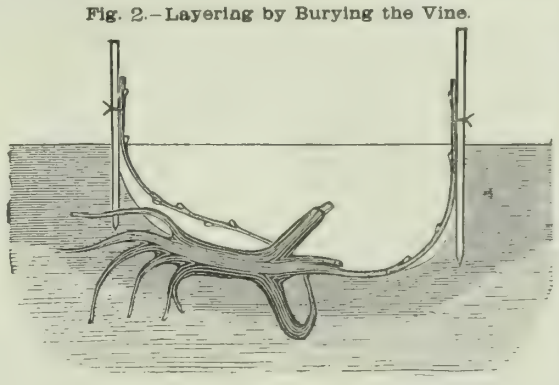


Fig 3.—Multiplied, or Chinese Layer.

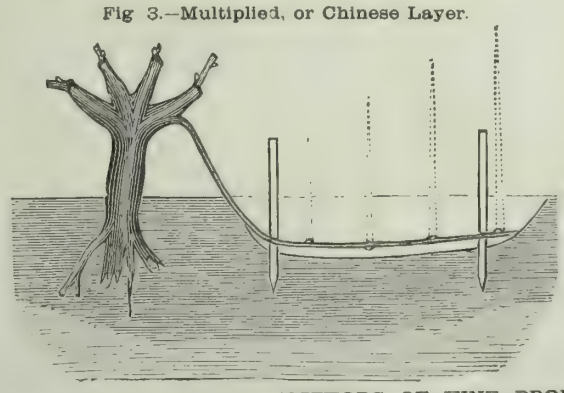
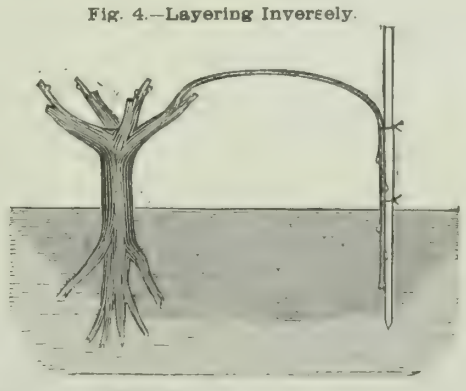


Fig. 4.—Layering Inversely.



METHODS OF VINE PROPAGATION BY LAYERING.

Tahoe Photographs.—We have received a budget of stereoscopic views of scenery around Lake Tahoe, by R. E. Wood, photographer at Tahoe. The views are very finely executed and should be sought for by those who delight in collections of photographs of California scenery.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Present Aspect of the Debris Question.

EDITORS PRESS:—The near future is pregnant with issues other than political, the significance of which to the people of the State is not even second to the one absorbing topic of Chinese immigration. The decision of Judge Temple in the Gold Run case, which is just ended at Sacramento, is anxiously awaited by the people of the whole Sacramento valley, and should be as eagerly looked for by the people of the whole State; inasmuch as a few years more, if the flow of "death-dealing slickens" continues, will bring the evidence and results of this wholesale destruction of property home to the very door of every resident of the State with such force and directness as to make it apparent to even the casual thinker that the time is at hand when forbearance has ceased to be a virtue, and when those advocates of riparian rights must be forever silenced; even if the processes of law and order must be subjugated to the "necessities of the times," and to the "good of the community at large."

This is a topic which has been too coyly dealt with by the local writers. Even now many ask: "How are we interested in this local dispute between the valley farmers and the hydraulic miners?" Were these people thinking of the near future instead of concentrating their entire forces on the accumulation of gold, such a question need not be asked. Every property-owner in the State, be he capitalist or laboring man, farmer or hydraulic miner, is directly interested in the cessation of this long-continued outrage—an outrage upon themselves, posterity, law and the principles of the Federal Government. Even now incalculable and irreparable ruin has been accomplished, with "hydraulic mining only in its infancy." Is any one too dull or indolent to consider the causes, and judging from past effects, fail to predict what the grand finale in the list of effects will be?

The writer is not the only one whose opinions are to had on this subject. Gray-headed, clear-sighted, almost ruined men, who were once the leaders in their communities, and who acquired titles to their property long before the "Little Giant" was invented, will tell anyone that "after 20 years more of hydraulic mining there will not be soil enough left in the Sacramento valley to supply the market of San Francisco with vegetables for one day." In order to show the direct bearing which the case has upon the interests of every property owner, let us look back a few years and see how this dispute originated.

California was in her infancy a purely mining State. She was the dumping grounds for every country in the world; even Australia added her quota to the cosmopolitan hordes of gold seekers. A few years were spent in restless wanderings to and fro, and eager search for gold. Gold was the thing to be secured by all, and by any means; none ever expected even to die in this then foreign land. They all calculated to "make their pile," and then to return to their former habitations and associates. The necessaries of life were high, and numerous far-sighted men took to farming, realizing profits which had never been dreamed of. Water power was soon made use of by the miners, at first sparingly, but hydraulics has increased with such strides as to leave its indelible traces on the whole Sacramento valley, from Oroville down to the waters of our magnificent harbor, where the yellow slickens-tinted channels of water may be seen at any time. In 1862 63, when the phenomenal floods subsided, a deposit of curious yellowish-looking sediment was found upon the lands adjacent to the rivers. It did not take long for the farmers to find out its deleterious effects upon vegetation. But what could the few farmers do? When appealed to, the hydraulic miner never once thought of ascribing the cause to "natural agencies," or to the "trampling of immense herds of domestic animals." He deemed the subject as unworthy of any consideration from him, and considered the interference of the agriculturists as infringing on his rights of property."

Years passed, with more floods and aggravated results; property began to depreciate, but still the farmers were loth to begin legal actions for the securing of their rights. But in the year 1876, I think, a few farmers of Bear river, represented by James H. Keyes (one of the first victims of hydraulic mining), began proceedings in the District Court of Yuba county. After three years of evasion on the part of the miners, the case was brought to a hearing on its main issue before Judge Keyser, and a decision rendered in favor of plaintiff. A stay of proceedings was obtained by the defendants, and the case was carried up to the Supreme Court (the ex-Supreme Court), where, after being put off for four or five times, it was thrown out on a misjoinder of defendants. For some time the matter practically remained where the Supreme Court had left it; but soon the citizens of Yuba and Sutter counties became suddenly aware (as will some day the people of other parts of the State) that they were interested. An association was formed with the avowed purpose of fighting for their rights.

The events of the last four years are too well known to need speaking of. The brush dam and irrigation schemes will go down to posterity as a practical demonstration of the magnitude of the debris question, and of the futility of trying to retain the debris in the river canyons and river channels. With the decision of the unconstitutionality of the Drainage bill, expired all hopes of the farmers for an amicable settlement of the issues at stake.

Proceedings were begun anew in the Courts, and the Attorney-General was prevailed upon to make the State the plaintiff in a test case. Attorney-General Hart has been eminently successful so far in bringing the case to a speedy trial, and he deserves the thanks of the people for his untiring efforts to bring this vexed question to a final issue.

The debris question, from one of seeming local interest, has risen in magnitude until the Attorney-General saw fit to make the State a party in the action. This has been accomplished in 20 years. During the same time, 100,000 acres of the most fertile soil have been irretrievably ruined; millions have been spent in leveeing and other fruitless attempts to provide against overflow and burial under sand, but hydraulic mining has more than kept pace with these protective works. The assessment roll of Marysville is but one-third what it once was, and in the absence of hydraulic mining, but one-ninth what it would be. The tax in Yuba and Sutter counties is from five to six cents on the dollar. The beds of the Sacramento, Yuba, American and Bear rivers have filled up on an average of 20 ft. Even at the present time, vast tracts of land above the junction of the American with the Feather river are flooded, owing entirely to the deposition of slickens in the Sacramento by the American river, thus rendering the Sacramento incapable of carrying all of its water, and causing the surplus to back up and flood the land for miles above it.

When the reader is assured that all of this and enough more, the enumeration of which would alone fill half a dozen columns, has happened in 20 years, can there be any doubt but that 20 years more of hydraulic mining would complete the destruction of the whole Sacramento valley, and with it that of one-half of the State?

Instead of 100,000 acres destroyed there would be as many million rendered worthless. Property would be reduced one-half. Capitalists would not invest in a State where rights were not guaranteed to all forms of capital alike. Taxes would be doubled and the productive power of the State would be reduced one-half, all for the getting of $5,000,000 or $6,000,000 of paltry gold, which would be incapable of administering to the sustenance of any living animal were all the soil of the earth covered with a few feet of this "rich fertilizer" furnished so generously by the hydraulic miners.

But the greatest of all evils would arise from the reputation of California abroad. Even now it is openly stated that no such proceedings would be tolerated in any other State of the Union. What an unenviable reputation it must be for a State to have, when it can be said with truth that the Hydraulic Mining Association, with its unlimited means and a determination to put them where they would do the most good, has succeeded in evading a decision on the real issue for half a score of years, has made legislatures, bought judges and bribed congressmen! And that a man needs only money in order to be able to traffic in the right of his neighbors with impunity.

The truth of the above is too painfully evident to be ignored by the enlightened and honorable people of the State. The question at issue is one which involves individual rights, State responsibility, and the honor of the institutions of our federal form of government. If gold is the only needful thing, then let the Supreme Court tell us so, and let every man alike be at liberty to secure it in the speediest possible manner, even should he be obliged to trespass on his neighbor. If usage is to make the law, then let us institute practices which will at least be adjudicated and controlled by physical power.

The decision of Judge Temple bids fair to be the turning point in this controversy. It will either assure the injured farmer that at last the judiciary has seen fit to acknowledge the nuisance committed by hydraulic miners, and that in future the farmers will be protected in their inalienable rights; or else, if the decision be in favor of the defendant, it will only still further illustrate the power of gold. An immense mass of testimony has been brought forward by the defendant's witnesses; enough to make it appear that the farmers themselves were the real trespassers, and the ones to be enjoined. The counsel for the defendants have made exhaustive pleas which, were they all gospel truth, would in all probability cause the poor farmers to be unceremoniously ejected from the State.

In the comprehensiveness of the testimony in the Gold Run case it is shown that the hydraulic miners have made every possible effort to influence the mind of the judge. It is for the judge alone, however, to decide how much of this testimony is to be accepted. Judge Temple has an unenviable task before him, and one which was evaded by the ex-Supreme Court. The people have every confidence in the presiding judge, and whatever may be his decision it will be admitted that it was dictated by his moral consciousness of the equities of the case.

In most countries of Europe, the tillers of the soil are the lowest in the social scale. Were anyone to assert this of our Californian husbandmen, he would be justly ridiculed. The possession of land should be the foundation of wealth, but at the present time the possession of land in the Sacramento valley is one of the most precarious of all forms of wealth. Land has only a nominal value, and will remain so as long as each winter brings with it the increasing certainty of inundation and burial under mining debris. The farmers are of the opinion that they have rights which must be respected. Their very existence is at stake; they are fighting, not only for bread and the homesteads of their youth, but also for their sacred honor and that equality before the law which the Federal Constitution pretends to give. They have long since given up all idea of any compromise short of the keeping of the tailings out of the rivers, and they propose to push the suits to the bitter end, or until their rights are assured and enforced.

It seems to be a question in the minds of some whether or not "slickens" will enter into politics. What is politics except the medium through which our Goverment is carried on by the will of the majority, and in accordance with the rights of every individual concerned? We claim to have a Government "with the people, for the people, and by the people." Such being the case, what is a more fit subject for a political issue than the redressing of the wrongs of our farmers? Is it not time that politics should take hold of the matter when every right of American citizenship has been trampled upon; when the highest judicial authority in the State refused to adjudicate; and when the outrages have been so conspicuous as to call forth remonstrances from the State herself? If these are not fit subjects for political interference, then too truly is our Constitution a chimerical one, and unworthy the support of honorable men. To everyone who would ask whether "slickens" will take its place in the political arena, the only answer is that "most assuredly it will; it cannot be kept out, nor will it be." Republicans, Democrats, Workingmen, and all political parties of the suffering districts will unite on this one question of vital interest, and will return members to Congress and to the Legislature whose positions upon this subject are known, and who will be pledged to a restriction of the outrages committed by the hydraulic miner.

M. H. D.

Oakland, March 14, 1882.

HORTICULTURE.

Oranges and Temperature.

EDITORS PRESS:—I believe it to be the unqualified duty of every one to endeavor to enhance prosperity and success in the community where they reside. And it is a like duty of every one to prevent disappointment, disaster and trouble to their fellow man whenever it is in their power so to do. The RURAL PRESS of January 21st contains statements (under the head of "Orange Trees,") which are so outrageously incorrect, and which are so likely to lead men to loss, that it would be a cruel wrong to those who may contemplate engaging in orange culture to permit such fallacious precepts to pass uncontradicted. In that article Mr. W. A. Sanders says: If any reader of the RURAL PRESS will plant orange trees on the west or northwest side of a house, barn, evergreen shelter, belt of trees, steep high hill or mountain, where the sun's rays cannot strike them till, say, about noon, they are secure from any degree of cold we will ever have in the great valley of California; and that oranges can be raised anywhere from Redding to San Diego, in the valley or lower foothills, if those precautions are observed, with as much certainty and ease as apples or peaches.

Now, Mr. Editor, if you will review communications heretofore published in the RURAL PRESS in regard to effects of frost on the orange orchards of California and Florida, you will be convinced that the statements of Mr. Sanders are the reverse of facts known and proved for the last century. Thousands of dollars have been wasted in California in the vain endeavor to grow oranges in places where it is too cold for the propagation of that class of trees or fruit. And to advise the planting of orange trees in the shade, where they will not receive any of the morning or forenoon sun, is the most injurious absurdity ever published in regard to orange culture. An orange tree so grown, even in the most favored part of Southern California, would make a very slow growth, and the fruit, if it ever bore any, would be of poor quality.

But shade is not a security against injury by frost. I have seen the bark on orange trees crack open by frost all the way from the branches to the ground, and not a ray of sun could touch the injured trunk, it was so sheltered by its own foliage, and that too where the mercury did not go below 26°, and 6° below freezing will kill a three-year-old orange tree every time.

The orange tree ripens its fruit in December, January, February and March, the four coldest months in the year; and would Mr. Sanders assert the absurdity that ripe oranges are impervious to frost? If he does affirm that oranges would be marketable after enduring a 10° freeze, his knowledge of the fruit is ditto with his knowledge of the tree, and his knowledge of both can be expressed by a single cipher; and, for fear some of your readers may doubt that statement, I will prove it:

Two years ago, Mr. Montgomery, of Nordhoff, had a beautiful orchard of large, healthy orange trees, some of them bearing excellent fruit; and, although the temperature at Nordhoff was not at any time colder than 10° below freezing, yet every one of Mr. Montgomery's orange trees were killed to the ground. Mr. Thomas Gilbert, Mr. L. D. Roberts and other residents of Nordhoff had their orange trees killed by frost at 24° Fah. And yet, one of the most thrifty orange orchards (according to age) in the State is situated within three miles of Nordhoff. Mr. F. S. S. Buckman has 1,000 orange trees growing within sight of Nordhoff, and this winter both grafted and seedling trees ripened their fruit. But his place is almost exempt from frost; the coldest night of this, or any past winter, has not reached 5° below freezing in that locality. Mr. Buckman set out two year-old trees in 1876, and one year ago he had ripe oranges on those trees. Three-year-old orange trees set at Cliff Glen in 1875 bore fruit last year and this, and where is the fruit from the thousands of orange trees which were set prior to that time in Fresno.

In the RURAL PRESS of December 7, 1878, Mr. J. H. Shields relates an incident in regard to the effects of frost on oranges in Florida. He says a single cold night in the first week in January, reduced an orange crop from a merchantable value of $3,000 to a gratuitous distribution among the neighbors.

Ten years ago I expended several hundred dollars in trying to grow oranges in a climate uncongenial to that class of fruits, and I wasted as much more in the cultivation of banana bulbs, only to see them chilled to death every winter. And during the ten years which have intervened since then, thousands of dollars have been wasted, both in middle and southern California, in the futile endeavor to grow bananas and oranges in places where it is too cold for them to thrive.

Now, Mr. Editor, has any one been to blame for this waste of money and labor? If so, they deserve the severest censure. Surely the inexperienced agriculturist is not to blame for believing the statements of our agricultural journals to be true. And those persons who have been advised amiss, have just reason to censure their advisors.

Some years ago Mr. Sanders told the people of California, through the RURAL PRESS, that the native black walnut of California was a profitable tree to grow for its fruit. He called it the best tree in California for a poor man to set out, as it was an early bearer and in a few years a man would have plenty of nuts to sell and to eat.

Now, how many persons were induced by that communication to set out an orchard of native walnut trees, to find, after years of culture, that the fruit is worthless?

Many of the hills in this county are covered with native walnut trees, and every fall tons of the nuts lie under the trees and go to waste, for they are not marketable like the Eastern black walnut, and too small and hard to eat.

Mr. Sanders carps about unfriendly criticism of his lecture on tree and vine planting five years ago. After five years of additional experience in orange culture, the readers and editors of the RURAL PRESS ought to be able to determine whether the lecture alluded to or the criticism complained of was the most practical and correct.

The following are the instructions given in that lecture for the propagation of orange trees:

> The trees of this family, being natives of tropical climates, are liable when young to make a very vigorous autumn growth; the wood so produced, being yet soft in winter, is liable to injury from frost. The young trees must be protected from this cause until they acquire a second nature or habit of growth like our native trees, viz. active growth in summer and dormancy and hardening of wood in autumn and winter. Much towards the accomplishment of this end may be done by allowing no irrigation of such trees after the middle of August. Generally, when they are never allowed to winter kill, the trees will need no care after they are three years old. By that time their habits of growth will have fully conformed to our seasons. The trees are then perfectly hardy, being able to stand 20° below the freezing point without injury.

The above is a verbatim copy of Mr. Sanders' instructions on orange growing, and the entire lecture—which filled nearly four columns of the PRESS—was just about as fallacious as the above.

The RURAL PRESS of December 28, 1878, says Mr. J. W. Furgeson, of Fresno City, had at that time 55 orange trees, some of them bearing ripe oranges. That was over four years ago, and did those trees ripen their fruit in the open air this season, or have any or all of them been frozen to death?

The RURAL PRESS of Oct. 2, 1880, says Mr. F. Birdsell, of Placer county, had 30,000 orange trees growing in one orchard in that county. Those trees had cost him $25,000 in cash, and some of them were then bearing fruit. How have Mr. Birdsell's trees withstood the present winter, and what was the greatest degree of cold at his orchard in Placer county?

The San Francisco *Bulletin* published statistics of the effects of frost on orange trees in every county in the State. Those statistics, and the evidence obtained and published by the State Horticultural Society of California, are proof most positive that the statements made by Mr. Sanders in the RURAL PRESS of January 21, 1882, are not half true.

Los Angeles and Ventura counties are likely to be the principal orange-growing counties in California. Mr. Blanchard, of Santa Paula, has

100 acres in orange and lemon trees just commencing to bear fruit. Both his seedling and grafted oranges were this year of the best quality, and Mr. Blanchard says it would be impossible to raise oranges in a climate too cold for the tree to grow in the winter, for that is the time of year it ripens its fruit.

Mr. Sanders says, by starving the tree for water after the middle of August, it will acquire a second nature, and the trees would grow only in the summer time, and would lie dormant in the autumn and winter like our native trees; that *at three years old* the tree would fully conform to our seasons and be perfectly hardy. Yes, this is what this lecturer says about orange trees.

We had heavy rains last October, and my orange trees were all making a vigorous growth last November, and they are making a vigorous growth now. But has Mr. Sanders, or any one else, ever succeeded in making an orange tree ripen its fruit in summer or lie dormant in winter? The proposition is too preposterous even to be thought of. Many, who have been merchants or tradesmen in the Atlantic States, and who know nothing about California fruits or farming, come each year from the cold East to make for themselves new and more beautiful homes in California. These newcomers expect to obtain correct information from the agricultural journals of our State, and the RURAL PRESS often directs, for weal or woe, the opening advent of the beginner's career. Therefore, correspondents of agricultural papers should prove their precepts to be practical, ere they play preceptor by carrying their imaginings into print, to be scattered abroad as ascertained facts.

And we believe that agricultural books and papers ought to be a lighthouse of safety to the inexperienced agriculturist, instead of a false beacon, to lead him to wreck and loss, like the following, which is the closing paragraph of the lecture alluded to:

> And last, but not least, I am sure that coffee can be profitably grown in this (Fresno) county. If not here in the valley, it certainly can be grown in the *no-frost belt* of the Sierra foothills.

Doubtless, many have invested both money and labor in this announced profitable enterprise; yet no one has ever succeeded in growing one grain of coffee or finding a *no-frost belt* in Fresno county; and, in our opinion, to give advice which leads to loss, is not a virtue.

In your editorial on trees in California in the RURAL PRESS of January 5, 1878, you use the following language:

> We have no interest to serve save the determination of the truth, either in our own writing or that of our correspondents, and welcome honest criticism.

But some of the tyro teachers of husbandry object to an honest and fair criticism of their crude, impracticable ideas. Their vanity leads them to attempt things for which they are incapacitated, and their endeavor always proves calamitous to innocent readers. But, nevertheless, they scribble on—the grub longs to be a butterly, the acorn is anxious to be an oak—and their persistency has at last made men weary of this class of human pests.

Now, Mr. Editor, if this criticism seems too plain, or too severe, please remember that the money and labor of poor emigrants and the happiness of their families likewise deserve some consideration and some protection from those who advise them amiss. And if the truth, perchance, does wound the tender feelings of some reckless writer (and we have no desire to wound or bring reproach on any one), it will be apt to save many a trusting heart the aches of disappointment and loss. The most good to the greatest number, is my motto. ROBT. LYON.

Cliff Glen, March 4, 1882.

THE MOUNT ETNA OBSERVATORY.—The municipality of Catania, in Sicily, has just completed the erection upon Mt. Etna of an observatory at the hight of 9,671 ft. above the sea level. It is believed that in the Etna observatory, spectroscopic results will be attained which are impossible at all the previously existing astronomical stations throughout Europe. The site of the observatory has been so selected that, in case of an eruption from the crater, a stream of lava would be divided above the building, and would pass it without injuring it. The structure surrounds an enormous pillar, which supports the great refractor, and the telescope is covered by a movable iron dome. In addition to the telescope, the building is furnished with a collection of meteorological and seismological instruments. From the summit, a lovely view is to be had of the half of Sicily, Malta, the Lipari islands and part of Calabria.

NOVEL REACTIONS OF MILK.—If a little tincture of guaiacum is added to fresh milk, a blue color is produced. Milk heated to 80° or upwards remains uncolored. Sour milk takes the same tint, but the reaction is prevented by the addition of mineral acids and alkalies. If a little starch paste mixed with potassium iodide is added to milk which has been mixed with old oil of turpentine, a fine blue band appears at the surface of contact and spreads rapidly. Milk freed from albuminous matter does not give this reaction. If to fresh milk there is added first acetic acid to precipitate the caseine, then some caustic potassa, and lastly a trace of a solution of copper sulphate, the violet reaction characteristic of peptone does not appear; but if the milk is allowed to stand 15 to 20 hours before this treatment, the violet color is obtained. Mr. Arnold considers the blue color due to ozone.—*Scientific American.*

SERICULTURE.

The Silkworm—Its Education and Reproduction.

Addressed Especially to Beginners in the Silk Business.

[Written for the RURAL PRESS by FELIX GILLET, of Nevada City, Cal.]

Part Third.

I will now, to render more complete and comprehensive my description of the education and reproduction of the silkworm, give our young sericulturists a handful of hints, suggestions, facts and figures, bearing directly upon that subject, and that will give them a fuller and clearer understanding of the whole business, and of everything else pertaining to silk and silkworms.

The mulberry is not very sociable; it does not like the proximity of other trees; which means that it is better, wherever it can be done, to have the trees planted by themselves, and far enough apart.

Mulberry trees for silkworm feeding must not be planted on swampy land, nor too close to water courses; "the rocky sides of the hills to the mulberry, and the wet soil of the valleys to the poplar," says an old Chinese ode. In other words, the mulberry must not be planted on the land best suited for the poplar; and on hillsides and poor land the mulberry will yield the best and healthiest leaves.

The leaves of the mulberry must be free of dust when served to the worms; and when too dry, as is sometimes the case with some varieties in summer, it is well to sprinkle them slightly with water.

Let it be well borne in mind that silkworms will succeed best in those light structures made of wood or still lighter material, in the cane and bamboo shanties of China and Japan, in the cabins of the Egyptians, in the open sheds of the Persians, in the kitchens, hardly closed and smoky, of the French and Italian peasant, than in comfortable houses or costly cocooneries furnished with the latest modern improvements.

A good start is of the very first importance; to have a good start, one must have good grain. Good grain is the corner stone of a good education. The best grain is that obtained from moths issued from the first cocoons spun, or from the first moths hatched and those that are hatched between 3 and 7 o'clock in the morning.

The healthiest worms are those first hatched. Always cut up the leaves during the first three ages, from very fine to fine, and from fine to coarse, keeping up with the worms' growth. After the worms have been fed for two days after hatching, the cut leaf that has not been consumed will make as many little hills, upon which the worms lie too close together, and as they must never be allowed to crowd up, the litter has to be carefully spread out, with the worms on it, so as to give the latter more space. This is done at meal times, for the worms have to be fed immediately after the operation, cut leaves being made to fill up the interstices between the scattered litter. This operation is repeated at the other ages whenever needed. Never keep the worms too crowded or thick together on the papers. After the fourth moulting one square foot must be allowed to every hundred worms (but at that age the worms occupy the whole space upon the shelves), overcrowding being liable to create disease.

Having once put the worms on hard food, that is, upon well-matured leaves, the use of young and tender leaves must never be reverted to again.

Silkworms are more in dread of hot weather than cold weather; if properly fed they can stand very severe cold weather. When it is cold, however, the silkworm has less appetite, three, or even two, meals a day would be sufficient; though the education will last so much longer. Never forget to remove worms of doubtful health.

Give to the worms the freest possible ventilation. Silkworms do not relish the sun's rays; but air that gets into the room through crevices will never create disease among them. For, if the precious insect has need of a sort of shelter, particularly in its young age, it must not be an "air extinguisher." In China, at the fall of the year, and before the mulberry leaves turn yellow on the trees, a certain quantity of them is gathered, dried in the shade and pulverized. They are then preserved in a very dry room, where fire is generally kept during the winter. They are used the ensuing year as food for the worms, as follows: After each moulting, and for four or five meals, the flour of pulverized leaves is evenly sifted upon the fresh leaves, which have been previously lightly sprinkled with water and served to the worms. It feeds the latter well and helps them to spin a heavy cocoon whose silk thus acquires a remarkable strength and elasticity. If heating the silkworms' room when two cold and damp in the spring is required, it ought to be done at the time the worms are fed, the fire being allowed to go out after they are done eating.—Chinese precept.

Right after hatching, the worms weigh $\frac{2}{3}$ of the weight of the egg, leaving $\frac{1}{3}$ of the whole weight for the shell.

Japanese eggs weigh $\frac{1}{3}$ less than annuals. Thirty grams or a metric ounce (the American ounce is 28 grams) of French and Italian animals grain, contains 42,000 eggs, while the same quantity of Japanese grain contains 60,000 eggs.

The worms that hatch from 30 grams of grain, will consume during the 1st age, 8 pounds of leaves; 2d age, 24; 3d age, 55; 4th age, 243; 5th age, 1,335 to 2,350 pounds. It is, therefore, well to reckon upon an average of 2,335 pounds of leaves for 30 grams of grain.

For the same quantity of grain, the worms give during their life-time almost 500 pounds of offal, which constitues the best manure for mulberry trees.

The thread of a fine French annual cocoon will measure as much as 1,350 yards. Two hundred and thirty-four of first quality French or Italian annual cocoons, will weigh, fresh, before killing the chrysalis, one pound; while it requires 342 Japanese annual cocoons to weigh that much. When diseases rage among the silkworms, it requires twice as many cocoons, so little silk do they produce.

Perforated or pierced cocoons lose 80% of their weight; the chrysalis, thus, weighs four times as much as the silky envelop, or cocoon proper.

Four pounds of Japanese green cocoons will give about one pound of dried cocoons.

Female worms, cocoons and moths, weigh 10% more than males. Before the epidemics that have been raging for over 30 years, cocoons did yield one-tenth of their weight in silk of first quality; 12 lbs. of second-class cocoons were required for 1 lb. of silk. Nowadays, the best Japanese cocoons (the only kinds that can be raised in Europe with some profit, on account of the reigning epidemic) yield one-fifteenth of silk, and Polyvoltine races one-twenty-fifth.

Bivoltine and Polyvoltine are easily transformed into annual races, and *vice versa.* The best grain is that first laid.

The best female moth will lay from 400 to 700 eggs; 1,350 eggs weigh one-twenty-eighth of an ounce; 37,800 eggs, an ounce; 618,800 eggs, one pound.

Good grain used to cost in France and Italy from 40 to 60 cents per ounce, that is before pebrine and flacherie had broken out among the worms. Now, grain from Japan, the only country that can produce grain able to stand against the epidemic, sells at the rate of $5 per ounce of 25 grains.

The production of silk in dollars, before the epidemic broke out in 1858, was reported as follows all over the world:

Chinese Empire	$ 81,000,000
Japanese Empire	17,000,000
Corean Archipelago	1,000,000
Turkistan (In China)	400,000
Turkistan (Independent)	1,400,000
Persia	5,000,000
Asia Minor	5,250,000
Syria	1,500,000
Turkey in Europe	7,000,000
Greece, Ionian Islands	850,000
France	29,000,000
Italy	39,800,000
Pontifical States	1,300,000
Spain and Portugal	3,250,000
Morocco, Algeria, Tunis, Mediterranean coast,	300,000
Basin of the Danube, Austria, Bavaria, Servia, Hungary	80,000
India	24,000,000
America	80,000
Total	$219,510,000

Since that year, 1858, the production of silk in all the countries of Europe, in Asia Minor, Syria, and the whole Mediterranean coast, America and some parts of Asia, on account of the epidemic, has fallen a great deal below the above figures.

Profit in Growing Silk.

How much money is there in it? or, in other words, how much could a small family expect by raising silkworms? That is the question—the main, fundamental requisite to make of this State a silk-growing country par excellence. Will the business pay? For, though the climate may be exceptionably good, the food of the very best quality; still, if people cannot find in it remuneration enough for their labor and outlays—little as that may be—it would be useless, indeed, even to begin, and on a small scale, to raise silkworms. In former letters on this very subject, I have constantly warned our people, if they would avoid disappointment, against indulging in too fond and sanguine expectations regarding this silk business. I advocated then, as I always did, and still do, the raising of silkworms on a small scale; that is, household silk culture. I furthermore advised our silk growers to give up the idea of making money by the sale of silkworm grain, for the very reason that California grain had been thoroughly tested in years past, and also found wanting; that is, unable, like all the rest, to stand against the present epidemic, flacherie, which to this day has baffled the science of the most renowned scientists and sericulturists. I said it yesterday, I say it again to-day, I will repeat it to-morrow, in the hope that my feeble voice may be heard and my advice heeded by those people who unknowingly are deluding themselves in expectations that cannot be realized, and which I consider the duty of the better-informed people to dispel. I will therefore insist more earnestly than ever on the folly of raising silkworms in the hope of finding a ready market for the grain. Even supposing that such a market could be found, how long would that grain trade last? So I do assert, and without any fears of being contradicted, that the only consistent way of founding this silk industry in California is to raise silkworms *solely for the silk.* Let everyone desirous of launching into the business be thoroughly impressed with the truth of that assertion. Thus is the question simply narrowed to this: If raising silkworms for the silk, how much can be expected from the sale of cocoons, and where shall we find a market for what we produce? But this is a double question. Where shall we find a market for our cocoons, is, however, the main question of the two; for whether we be more or less successful in raising silkworms, we must first have a market for our cocoons, with prices more or less remunerative, or else we had better give up the business, or never get into it. On the other hand, to get remunerative prices for the cocoons we would raise, we must certainly have a home market, cocoons being too bulky and too fragile a merchandise to be shipped away with profit to a distant market. Now, to have a home market for that class of goods, I maintain that we must have a "home filature," or reeling factory, where cocoons may be turned into grege, or raw silk; and, if an organzine mill be attached to it, have the silk thrown into organzine, for which there is an always ready market. Would people be satisfied with the prices given for their cocoons by such filatures, then would the problem be satisfactorily solved, provided that we would be "successful" in raising silkworms—that is, French annuals, the only paying kinds for us to raise; and I should not be over-confident on that point, either, considering the general failure all round with those fine races of silkworms since the epedemic broke out. The first steps to be taken ought, it seems to me, to be toward the establishing of a filature in our midst; short of that, our efforts, I am afraid, will be almost futile. As a filature could not be self-supporting at the start, who will provide for its support till our farmers are ready to supply it with the raw material or cocoons? This is another question for all parties interested to determine. A filature of 20 bassins would require about 33,000 pounds of cocoons, or the cocoons produced by 350 ounces of grain (French annuals). Supposing now that we could have a filature in our midst ready to buy our cocoons, the next question is: How much will they pay for a pound of fresh cocoons? how much for a pound of dried cocoons? Fresh cocoons would probably fetch from 50 to 65 cents per pound, or 260 cocoons of the French annual races, healthy, sound, firm cocoons, as are hardly raised anywhere nowadays, always on account of that everlasting epidemic, which, if it does not sweep away the worms, at least renders them weak and unable to spin heavy cocoons; so much so, that it will be wiser to reckon on 400 cocoons to the pound. Dried cocoons would fetch in the proportion of 1 to 4; that is four times as much as fresh cocoons, since cocoons lose by drying 80 of their weight; or from $2 to $2.50 per pound (1,050 to 1,600 cocoons).

Pierced cocoons, if quite clean, will fetch $1.25 to $1.50 per pound for carding, right at the factory, not at the shipping place.

A farmer's family may raise, according to its size and that of the room allotted to silkworms, from ten to twenty thousand worms; or, if the education would be quite successful, from 30 to 70 pounds of fresh cocoons, which at the average rate of 60 cents, would fetch from $18 to $42. I do not mean to say that a farmer's family could not raise more than that; I have only reference to the average farmer. If, having a room large enough for that purpose, a farmer's family may, of course, raise easily from 50,000 to 75,000 worms, including the gathering of the leaves. The above figures show that I was right in my first estimates in putting down at from $10 to $100 what any farmer's family could reasonably expect by raising silkworms.

Conclusion.

In this paper on the silkworm, how to succeed in founding upon this coast that beautiful industry, and what we have to expect from this business, new to so many of us, I have told the people, and in very plain language, too, all the truth about it. Let nobody think for a moment that I have been grinding it too fine. By following my advice, none will have to regret it; none will experience that bitter disappointment and loss of money, as will surely be the case if going at it blindly, planting acres of mulberry trees, raising silkworms in large quantities, launching into the grain business—in a word, deluding oneself.

To all those beginners that have not the least knowledge, or very little, in the art of raising silkworms, I say, go at it slowly, feel your way first, plant only, for a start, a few mulberry trees, and plant them where they may be an ornament to your place or where they will never be in the way afterward, in case that you would make up your mind not to raise any more silkworms. Commence by raising but a few worms, say from 100 to 200; learn first all those little things about silkworms that cannot be properly learned but by a little practice, and as soon as you have acquired an inside knowledge of the business, then it will be time for you to increase the quantity of grain to hatch and worms to raise, but only as far as your means will allow, never going any farther. And if by going into the business little by little, you finally come to the conclusion that it does not pay you for all your trouble, you will have then the satisfaction of having incurred no loss of money to speak of, or, what is better, not experienced that bitter disappointment concerning your most fond, but unrealizable expectations.

THERE are nearly 5,000 workers in the woods and mills between Noyo and Cuffey's Cove.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

Reorganization of the Grangers' Business Association.

A special meeting of the Grangers' Business Association of California was held yesterday afternoon at their rooms, corner of Davis and California streets, President Daniel Inman in the chair. The President stated the object of the meeting, which was to consider the project of transferring all the property of the organization to a new corporation, and disincorporating the old one. The old corporation has been in existence since 1875, and its charter limited the scope of its operations to an extent that made a change desirable. The capital stock of the association was $1,000,000, divided into 40,000 shares of $25 each. Notwithstanding the restricted scope of its charter powers, the organization has proved a great benefit to the stockholders. The new corporation is composed of the same board of directors with the same stockholders, and the officers of the old association will be the officers of the new. After considerable discussion and consultation with their legal adviser, the association resolved to disincorporate and transfer its property to the new. The name of the new corporation is "Grangers' Business Association." On taking the vote about 3,000 shares were in favor of the transfer, and only about 200 against it. Under the new articles, the association can acquire real estate, borrow and loan money, etc. The results of this may be read in the sudden rise in the stock following immediately upon the vote to make the change, transfers of a considerable quantity of stock being make at par, a value which the stock has not reached at any time before since the organization had an existence. After definitely resolving upon the measure, the old organization adjourned *sine die*. The new association will be called together by the President within a month, and enter upon its career under good auspices and bright anticipations.

There were filed Friday morning articles of incorporation of the Grangers' Business Association. Object: "To deal and trade in all kinds of agricultural produce, live stock, agricultural implements and general merchandise; also, to engage in and do any kind of manufacturing, warehousing, shipping and commission business, and in connection therewith to build, own and manage tug-boats and wharves, and to secure water rights for the purpose of getting water for use in its business and to supply ships; also to borrow and lend money, and also to purchase, hold or exchange any real estate or personal property." Principal place of business, San Francisco. Directors—A. D. Logan, Willows, Colusa county; A. D. Lewelling, St. Helena; W. S. Overhiser, Stockton; R. S. Clay, Merced; A. Adams, San Francisco; D. Inman, Alameda county; I. C. Steele, Pescadero, San Mateo county; A. T. Hatch, Cordelia, Solano county; T. Flint, San Juan, San Benito county; E. W. Steele, San Luis Obispo; and O. Hubbell, Tomales, Marin county. Capital stock, $250,000, in 10,000 shares of $25 each. The amount actually subscribed is $32,350, as follows: A. D. Logan, $16,100; J. Lewelling, $250; W. S. Overhiser, $800; R. S. Clay, $250; A. Adams, $3,625; D. Inman, $2,550; I. C. Steele, $3,500; A. T. Hatch, $1,825; G. Flint, $1,325; E. W. Steele, $375; O. Hubbell, $1,000; and T. Upton, $750.

In Memoriam.

VALLEJO GRANGE, No. 113, P. of H.

WHEREAS, The Great Master has, in his all wise Providence, removed from its earthly habitation the soul of our beloved brother, B. B. Brown, a charter member of this Grange, and while we mourn our loss, we feel that after a long siege of sickness and suffering, the weary soul has found rest and peace; therefore be it

Resolved, That in the death of Bro. B. B. Brown, Vallejo Grange has lost a faithful member and the community a good citizen.

"We shall meet, but we shall miss him.
There will be one vacant chair."

Resolved, That we tender our heartfelt sympathies to our bereaved sister and her family. Although human sympathy can give but little comfort, He who does not willingly afflict His children, can heal the wound with the balm of His love.

Resolved, That our charter be draped in mourning and the members wear the usual badge at its sessions for 30 days. C. B. Deming, Clara Deming, F. A. Mosley, Committee.

PROF. HILGARD'S SALARY.—A memorial was recently addressed to the regents by a large number of leading Grangers, asking that Prof. Hilgard's salary be restored to the figure from which it was reduced last summer. A letter from J. H. C. Bonte, Secretary of the Regents, to J. V. Webster, Secretary of the State Grange, is as follows:

The petition presented by yourself and others, relative to the increase of Prof. Hilgard's salary, was presented to the board, and the following is a minute of the action of the board:

"The Committee of Instruction and Visitation beg leave to report back the very respectful petition of many influential agricultural tax-payers, asking for an increase of the salary of the Professor of Agriculture, without recommendation other than to state that in the opinion of the committee, the proposed increase, however merited, if adopted would necessitate an additional increase in the salaries of other professors, which the committee fear the financial condition of the University will not, at present, warrant. The report was concurred in."

AMERICAN RIVER GRANGE.—Bro. O'Brien, from American River Grange, reports that his Grange has within a few weeks raised 15 members to the fourth degree, and that they now have a class of 25 under way. Three months since this Grange held a meeting and took a vote on surrendering their charter, which proposition was voted down. It appears Worthy Master Flint visited the Grange with some other brothers from Sacramento, paid American River a visit about the time of its greatest depression, and so encouraged the members by their talk and example that in the matter of new members American River Grange at the present time leads all others in the State.—*Patron.*

Agricultural Notes.

CALIFORNIA.

CONTRA COSTA.

THE RAIN, AND SEASON PROSPECTS.—*Gazette*, March 18: The rains of the past week have been copious and timely, and have given the earth all it can hold. As we stand at present, we have a better prospect for a crop season than we have had at this date in any former year. We have never before had so large an area so well seeded and the ground in as admirable condition at this period of the season as now. Nor has there been a winter that has stored without wastage so large a portion of the rainfall. We are gratified, also, to have assurances that the late rains have restored hope to the farmers in the eastern section of the county and given them prospects of a good crop. Our Martinez measure of rainfall for the season is 8 99; the railroad gauge gives an aggregate of 11.42, and Mr. Fish's 9.94 inches. The San Ramon section has probably had not less than 14 inches.

ANTIOCH.—*Ledger:* The chances are now favorable for a good harvest on summer-fallowed land, and with a favorable spring even winter-sown grain will be apt to yield a fair crop. Everybody feels happy and cheerful over the improved prospects of a favorable season, and it will no doubt cause increased activity in all lines of business.

FRESNO.

EDITORS PRESS:—Prior to Feb. 1st prospects looked rather gloomy for the agricultural interests of this section. However, since that time we have had little cause to complain, owing to the many showers with which we have been favored. The past winter has been the coldest experienced here for many years, which, together with the prolonged dry weather, was aught but encouraging to the farmer. Lately we have had an abundance of rain; that is, sufficient for the present, and though the acreage sown is probably not as large as it would otherwise have been, the crops planted are up and looking fine, while the grass promises abundant feed for our stock through the coming season.—C. M., Fresno, March 12th.

RAINFALL.—EDITORS PRESS: We have had 1.05 inches of rain during the past three days, and it is still raining in frequent showers, with constant, strong south wind that gives assurance of abundant rain to make a crop of what grain has been sown. Only 40% of the grain-producing area has been sown, owing to the drouth, till about a month ago. Till Feb. 10th we had had only 2.37 inches of rain; and the plows at work—what few were at work—were enveloped in a cloud of dust. Our total rainfall now is five inches, half of it having fallen within the past month.—W. A. SANDERS, Sanders.

THE PROSPECT.—*Republican:* We have taken pains to ascertain as far as possible the condition of the wheat fields of the county, and gain from farmers of various sections their idea concerning the crop of 1882. We have not the space in which to give the individual expressions we have heard, but give simply the conclusion of the whole matter. In answer to the query, Will you have a crop? we have heard no other answer than "Yes." In the vicinity of Millerton, the outlook is for more grain than last year, while the Dry Creek fields look fully as well as in March, 1881. The entire foothill region promises a good crop, and further down on the plains ordinary spring showers will insure an average yield. The idea of a dry year has completely vanished.

HUMBOLDT.

A NEW CHURN.—Eureka *Standard:* It is a pneumatic churn and entirely novel in its principle of action, and was invented by three gentlemen of this city, Messrs. Enoch Rowe, Robert Holmes and Jas. Dawson. It will make, in a small model, a gilt-edge article of butter from fresh milk in five minutes. This machine would effectually do away with the tedious process of setting milk and raising cream. A caveat has been filed and a large working model is soon to be constructed. The churn is round, and sits on its end like a round tank. Into this is placed a hollow central tube, perhaps one-sixteenth the diameter of the churn, which is firmly attached to a narrow cylinder, not unlike a perfectly round churn dash and handle, which just fits free enough to turn on the upright shaft in the bottom of the churn. This cylinder is hollow, and connects immediately with the hollow tube, and at the same time has peculiarly-shaped air-escapes on the upper side. This cylinder and tube are firmly attached together, and are revolved at about 200 to 300 revolutions a minute by means of a bevel-geared cog-wheel underneath. By centrifugal force the milk is expelled from the hollow tube and cylinder, and, by the same principle, the air is drawn down the tube and driven into the milk through the air-escapes in the cylinder before mentioned. There are two cleats, or stops, placed upright on opposite sides of the churn, which act as breakers to the milk in its swift circular current when the churn is in operation. A test trial on Wednesday produced perfect butter from two quarts of milk in four minutes, and the percentage was fully equal to cream butter from the same amount of milk.

KERN.

ENTOMOLOGICAL REPORT.—I. B. Rumford, in *County Californian:* As the people of the county would naturally feel some interest in the result of the investigation of the Horticultural Commissioners, the fruit interest being a growing and important one, and, we believe, will be at least one of the leading industries of the future, I will say that, so far as we have discovered (though two or three places are rather badly infested with woolly aphis, and the red spider has become well established in many orchards), the prompt action which all parties seem willing to take will no doubt prevent a further spread of the trouble. A few places we find free from any pest except the borer, which is the only thing, so far, that we find troubling the peach. The almond tree, excepting the Commercial variety, is worse affected by red spider than any other tree, and from them it seems to spread to the apple, pear and plum. In some localities our soil and climate seem well adapted to the pear; but in some cases we find a minute pest that, in large numbers, so extract the sap from the bark as to cause it to dry and peel off, leaving a new bark to grow beneath, which is served the same way the next year, greatly to the detriment of the tree. This, we believe, a thorough washing with the lye—one lb. to one and one-half gallons of water, as directed in the books supplied to all who apply to us for them—will remedy. The worst place found is the old Baker nursery, in Bakersfield, from which trees alive with woolly aphis and codlin moth were being sent to different parts of the county, and we have ordered that no trees be removed therefrom until properly disinfected. Our appointment was too late to enable us to do all that should have been done this spring before the trees started, but all can be prepared for effective operations the coming summer and winter. We hope all parties who have only a few trees will observe and report to one or more of us any difficulty they may find, that it may receive prompt attention. Mr. Oscar Zschokke, the Secretary of the Commission, will also soon be prepared with apparatus for spraying infested trees, and all who prefer to employ the work done can apply to him.

LASSEN.

EDITORS PRESS:—Probably every farmer thinks that his situation in California is the best, and it is right that he should, for if one cannot be contented, what is life worth living for? Your readers will not be surprised, then, when I claim for Honey Lake valley so many advantages for a farmer's home. I desire to give a few facts, easy of proof, trusting that it may be of service to some young and enterprising farmers who desire to secure good farms. There are in this valley thousands of acres of sagebrush land, good land, too, capable of raising any kind of grain, that can be pre-empted or homesteaded. The great difficulty is getting water on it. But this hindrance will soon be removed, as before the dawn of another year the waters of Eagle lake will be irrigating our lands. There is plenty of good timber land, making wood easy of access and cheap. Our land here will produce any kind of grain and fruit. The Honey Lake apples are already known as a standard of excellence. A fine investment is now open for some persons to engage in the raising of vines. The prospects of our having a railroad, with which we will be connected with the markets below, is now a settled fact. Our great salt marshes will then be able to be worked; our mines near by will open up a new El Dorado or a Comstock. Our dairies will work with renewed vigor, and soon our butter and cheese will be as well known and celebrated abroad as they are at home. Already our grist mills are enlarging, and putting in large and costly machinery. Our educational advantages are unsurpassed by any county in the State; but few of our districts but what keep an eight-months' school. A seminary of learning is soon to be started at Susanville, which, from reports, will never be a failure, but a lasting benefit to our county. Religious services are held in all the school houses about twice a month. Our interest, probably, has carried us too far, and we have wearied you; but it has not been for lack of zeal that we before have kept silent, but a fear of encroaching upon the duty of a regular contributor.—J. H. L. EUSTICE, Janesville, Honey Lake Valley.

LOS ANGELES.

TUSTIN REPORTS.—Los Angeles *Times:* A. G. Godfrey returned yesterday from an extended visit to his father, G. G. Godfrey, of the Kansas colony in Tustin. He reports that between three and four inches of rain fell at Tustin during the recent storm. The new settlers are all jubilant over the bright prospects, and are busy at work setting out fruit trees, vines, etc. Some good, commodious houses are being built in the colony, and the probability is that improvements of a substantial nature will continue in operation there throughout the present year.

THE RAINS.—Anaheim *Gazette*, March 18: All the grain which was growing before these rains will undoubtedly mature, even if there is no further rain—an event which is not at all probable. The probabilities are that the crops around Anaheim will be the heaviest in years in proportion to the acreage sown. Unfortunately, the area sown in grain is not as large as in previous years, as many farmers were deterred from planting by the very great possibility of a dry year. But the yield on the land which was seeded will be so large that the aggregate amount of grain will be fully up to that produced last season. Sheep feed will also be greatly increased. A new crop of grass will start; and the grass, which in most places was doing finely before the rains, will be stimulated to greater growth. Sheep owners feel as if a great load was lifted from them. The rain began on Sunday afternoon at 4 o'clock. Total for the week, 2.75 inches; for the season, 6 39 inches. These last rains have very thoroughly upset the calculations of hay speculators, chief among whom is "Unlucky" Baldwin, of the Santa Anita ranch, who had five hundred tons, or more, which he was holding until the price reached $30 per ton. He is now peddling it at $20 per ton. A couple of carloads have been brought here for sale.

MONTEREY.

WEATHER.—EDITORS PRESS: Quite a change in our weather and prospects this last week. Rain about every day; nearly five inches in all for the storm. Grass and grain booming; river also.—E B., Carmel Valley.

SACRAMENTO.

EDITORS PRESS:—Sacramento county looks prosperous; farmers wear a smile and count on a good harvest for their labor and toil, if no unfavorable occurrence darkens their present light. It is generally conceded that never in the history of our county has so much land been put under cultivation. The number of fruit trees and vines planted far exceeds that of any other season; in fact, the quantity to be had was not sufficient to supply the demand. Factories are being put up; all business houses are preparing for the spring campaign. Sacramento is accessible by rail to all points here and East on the Southern line. The snow is low down on the hills, and it is cold and frosty. Many fruits in blossom may sustain a check. Seasons are changing from early days, and we may count on further change. Farmers prefer the heavier rains in the spring; time then is given to seed the land, for the seed to take good root and to make good growth in time for harvest.—G. R.

SAN LUIS OBISPO.

SHORT FEED.—*Tribune:* The Guadalupe dairies last year at this time were shipping 20,000 lbs. of butter per month. This season, although there is an increase numerically, the yield does not exceed 10,000 lbs. The exceeding cold weather has retarded the growth of feed. All fears of a "dry year" and "short crops" have, however, been removed by the heavy rains of the past week.

SANTA BARBARA.

EDITORS PRESS:—Friday, the 10th inst., the rain began to come, and nearly every day or night for seven days the rain came in gentle showers which the thirsty soil absorbed. We had 4½ inches during the storm. Some claim 5 to 7 inches, but that must apply to mountains. The rainfall was so gentle and deliberate that the soil did not suffer from washing or flooding. This amount of water, with our usual spring rains, will make for us one of the most prosperous seasons on record. Farmers had most of the soil well plowed and in order. Small grain looks fine, but not of large growth, and we expect plenty of hay for much less money than it has recently sold for. We have had more cold weather than usual. The season is later. Very few fruit trees have been planted and I presume there will not be many put out this spring. Fruit trees are blooming; the present indications are good for the coming crop, but it is too soon to judge what the crop of fruit will be. I think Lima beans will take the lead again this year. Of course other beans will not be entirely neglected, as prices are good. The farmers never had a better prospect at this time of year, and all feel hopeful.—O. N. CADWELL, Carpinteria, March 19, 1882.

EDITORS PRESS:—Rain, rain! the glorious rain! Some seven inches have fallen in the past six days. It has come slowly, mildly, and nearly every drop has gone where it will do the most good. Every field is soaked; every grumbler's mouth is stopped. Some few fields of volunteer barley were heading out close to the ground; but that is of little moment, all are satisfied and all are sure of abundant crops now, although the season for some crops will be late. It has been so cold that few trees are yet in bloom, and good crops of fruit are anticipated. Some think that the worst is over with regard to at least a portion of our insect pests—their time is passed and their days numbered in the grand revolutions of nature, and we will see them no more till the wheel of fortune shall again turn them up. Let us hope that it is so. Certainly I see much fewer insects on my fruit trees now than were to be seen last year. And yet there are some fruit raisers who seem almost ready to give up in despair and let the insects have it all their own way. This is unwise. When the object is so nearly attained better put forth a little more exertion, and success may follow. Fruit is the salvation of Southern California. Still raining this morning. We begin to look longingly for sun and fair weather.—S. P. SNOW, Santa Barbara Co., March 16th.

SANTA CLARA.

EDITORS PRESS:—The rain has come and gone, and in its passing has dropped into this land a promise for the future that makes our farmers

whistle merrily as they go about their work, for the peculiar facility of this section to retain moisture until late in the summer will now render a crop certain. Those who have been putting out orchards and feeling blue over the drouth are relieved, and all is moving "merrily as a marriage bell." The fruit growers are encouraged also by steps that have been taken toward the establishment of a cannery here; and as "money talks," they are important ones. A number of our best citizens have subscribed, and are ready to put up the coin to make it more than talk; and the time will soon come when a winery will be a good investment. The hills all around here are only waiting to have their sides planted with vines, to yield an abundant harvest; and if your sand-lot people would only drop the shouting idea and come up here, dig out the chaparral brush and plant vineyards in its place, they would soon have labor enough and money plenty. I offer them this advice because, after some inquiry, I have been unable to find one starting upon this paying route to home and comfort. Think of it, ye who stick to the cities, barely able to make Monday morning and Saturday night meet, and weigh the fact honestly! Would you not be better off to get out into the country, and even if the first year or two were filled with hard work and, mayhap, scant fare, would not the end pay? "Seed time and harvest" is promised by One who never fails. While offices and fat slices at the public crib are hard to get and uncertain, there are warm belts and fertile soil all over the State, with square miles of land to be had; and he who uses them wisely and well commands the respect of his people and raises his grand young State to a higher position. Come and try it, and the glamour of city life will drop away and the sure, quiet country ways will be the pleasantest and the best.—CLAYTON, Los Gatos, March 20th.

PROGRESS AT LOS GATOS.—EDITORS PRESS: There is much changing of real estate, and our section is blessed by the advent of the right kind of men—young, strong, enterprising. They are going into fruit mostly, and a large acreage is being planted. Verily, a few years hence our valley will be to the beholder like the promised land to the spies, and should the sanguine hopes of our boys be realized, the bunches of grapes will equal those of "Eschol" of olden time. One of your old subscribers, W. A. More, form Alameda county, has bought a 160-acre ranch, is putting in 25 acres of vines this season and preparing the balance for fruit trees and vines. Success to his enterprise! When a man who has fought the battle up life's hill for three-score years shows such pluck he deserves success. Other purchasers are pushing their way up the hillsides, and their homes seem almost like eagles' nests in their hight; but they clear the land of the chaparral and plant in its place vines and trees, and may they realize and experience what it is to sit down beneath their own vines and fig trees!—CLAYTON, Los Gatos, March 14th.

SHASTA.

EDITORS PRESS:—We are having a remarkable season. South wind and rain, rain, rain—then a day or two of north wind to dry it up and harden the ground. Plows and harrows are brought out and garden work begun, when down comes the rain again, or a snowstorm, or showers of hail, enlivened with thunder and lightning. At present date we have hardly had an hour's continuous sunshine for a week, and it becomes quite monotonous. Feed for stock is still very scarce. Peach trees which were in bloom before this time last year, are kept back by the continued cold weather, but are now in bud and promise a good crop. —MRS. J. M. K., Anderson.

SIERRA.

SIERRA VALLEY FARMING NOTES.—Cor. Reno *Gazette:* From Sierraville to Beckworth's, a distance of about 25 miles, skirting the west side of the valley, will be found a double row of enterprising and thrifty pioneer settlements. One lying along close to the foothills, and having a heavily timbered background of magnificent evergreen, pine, spruce, fir, cedar, tamarack, etc., the other along the tule, at varying distances of from one to four miles; the intervening space forming a vast common of rich, but unimproved and uncultivated land, bearing mostly buffalo grass, and is used by all parties adjoining as an outside pasture. These settlements form an unbroken line, each ranch joining its neighbor, thus forming a vast neighborhood, rich in social advantages, and in striking contrast to many parts of California, where large land owners exclude the possibility of any social pleasures. The tule row of settlements derive their income almost entirely from beef, butter and hay. Along the foothills the farming is more diversified, including, with the above, the chicken business to quite an extent, all the hardy vegetables, potatoes of the finest quality, and grain, wheat, oats, rye and barley; all of the latter without any irrigation whatever, although water would add greatly to the yield. Fruit is also beginning to attract attention, P. Dolly surprising the community by exhibiting at the Grangers' fair last fall five boxes of superb apples, the produce of one tree of seven years' growth. What we greatly need is more water for these foothill ranches; and the intervening space between them and the tules, being an area of about 20,000 acres, and there is not an acre of all this land but what could be profitably farmed if water could be had at $2.50 per acre, each year, and it could be profitably furnished for much less. All that is necessary is enterprise and capital to utilize the natural advantages of the situation. Natural reservoirs indent the mountain ranges on the west side of the valley, having in many instances a very narrow outlet. I have in mind one where a reservoir of 2½ square miles in extent could be secured by damming its outlet, and of a depth corresponding with the hight of the dam. Having a mountain on each side, and plenty of rock and timber, all material for its construction could be moved down hill. The question naturally arises—why do you not enrich yourselves by embracing such an opportunity? I will answer that there are plenty of men here, who, by association of their capital, could construct the work, but they already have all the water they want. They are in the stock business, and now have a very useful and convenient outside pasture of Government land, which they would not have long if those reservoirs were constructed, and having made money in raising and dealing in cattle, are satisfied to let well enough alone.

SAN JOAQUIN.

STATEN ISLAND. — Stockton *Independent*, March 11: Deputy Assessor Covell informed a reporter yesterday that the work of seeding Staten island to barley is progressing as rapidly as men and teams can do it. The levees have been repaired and strengthened where necessary. The ground is found to work readily, and is being seeded at the rate of 100 acres per day. The sub-lessees have taken tracts of from 800 to 1,200 acres, the rental of which is fixed at one quarter of the whole yield delivered at points where it can be shipped. The tenants are required to furnish their own bags. Sowing will be completed in about a month, although it is said the time might be extended for four weeks, and then the grain have sufficient time to mature. The following Stocktonians are putting in crops on the island: Wm. Butterick, James Garwood, Garrett & Shepherd, Blossom & Moseley, J. McDougall, Rowell & Jordan and Arthur Thornton. Mr. Covell also reports wheat in the vicinity of New Hope as looking finely, much of it being so far advanced as to be able to withstand considerable dry weather. The rain of yesterday removed any fears of a failure in that section.

SOLANO.

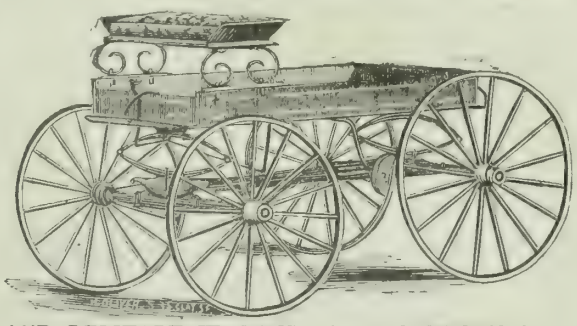
EDITORS PRESS:—As I have not seen our crop prospects printed in your columns, and feeling a little slighted, I will give you a few items concerning them in this locality. At present writing, I do not think I shall be far astray if I say that our prospect for the largest crop we have ever raised in this section is all we could ask for. The principal part of the sowing, owing to the extreme wet winter of '81, is summer-fallow, and as the winter has been so favorable for winter sowing, there is very little land not under crop. The grain has not made the growth that it does some years, but under the conditions looks splendid, for Jack Frost has stood around a great many mornings and the ducks and geese have both left their mark. They have kept a section of country east of Suisun as bare as the road. The duck comes by night and the goose both day and night. I paid a visit to Elmira and vicinity last week, and saw some very fine fields of grain, and everyone feeling confident of good crops. We had a steady rain all Friday night last; then a good shower Sunday night, and Monday, the 13th, it rained off and on all day, and last night it rained quite heavily all night and is still raining. The rainfall to date, March 15th, is 14.50 inches.—A. A. DICKIE, Suisun.

THE RAINS.—EDITORS PRESS: It has been raining off and on for the last 10 days, mingled with snow and hail. The mountains north of here, and west of Pleasant valley, are now covered with snow. On the mornings of the 19th and 20th, the horse-troughs were frozen over tight, while the ground was as white as with a light fall of snow. It is feared much damage has been done the apricots and peaches, as they are all in full bloom; even the cold rain had killed at least one-third of them. From all appearances, there will not be one-third the crop that had been expected. It is to be hoped there has not been so much damage done as at this time thought to be.—J. B., Vacaville, Mar. 20.

VACAVILLE AND ITS PROSPECTS.—EDITORS PRESS: Vacaville is no longer to be rated with your little one-horse towns. It has taken its place among the leading inland villages of the coast. Vacaville is located in the center of one of the richest valleys in the State. Its early productions and the excellent quality of fruit produced here are destined to make it a manufacturing town of canned fruits. Its location, the excellent climate, the pure cold water, the gentle sea breeze that equalizes the atmosphere, and the many other advantages it has, make it one of the most desirable places on the coast to locate. Vacaville, also, has one of the finest schools in the State, with an average of 150 pupils. On Saturday, March 11th, about fifty of the leading fruit-growers met at the Oak Dale school-house and organized what is known as the "Vacaville Fruit Growers Association." The meeting was called to order by Mr. John Huckins. The following gentlemen were chosen officers for the ensuing year: L. W. Buck, President; Mr. John Huckins, Vice-President; Frank McCavit, Secretary; E. R. Thurber, Treasurer. There being but little business before the house, the meeting adjourned, to meet on Saturday, 25th. The object of the association, so far as we can learn, is to protect the fruit-growers' interests, to impart knowledge, to encourage the beginners. Among the many prominent objects to be considered, are the more careful handling of fruit while in transit; the concentrating of orders for boxes, that the same may be procured at less figures; that a more united effort be made to put a better quality of fruit on the market, thereby increasing the demand and enhancing the value of the same. There is no doubt but much good can be accomplished by an organization of this kind. There should be organizations all over the State in the fruit districts. There is a more harmonious feeling existing—a unity of action among the fruit growers. There is a brighter day dawning for the fruit producer. The fruit interest has taken a wide stride in this locality. Already there is a cannery established at Vacaville by Mr. Braughm, who, we understand, represents McLibbie & Co., of Chicago, one of the largest canneries in the United States. Although this does not secure to the fruit growers any advanced prices, yet it does secure to them a market for all the good canning fruit and vegetables in this section at remunerative figures, for fruit can be sold near where produced at lower figures and of much better quality. And right here I will say we predict for the Vacaville cannery the best of success. They can obtain their fruit at lower figures, being in close proximity to the orchards where the best fruit in the State is raised. They will be able to obtain so much better an article that when it is put on the market their brand will take the lead at home or abroad. There should at once spring up an intimate relation between the canner and the fruit producers of this section, for the canner's interest is indirectly the fruit grower's interest. There should be such a price established as to secure the sale of the greatest amount of canned fruit, thereby requiring the increased production of fruits. The price should be at such figures as to make the fruit business a profitable one—if not, horticulture must go by the board.—FARMER, Vacaville.

TUOLUMNE.

EDITORS PRESS:—Storm by day and storm by night, for a week, and still the storm of wind and rain continues. The grumblers must have it chronic on the brain if they are not satisfied with nature's outpouring. The mountains are well supplied with a summer's supply of snow, so as to fertilize the foothills, bringing bloom and beauty to rosy bowers and blossoming gardens. When the present storm subsides we may expect warm and genial weather. Crops will grow as if by magic, and the heart of the husbandman made to rejoice. When failure stares us in the face how we lose faith in nature's God—faith dying, as dieth the blighted grain. Again how soon the dewdrops, which refresh and invigorate all vegetable life, awake within us a spirit of thanksgiving and praise. A lesson surely for a steadfast and unchangeable faith in the goodness of Father God and Mother Nature, even though failures may sometime attend our efforts. The grain in this section looks well. With a fair showering we will have a good crop amongst the foothills. A large area has been cultivated for the first time. Rolling hills full of trees and brushwood have been seeded, promising to be the farmers' very best ground. Settlers are here to stay, having acquired government titles, the lines being well defined between farmers and miners. Mining being a secondary consideration, the farmers are seldom molested. Orchardists are also making extensive improvements in anticipation of a speedy supply of railroad facilities. The Nevada narrow-guage is still at work, and seemingly means business. Improved fruit is the idea, carried out in selecting trees. Peach, plum, pear and apricot seem to be the favorites. There are so many new varieties and names that we cannot particularize. Amongst the pears, the Bartlets and Winter Nelis seem to be favorites. Gen. Winchester, of Columbia, has some splendid appearing and bearing trees of the Kiefer, Congress and Le Compte, all of which are highly extolled by Eastern dealers. One of them was in this county a few days ago, and met with good success in disposing of many varieties at a high price, ranging from fifty cents upwards. It is astonishing what a book with painted photographs will accomplish in the way of sales. It is all well enough if the fruit comes up to the painted standard, but in this respect "it is not all gold that glitters." Our own nurseries could supply home demand just as well and a good deal cheaper than Eastern agents. Raisin grapes are being multiplied by thousands. Wine grapes in this county are at a discount. No large wine manufactories have been established; hence table and raisin grape roots are in demand.—JOHN TAYLOR.



MILK AND DELIVERY WAGONS. A. W. SANBORN & CO., S. F.

Fine Wagons.

We give on this page an engraving of one of the wagons now being sold by A. W. Sanborn & Co, of 24 and 26 Beale street, San Francisco. It is a light wagon intended for the delivery of grocer's goods or for a milk wagon. It may also serve important uses in the country, where a light wagon is needed. Sanborn & Co. have many styles of wagons, some of which may be seen on page 224 of this issue, and many more may be seen by a visit to their establishment.

News in Brief.

TWO colonies, says the Helena, M. T., *Independent*, one from Salt Lake and the other from Oregon, will settle at the head of Flathead lake, M. T.

THE Garfield Monument Committee has collected $106,000, of which $70,000 was given by the city of Cleveland. The sum of $250,000 altogether is wanted.

THE Los Angeles *Times* quotes the opinion of "a good judge of the value of things," to the effect that lands have advanced 25% since the recent heavy rains.

THE town of Truckee is so buried in snow that the smaller buildings are out of sight, and a person can walk from the street directly over the roofs of most of them.

THE Tucson, A. T., *Star* says that during the late snow storm, while the S. P. R. R. Co. was building its road through Paisano pass, 30 horses died of pneumonia.

JAS. H. GAGER, an old pioneer, and for some years past Confidential Secretary for James C. Flood, died last week. He was the first Secretary of the S. F. Stock Board.

NEVADA stock men predict that the coming spring will be an excellent one for grass. The ground is well soaked with water. There is plenty of snow in the mountains.

M. E. DICKSON, of Chicago, has started for Washington with a petition for the pardon of Sergeant Mason. The petition is 2,400 ft. long, and is said to contain 120,000 names.

BRADLAUGH has been urgently pressed by a committee of free thinkers to accept the Presidency of the International Congress which is proposed to be held at Rome next autumn.

THE Chico *Record* says the coming season bids fair to be the liveliest one the lumber region in that county has ever witnessed. Preparations will shortly be made for starting up in all the camps.

NOTWITHSTANDING Vacaville is one of the greatest fruit-shipping points in the State, there has been a greater number of new orchards and vineyards planted this season than all the old ones put together.

WARRANTS were issued for 600 violators of the Sunday law in San Francisco on Monday. This included saloon keepers, cigar dealers, grocerymen, news dealers and people in many other branches of business.

HERR RULF, of Mervell, Prussia, writes the *Jewish World*, saying that the decision of the St. Petersburg Commission on the Jewish question may have the immediate effect of depriving a million people of their homes.

IT has been discovered that the two chief awards made by the Mexican Claims Commission, to the extent of $1,200,000, were obtained by perjury and fraud, and the Secretary of State has stopped payment of the installment due at this time.

THE steamer *Julia*, a double-ender, will soon be put on the route between Vallejo and the Junction, and will carry wagons and teams, a wagon road being in course of construction from the Junction to connect with the roads of Contra Costa county.

FOUR military reservations in Arizona are to be restored to the public domain, viz: Old Camp Crittenden, Camp Goodwin, old Camp Grant and the Camp Verde Garden. The whole number of acres covered by these reservations is about 13,000—nearly all good, tillable land.

THE Bakersfield *Californian* says that during the late storm in Kern county the force of the wind was such that the surface of the plain, over an extent of many hundreds of acres, was completely blown away and left as bare of any sign or vestige of grass as the streets of a city.

ADVICES from Rio Janeiro of the 2d instant state that rain has been falling in torrents for six weeks, doing great damage to the railways in the provinces of Rio Janeiro, Cao Paulo and Minas Geras, and the towns of Sao Joao Mache, Paraty and Perahy are almost destroyed, and many persons are drowned.

AT Tombstone, Arizona, on the 18th, Morgan Earp, one of the principals in the shooting that occurred last November, in which Frederick and Tom McLoury and Billy Clanton were killed, was shot and killed at 11 o'clock at night while playing billiards. The friends of McLoury and Clanton are the supposed assassins, but there is no clue to their identity.

At Last.

When on my day of life the night is falling,
 And in the winds from unsunned spaces blown
I hear far voices out of darkness calling
 My feet to paths unknown;

Thou who hast made my home of life so pleasant,
 Leave not its tenant when its walls decay;
O Love divine, O Helper ever present,
 Be thou my strength and stay!

Be near me when all else is from me drifting,
 Earth, sky, home's pictures, days of shade and shine,
And kindly faces to my own uplifting
 The love which answers mine.

I have but thee, O Father! Let thy spirit
 Be with me then to comfort and uphold;
No gate of pearl, no branch of palm, I merit,
 Nor street of shining gold.

Suffice it if—my good and ill unreckoned,
 And both forgiven through Thy unbounding grace—
I find myself by hands familiar beckoned
 Unto my fitting place.

Some humble door among Thy many mansions,
 Some sheltering shade where sin and striving cease,
And flows forever through heaven's green expansions
 The river of Thy peace.

There, from the music round about me stealing
 I fain would learn the new and holy song,
And find, at last, beneath Thy trees of healing,
 The life for which I long.

J. G. Whittier.

Mysterious Organist.

Years ago at a grand old cathedral overlooking the Rhine, there appeared a mysterious organist. The great composer who had played the organ so long, had suddenly died, and every person from the peasant to the king was wondering who could be found to fill his place. One bright Sabbath morn, as the sexton entered the church, he saw a stranger sitting at the crape-shrouded organ. He was a tall, graceful man, with a pale but strikingly handsome face, great black, melancholy eyes, and hair like a raven for gloss and color, sweeping in dark waves over his shoulders. He did not seem to notice the sexton, but went to playing; and such music as he drew forth from the instrument no words can describe. The astonished listener declared that the organ seemed to have grown human—that it wailed and sighed and clamored. When the music at length ceased, the sexton hastened to the stranger and said:

"Pray, who are you, sir?"

"Do not ask my name," he replied, "I have heard that you are in want of an organist, and have come here on trial."

"You'll be sure to get the place!" exclaimed the sexton. "Why, you surpass him that's dead and gone."

"No, no—you overrate me," resumed the stranger, with a sad smile; and then, as if disinclined to conversation, he turned from old Hans and began to play again. And now the music changed from a sorrowful strain to a grand old pean, and the mysterious organist—

"Looking upward full of grace,
 Prayed from a happy place,
 God's glory smote him on the face."

And his countenance seemed not unlike that of St. Michael as portrayed by Guido.

Lost in the harmonies that swelled around him, he sat with far-seeing gaze fixed on the distant sky—a glimpse of which he caught through the open window—when there was a stir about the church and a royal party came sweeping in. Among them might be seen a young girl, with blue eyes like the violet hue, and lips like cherries. This was the Princess Elizabeth, and all eyes turned to her as she seated herself in the velvet-cushioned pew appropriated to the court. No sooner had the music reached her ear than she started as if a ghost had crossed her path. At last her eyes met those of the organist in a long, yearning look, and the melody hushed its joyous notes and once more wailed and clamored.

"By my faith," whispered the king to his daughter, "this organist has a master hand. Hark ye! he shall play at your wedding."

The pale lips of the princess parted, but she could not speak—she was dumb with grief. Like one in a painful dream she saw the pale man sitting at the organ, and heard the melody that filled the vast edifice. Aye, full well she knew who he was, and why the instrument seemed breathing out the agony of a tortured soul.

When the service was over, and the royal party had left the cathedral he stole away as mysteriously as he had come. He was not seen by the sexton until the vesper hour, and then he appeared in the organ loft and commenced his task. While he played, a veiled figure glided in and knelt near the shrine. There she knelt until the worshippers dispersed, when the sexton touched her on the shoulder and said:

"Madam, everyone has gone except you and me, and I wish to close the door."

The sexton drew back into a shady niche and listened. The mysterious organist still kept his place, but his head was bowed upon the instrument and he could not see the lone devotee. At length she arose from the aisle, and, moving to the organ loft, paused before the musician.

"Bertram!" she murmured.

Quick as thought the organist raised his head. There, with the light of a lamp suspended to the arch above falling upon her, stood the princess who had graced the royal pew that day. The court dress of velvet, with its soft ermine trimmings, the tiara, the necklace and the bracelets, had been exchanged for a gray serge robe, and a long thick veil, which was now pushed back from the girlish face.

"Oh, Elizabeth, Elizabeth!" ejaculated the organist, as he sank at her feet and gazed wistfully into her troubled eyes.

"Why are you here, Bertram?" asked the princess.

"You are to be married on the morrow?"

"Yes," sobbed the girl. "Oh, Bertram, what a trial it will be to stand at yonder altar and take upon me the vow which will doom me to a living death!"

"Think of me!" rejoined the organist. "Your royal father has requested me to play at the wedding, and I have promised to be here. If I were your equal I could be the bridegroom instead of the organist; and the poor musician must give you up."

"It is like rending body and soul asunder to part with you," said the girl. "To-night I tell you this—tell you how fondly I love you; but in a few hours it will be a sin. Go, go, and God bless you!"

She waved him from her as if she would banish him while she had the power to do so. And he, how was it with him? He rose to leave her, then came back, held her on his heart, in one long embrace, and with a half-smothered farewell, left her.

The next morning dawned in cloudless splendor, and at an early hour the cathedral was thrown open, and the sexton began to prepare for the brilliant wedding.

Flame-colored flowers waved by the wayside; flame-colored leaves came rushing down from the trees and lay in light heaps upon the ground; and the ripe wheat waved like a golden sea, and the berries dropped in red and yellow clusters over the rocks and along the Rhine.

At length the palace gates were opened, and the royal party appeared, escorting the Princess Elizabeth to the cathedral, where the marriage was to be solemnized. It was a brave pageant; far brighter than the entwined foliage and blossoms were the tufts of plumes which floated from the stately heads, and the festal robes that streamed down over the housings of the superb steeds. But the princess, mounted on a snow-white palfry, and clad in a snow-white velvet, looked pale and sad; and when, on nearing the church, she heard a gust of organ music, which, though very brilliant in sound, struck on her ear like a funeral knell, she trembled and would have fallen had not a page supported her. A few moments afterwards she entered the cathedral. There, with his retinue, stood the bridegroom, whom she had never before seen. But her glance roved from him to the organ loft, where she had expected to see the mysterious organist. He was gone, and she was obliged to return the graceful bow of the king to whom she had been betrothed from motives of policy. Mechanically she knelt at the altar-stone; mechanically listened to the service and made the responses. Then her husband drew her to him in a convulsive embrace and whispered:

"Elizabeth! my queen! my wife, look up!"

Trembling in every limb she obeyed. Why did those dark eyes thrill her so? Why did the smile bring a glow on her cheek? Ah, though the king wore the purple, and many a jeweled order glittered on his breast, he seemed the same humble person who had been employed to teach music, and had taught her the lore of love.

"Elizabeth!" murmured the monarch. "Bertram Hoffman, the mysterious organist and King Oscar are one! Forgive my stratagem. I wished to marry you, but I would not drag you to the altar an unwilling bride. Your father was in the secret!"

While tears of joy rushed from her blue eyes, the new made queen returned her husband's fond kiss, and for once two hearts were made happy by a royal marriage.—*From the German.*

Explosion of Water.—An experiment may easily be made by any person having the means at hand that will illustrate the fact that water practically explodes when relieved with sufficient suddenness of high pressure, while at a temperature due to that pressure, as it is in a steam boiler. Place a piece of dry wood or other not very strong dry porous body inside of a short piece of iron pipe containing water. The pipe, say a short piece of steam pipe, having been fitted for this experiment by attaching to one end a gate valve, with an open way as large, or nearly as large, as the opening in the pipe, and to the other end of the pipe attaching a steam pressure gauge and a safety valve, the whole will be a miniature steam boiler, with water and a pit of wood in it. After fixing the small boiler firmly upon a suitably firm foundation, where steam can be raised, apply heat and raise steam to any desired safe pressure, and maintain it till the porous body in the water becomes thoroughly saturated with the boiler water—a few minutes will suffice; then let the gate valve be opened with a jerk. The instantaneous escape of the steam, followed so closely by the exploded water as to be sensibly simultaneous, may be expected, and the porous bit of wood (which should be of considerable size), if it can be found at all, will be reduced to fine splinters by the expansion, practical explosion, of the water with which its pores have been filled.

Girls in Earnest.

Dear young girls, if you feel tired and discouraged, it may brighten you a little to hear the true story of a couple of maidens who fought against fate more than 25 years ago, in the wilds of Maine.

The Wellman family, consisting of a widow and six children, lived "off on a cross-road," half a mile from the highway; and people in the quaint little village under the hill pitied them because their house "looked so lonesome." It was a low-roofed, unpainted cottage, with a smock bush of southernwood each side of the door-stone, and a well-sweep a few rods to the right. Not at all a charming place, except for the grand mountain view at the back door, which Marcia and Jane drank in as they stood there feeding the chickens.

These girls walked more than a mile, over a hilly, rocky road, to a very common school, where at best they had only five months' instruction in the year. So what could they be thinking of to try to get an education? Why, anybody could see it was a sheer impossibility!

But here let me tell you that Marcia Wellman didn't mind such trifles as impossibilities. Not she! You couldn't daunt her brave spirit any more than you can kill out Canada thistles. The winter she was 16 and Jane 14, they had mastered common arithmetic and were beginning algebra and Latin. Miss Gordon, the teacher, kindly heard their lessons after school; for, as she wrote her friends in New York, "they are wonderful girls," and she felt it an honor to help them.

In January of that year a great storm set in, the wind and snow following one another like two stump orators in a Presidential campaign. The sun rose next Monday morning and looked for the little town of Vance, but it was buried alive under the snow. Not a fence was to be seen, or the remotest trace of a road.

"No school to-day," sighed Jane, looking out at the earth as it lay in its white sleep.

"No, but there'll be school to-morrow. I can just see Mr. Diggles, ever so far off, with any number of oxen. Oh, what a cross it is to live on a cross-road."

Marcia set her teeth as she spoke, knowing Mr. Diggles to be an unneighborly man, who would never think of letting them out of their white prison.

"Nobody'll remember us," said Jane, tearfully; "We shall be snowed in for a week!"

"Oh, fie!" said Marcia, whose courage always revived when she saw her sister crying; "I'll dig my way out, never fear."

"Why, Marcia Fuller Wellman! It's half a mile, and the drifts are as high as your head. You dig us out, indeed!"

"Oh, well, you'll help," said Marcia, confidently. "And Mother'll help."

She was a skillful general. She knew her men. When Mrs. Wellman and Jane heard her clear, ringing voice, and saw her face set like Hannibal crossing the Alps, there was nothing for it but look up the snow-shovel. With that and the barn-shovel and a spade, these three intrepid women undertook to dig out their way through a chain of mountains to the village.

"Slow and steady," said the mother, thrusting her shovel into the heart of a pyramid.

Cut, slash, went the spade; that was Marcia. Thump, plunge, went the barn-shovel; that was Jane. Ah! but it was terrible work for young arms!

By noon the cross-road was half cleared, and the girls caught their breath, and wondered if Mr. Diggles, down by the corner, "wouldn't feel ashamed of himself."

But he was so accustomed to feeling ashamed that he didn't mind it. Like the Levite, he passed by on the other side; and we will be charitable enough to think he didn't see the brave women who were trying to do the work of oxen.

Before dark it was done, and Marcia flourished her tired arms, exclaiming,

"Sound the trumpet, beat the drum!
 Tremble, Vance, we come, we come!"

It was a brilliant victory. But the girls did not know they had made their lives sublime. They never dreamed that this thing which was done in a corner was spread far and wide through the streets of New York.

Two weeks afterward, as they were eagerly conning their Latin grammar in the kitchen, the stage-driver dropped at their door an enormous package, containing forty valuable books.

Books for them! What did it mean? Perhaps Miss Gordon could have told, if she had been there.

The package was sent by three eminent men of New York, and bore a card inscribed with the words: "To the Misses Wellman, as a token of respect, for their pursuit of knowledge under difficulties."

Thus ends my true story of two "girls in earnest," either of them "worthy to sit at a king's right hand in thunderstorms."—*Christian at Work.*

Thread from Wood.—The manufacture of thread from wood for crochet and sewing purposes has, it is said, recently been commenced in the middle of Sweden. It is wound in balls by machinery, either by hand or steam, which, with the labeling, takes 1 minute and 12 seconds, and the balls are packed up in cardboard boxes, generally 10 in a box. Plenty of orders from all parts of Sweden have come in, but as the works are not in proper order, there has hardly been time to complete them all. The production gives fair promise of success, and it is expected to be very important for home consumption.

Little Longfellow's First Poem.

When our great poet, Longfellow, was nine years old, his master wanted him to write a composition. Little Henry, like all children, shrank from the undertaking. His master said:

"You can write, can you not?"

"Yes," was the reply.

"Then you can put words together?"

"Yes, sir."

"Then," said the master, "you may take your slate and go behind the schoolhouse, and there you can find something to write about, and then you can tell what it is, what it is used for, and what is to be done with it, and that will be a composition."

Henry took his slate and went out. He went behind Mr. Finney's barn, which chanced to be near, and seeing a fine turnip growing up, he thought he knew what that was, what it was for, and what would be done with it.

A half-hour had been allowed to Henry for his first undertaking in writing compositions. In half an hour he carried in his work, all accomplished, and the master is said to have been affected almost to tears when he saw what little Henry had done in the short time:

MR. FINNEY'S TURNIP.

Mr. Finney had a turnip,
 And it grew, and it grew;
And it grew behind the barn,
 And the turnip did no harm.

And it grew, and it grew,
 Till it could grow no taller;
Then Mr. Finney took it up
 And put it in the cellar.

There it lay, there it lay,
 Till it began to rot,
When his daughter Susie washed it,
 And she put it in the pot.

Then she boiled it, and boiled it,
 As long as she was able,
Then his daughter Lizzie took it
 And she put it on the table.

Mr. Finney and his wife
 Both sat down to sup,
And they ate, and they ate,
 Until they ate the turnip up.

The Opportunity in the West.

The Arizona *Democrat* says: If nature has endowed you with some energy, a fair amount of "grit," a modicum of common sense, a willing hand and a not too sluggish head, come West! If you are willing to earn your bread in accordance with the fore-ordained destiny of man, come West! If you are willing to take your chances in the fierce and eager race for wealth and distinction among the young, active and enterprising element of the frontier, come West! If you are prepared to fight the battle of life, and have the nerve and staying qualities that can snatch victory from the jaws of defeat, come West! If you are the happy possessor of a light heart that can smile at fate and take the whips and scorns of outrageous fortune serenely, come West! If you have a good constitution, an honest heart and a not too elastic conscience, come West and grow up with the country. You may, perhaps, think that we are asking for too many good qualities and natural gifts in a young man from the East. We are aware that it is difficult to find many who will fill the bill, but we are also aware that these are the qualities that command success in a new country. They are qualities to some extent native and to the Western manner born. They are the rule and not the exception among the young, active, go-ahead spirits of the border, and he who is deficient in them had better not enter the lists for fame or fortune in the far West.

We claim that to-day there is not a finer field on the globe, for the display of every attribute that goes to make a man, than the Western States and Territories. The doctrine of the survival of the fittest here finds its truest exposition; merit and true manhood here finds recognition and appreciation. The youth who was born with a silver spoon in his mouth is treated with no more consideration than his plebian neighbor who had to be content with an iron one. Men are placed upon their natural level, with a fair start in the race of life, and the goal is first reached by him whose pluck, and bottom, and staying qualities are the best. So, young man, if you think that nature has equipped you with the gifts that will enable you to hold your own in the rough-and-tumble fight for fortune on the distant frontier, by all means, come on. We will give you a hearty welcome, a fair start and a good send off. You will find a country worthy of your best efforts, and a people not slow to acknowledge them. You will find a land with grand resources, blessed with a perfect climate, and endowed by the Creator with every natural advantage to make a great and prosperous State. So, come, be one of us, take your share in our grand heritage, cast your lot with our future, and take part in the glorious fruition of our hopes, so near at hand. Turn your steps to a region, the sun of whose future greatness, just rising above the horizon, is shedding its golden beams over valley, mountain and mesa, and whose midday splendor will cover with a blaze of glory this favored land. Come to Arizona, the mineral monarch of the Western world, which will yet become—

"The State of every State the pride,
Beloved of Heaven and all the world beside."

Sick-Room.—Food should not be left in a sick-room, but after the patient has tasted of it remove it, if no more is wanted, immediately. Never keep it by the sick one with the hope that he or she may partake of it by-and-by.

New Colors in Upholstery Goods.

With the revival of the Renaissance and the prevailing æsthetic element in household decoration, especially abroad, innumerable new and exquisite colors and shades have sprung up in all classes of upholstery stuffs. Primary color combinations are now almost obsolete, although the conventional triple combinations with which every designer is familiar will probably live forever (through the patronage of the masses) as standard rules of crude harmony.

But these rules, standard and conventional though they may be, are ignored just now with consummate disregard for precedent and with an apparently reckless desire to reach novelty in effects. In the axiom of primary color harmony, orange and reds are supposed to result in discord when used together; though in the new velours frise, satin de gene, and satin lampage they are combined with rich effect.

Authorities at one period of decorative art universally accepted the following formula, and designers observed it with profound obeisance.

Yellow—With white, gray, or black—and red.

Red—With white, gray, or black—and blue.

Blue—With white, gray, or black—and yellow.

It will be seen that by this system two primary colors are used, such as yellow and red, red and blue, or blue and yellow, in combination with white, gray or black.

Another conventional principle was combining yellow and green, red and orange, red and violet, red and green, blue and orange, or blue and violet, with white, gray or black.

Of course, these combinations depend for their harmony greatly upon the proportion in which they are used together, but, at best, they were bad rules for any colorist to adopt.

The new colors which are in use to-day, particularly upon foreign upholstery goods, are not different from what could have been prepared years ago, but their liberal use and application set at variance all previous laws of harmony, and the effects produced are as rich as they are novel.

The peculiar color of a crushed strawberry is known to everybody, and all can easily imagine its appearance in plush or velours, in the several shades which are run off.

Cuivre rouge is a shade which has a grim, dusty appearance, feu (fire) another shade having a dazzling effect when the light plays over the nap; the sheen upon this colored goods is exquisite, and suggests to our minds other shades, which would be very popular if procurable.

Something on this same order is the capote or blue, the capucine (a shade of garnet) and brique, a peculiar shade of red. Then gros blues, or heavy rich shades, which just at present are very much in use, and, indeed, the sapphire color has also proved of service, and commends itself by its soft beauty. All these, with bottle greens, apple olives, ocean blues, ciel (sky) blues, vieux (old) blues and rouge Romaine (Roman red), are forming what we believe to be the nucleus of a new school of color harmony.—*The Carpet Trade Review.*

Dreams and Their Conditions.

Dreams are night thoughts, unchecked by the judgment and uncontrolled by the will. It is not true that we do not reason in dreams, that the exercise of the judgment is wholly suspended and that the will is entirely powerless or ceases to act. These faculties are not altogether in abeyance, but they doze while the subordinate powers of the mind—those which play the parts of picture carriers and record finders—ransack the treasures of memory and mingle together, in the direst confusion, old things and new. Imagination is not active, but it remains just enough awake to supply the connecting links which give seeming continuity to those parts of the phantasmagoria which we chance to remember on recovering perfect self-consciousness, and which, being remembered, we call "dreams." No one remembers more than one dream, unless he has roused from sleep more than once. This experience has led to the inference that dreams only occur at the moment or in the act of awaking. There are dreams which take place in the process of returning to consciousness—for example, those instantaneous scenes and spectacles which are suggested by the sound or feeling that rouses the dreamer; but, in result of a long and close study of the subject with a view to discover the nature of dreams and the laws of dreaming, for medical purposes, in connection with the treatment of sleeplessness, I am persuaded that dreams occur in the course of sleep and are wholly forgotten.

That they do not and cannot take place in deep sleep is probable, because deep sleep is general sleep, and when this state prevails the subordinate faculties are sleeping, and the pictures and records which compose dreams are not disturbed. To understand dreams we must understand sleep, and it is because the two phenomena have not hitherto been studied together that so little is generally known about either.—*Popular Science Monthly.*

PAINT FOR BRICK WALLS.—A cheap paint is made for brick walls by simply mixing up good hydraulic cement in water. The natural tint is neutral and pleasing, but may be readily varied. This paint cannot be washed off by storms, nor peeled off by the sun.

YOUNG FOLKS' COLUMN.

Our Puzzle Box.

Numerical Enigma.

I am composed of twenty-eight letters.
My 17, 12, 21 is a number.
My 17, 5, 7 is to endeavor.
My 1, 2, 26 is an industrious little insect.
My 3, 23, 9, 13 is acid.
My 18, 6, 24 is a beverage.
My 10, 22, 26 is an epoch.
My 11, 14, 22, 25, 17 is conformity to the law, either human or divine.
My 11, 4, 26 is to regret.
My 15, 8, 11, 26 is blood.
My 16, 8, 20 is an agricultural implement.
My 19, 24, 23 was possessed.
My 27 is found in parsimony.
My whole is the oft-quoted advice of a revolutionary frontiersman and hero.

MELANCTHON.

Decapitations.

1. Behead a part of the body and leave a unit.
2. Behead a kind of wood and leave a curve.
3. Behead a bird and leave what was made a place of safety in a flood.
4. Behead a manner and leave a poem.
5. Behead a fish and leave part of a wheel.

JAMES

Birds.

1. A color and a letter of Jeremiah.
2. A metal and the act of taking that which belongs to another.
3. Not the whole and a long elevation.
4. An article used in driving, indigent and a legal instrument.
5. A masculine nickname, a vowel and part of a chain.
6. Sometimes defined as "a spree."
7. A city and a head dress.
8. A French negative, a diminutive and an article used for winding yarn.
9. My first often leads to my last, and my whole is a sweet singer.

UNCLE DAVE.

Word Square.

1. A sound of any kind.
2. A species of *iris* with a fragrant root.
3. Fetters.
4. From the time that.
5. A county of England.

MARK

Problem.

A tract of land is to be laid out in the form of a square, and to be enclosed with a post and rail fence, five rails high, so that each rod of fence shall contain ten rails. How large must be the square to contain just as many acres as there are rails in the fence that encloses it?

Answers to Last Puzzles.

NUMERICAL ENIGMA.—
"Let humble Allen, with an awkward shame,
Do good by stealth, and blush to find it fame."

TRANSPOSITIONS.—1. Sure, ruse. 2. Two, tow. 3. Kate, take.

HIDDEN TREES.—1. Ash. 2. Elm. 3. Fig. 4 Date.

CURTAILMENTS.—1. Forty, fort, for. 2. Yearn, year, yea.

SYLLABLE PUZZLE.—Alleghany (all-egg-hay-nigh).

The Pig that Didn't Go to Market.

"This little pig went to market and this little pig stayed at home," said mamma, as she took hold of baby's toes, one by one, just as our mamma has done a hundred times, probably. That was before Bessie (who was the baby, you know) went to sleep, and the very next day something very sad happened. Papa was down in the cellar cutting kindling wood, when the hatchet slipped and went right through Bessie's little shoe, cutting off that poor little pig that went to market.

The kind doctor came, and in a few weeks Bessie was running around playing the same as usual. But she was wondering all the time where that little toe of hers was gone, till one day she made up her mind.

"Why, it's gone to market, for mamma said so, and I'm going after it!" Now Bessie knew the market man very well indeed, because he came to her house every day, and sometimes brought her apples. So she put on her sun-bonnet, and went down to the front gate to watch for the butcher, and pretty soon he came along in his white cart.

"Whoa!" said the man to his horse, when Bessie waved her hand.

"If you please, Mr. Graham, do you keep pigs?"

"Oh, yes," said the butcher, "lots of them."

"Well, then," said Bessie, "have you got mine that went to market?"

"What kind of a looking pig was it?" asked Mr. Graham, getting down from his cart.

"I'll show you," said Bessie as she sat upon the grass and pulled off her stockings, "it looks just like this one"—as she took hold of the biggest of her five white toes.

"This pig is here, you see, but on my other foot, he's gone to market."

But the butcher man only laughed.

"No, I haven't got your little pig," he said.

"Perhaps you have a little pig that will fit," said Bessie, "and will let me have it"—and she almost began to cry when she found that she couldn't get her little pig back again; but Mr. Graham took her up in his arms and lifted her in his cart and let her drive the old horse right up to the back door, and mamma came out and made believe Bessie was the butcher, and she had such a splendid time afterward playing house with the dining room chairs that she forgot all about that little pig that went to market.

AN American, returning from England, vouches for the following as the actual vernacular of a young Yorkshire Squire, used in conversation: "'Arry, hits not the 'unting as 'urts an 'orse; but the 'ammer, 'ammer, 'ammer hon the 'ard hiron 'igh road. If you want to 'unt 'ire an 'ack hand 'ammer 'im."

GOOD HEALTH.

A Commercial View of Life and Death.

The London *Sanitary Record* quotes a recent writer on vital statistics who calculates that of 10 children born in Norway, a little over 7 reach their twentieth year; that in England and the United States of America somewhat less than 7 reach that stage; that in France only 5 reach it, and in Ireland less than 5. He tells us that in Norway, out of 10,000 born, rather more than one out of three reaches the age of seventy; in England, one out of four; in the United States, if both sexes be computed, less than one out of four; in France, less than one out of eight, and in Ireland less than one out of eleven, and he adds this significant computation, based on what may be called the commercial view of the vital question: In producing dead machinery, the cost of all that is broken in the making is charged to the cost of that which is completed. If we estimated by this same rule the cost of rearing children to manhood, if we calculate up the number of years lived by those who fell with the years of those who passed successfully to manhood, there would be found between the two extremes presented in Norway and Ireland—both, be it observed, unnatural—a loss of 120 greater in the first year of life, 75% greater in the first four years of life, and 120% greater in the years between the fifth and the twentieth, in Ireland than in Norway. In Norway the average length of life of the effective population is 39, and rather more than a half, years, in England 35½ years, in France not quite 33 years, and in Ireland not quite 29 years. Thus, again comparing the best with the worst of a scale of vitality, in which both are bad, in Norway the proportion of the population that reaches 20 survives nearly 40 years, or four-fifths of the effective period, to contribute to the wealth of the community; while in Ireland the same proportion survives less than 29, or considerably under three-fifths of the effective period.

Hints about Eating Breakfast.

Having tested a number of meals in a general way, eating more or less each time, find out as near as may be what is the proper amount for a meal. Begin with a very light breakfast of ordinary food, such as you have been accustomed to, and note the number of hours you can go without feeling a want of more food. For a very light breakfast, say one roll, a cup of coffee and a very small piece of meat, three hours or less will be found the limit. This is not offered as a rule, but as a suggestion, for it makes a vast difference what you do in those three hours. A given amount of food will go farther in manual labor, as brain work is more exhausting than hand work. The next time try a little more, and in the course of a dozen breakfasts you will learn to judge pretty closely what you require to carry on your work till the hour of the next meal. Having found out just what you need, never on any consideration, take more. Never mind how nice the steak, how tempting any food may be, shut right down on the whole eating business the instant you have had enough. Too little can be repaired by eating a light lunch before the next meal. Too much cannot be repaired, and you must pay for the indiscretion. In all this there must be plain common sense. Do not imitate the invalid who kept a pair of scales on the breakfast table to weigh his daily bread. Eat and be satisfied, and then stop.—*Food and Health.*

SAND BAG FOR THE SICK ROOM.—One of the most convenient articles to be used in a sick-room is a sand bag. Get some clean, fine sand, dry it thoroughly in a kettle on the stove; make a bag about eight inches square of flannel, fill it with the dry sand, sew the opening carefully together, and cover the bag with cotton or linen cloth. This will prevent the sand from sifting out, and will also enable you to heat the bag quickly by placing it in the oven, or even on top of the stove. After once using this you will never again attempt to warm the feet or hands of a sick person with a bottle of hot water or a brick. The sand holds the heat for a long time, and the bag can be tucked up to the back without hurting the invalid. It is a good plan to make two or three of the bags and have them ready for use.

VARIATIONS IN STATURE.—A contributor to the *German Militia Wochenblatt*, who has lately been employed in mustering and examining the recruits drafted into the German army, has established by a long series of careful measurements, not only that the hight of a man varies very considerably at different times of the day, but also that this variation takes place with great regularity in every individual man. The greatest difference in hight observed was an inch and a half.

PERFUMES AND OZONE.—It is discovered that perfumes exert a healthy influence on the atmosphere, converting the oxygen into ozone. Cherry, laurel, clove, lavender, mint, juniper, fennel and bergamot develop the largest quantity of ozone. Flowers without perfume do not develop it, but the flowers of narcissus, mignonette, heliotrope and lily of the valley develop it in close vessels. Odorous flowers, cultivated in marshy places, would be valuable in purifying the air.

DOMESTIC ECONOMY.

CHARLOTTE RUSSE.—Use one quart of sweet milk, one ounce of gelatine, six ounces of pulverized sugar, one quart of cream, half a cup of Sherry wine, half a teaspoonful of vanilla; soak the gelatine in the milk one hour; set it on the back part of the stove, and stir occasionally until all is dissolved; add the sugar and wine; if you prefer to omit the wine, you can substitute some other flavoring, or simply use a teaspoonful and a half of vanilla; let it cool until it begins to harden; whip the cream to a stiff froth, and when the milk, etc., is cool, stir all together; line the dish in which the charlotte is to be served with sponge cake, then pour in the cream. This should be done long enough before it is to be eaten to allow the cake time to soften. Ladies fingers are sometimes preferred to common sponge cake for the lining.

COCOANUT CAKE.—Cocoanut cake made from this receipe is as nice cake as one need wish to make: Take the whites of five eggs, one small cupful of sweet milk, one cupful and two-thirds of another of granulated sugar, two-thirds of a cupful of butter, one teaspoonful and a half of baking powder, about three cupfuls of sifted flour, flavor with almond extract, bake in layers. Beat the whites of two or three eggs to a froth, add pulverized sugar enough to make rather thin frosting, and put between the layers; on this scatter cocoanut; put on enough to make a nice layer; for the top and sides of the cake the frosting should be a little thicker. I think the best way to get the cocoanut on the sides is to put it on with your hands; you can press it gently upon the frosting and make it stick to it.

VINEGAR DUMPLINGS.—Take one and a half cupfuls of good molasses, the same quantity of hot water, and one-third of a cupful of butter, and the same quantity of vinegar. Put into a stew-pan and let boil ten minutes. Make the dumplings with one cupful of sour milk, one tablespoonful of butter (or sour cream), one small teaspoonful of soda, and enough wheat flour to roll out very soft. Roll out an inch thick and cut with a biscuit cutter. Put as near the side of the stew-pan as you can, to prevent the syrup from boiling over them. Cover with a pan and boil slowly for fifteen minutes. When cooked, pour the sauce over them, and serve hot. Sugar can be substituted for molasses, if that is not liked.

BOILED CORNED BEEF CAKES.—Soak corned beef over night in cold water. Put into boiling water with a teacupful of vinegar turned in. Boil very slowly for four hours. Take out the bones; put a plate over it, with flat-irons or a heavy weight upon it. Keep the best part of it to slice very thin for cold corned beef. Chop the rest very fine. Take twice the quantity of cold boiled potatoes chopped fine. Mix with a little salt and pepper, and two tablespoonfuls of cream or milk. Roll into flat cakes by flouring the hands with wheat flour, and fry on each side like fish balls. Any kind of cold meat can be made into such cakes for breakfast or supper.

SALT PORK FRIED.—Cut the pork into very thin slices, and soak it over night in milk and water, for milk will freshen the pork much sooner than water. When ready to cook put into a spider and fry it to a light brown on each side. Make a batter of one egg, a tablespoonful of flour, and a little milk or water; just enough flour to make a batter, as for griddle cakes. Dip in the hot browned slices, cover with batter on each side, and fry in the pork fat to a light brown. If preferred, the slices of pork can be baked in the oven, until all the grease is out, and then dipped into batter and fried.

EXCELLENT TURKEY HASH.—Chop quite fine two good-sized onions; put in a hot frying pan with enough of beef-dripping and butter to fry them till tender; then add a pint and a half of chopped turkey, with salt and pepper to taste, and a little thyme; add boiling water enough to moisten, without making much gravy; a very little brown flour sifted in and stirred. Boil it up and serve; or it may be turned over half slices of buttered toast.

SPICED DROP CAKES.—Take one cupful of molasses, half a cupful of sugar, half a cupful of butter, one cupful of sour milk, a small spoonful of soda, dissolved in boiling water and turned into milk; one teaspoonful of cinnamon, one of cloves, and one of ginger, all ground; four small cupfuls of sifted flour. Butter shallow pans or tins, and drop the cakes from a spoon, making them high in the middle.

HOT SLAW.—Chop a cabbage fine. Put a cupful of sweet cream, or a cupful of milk with a tablespoonful of butter in it, over the fire. When nearly boiling stir in one well-beaten egg, and three tablespoonfuls of strong vinegar. Stir rapidly until thick as boiled custard. Season with pepper and salt, and turn over the chopped cabbage. Stir it thoroughly and serve at once.

MEAT CAKES.—Chop any kind of fresh, cold meat very fine, season with salt and pepper, then make a nice batter, lay a spoonful of the batter on a greased griddle, then a spoonful of chopped meat, then a spoonful of batter; when browned on one side turn carefully, brown on the other, and serve hot.

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TABLE OF CONTENTS.

GENERAL EDITORIALS.—Propagating Vines by Layering, 213. The Week; The Railroad Problem; The Grain Gambling Movement, 220. Arctic Geography, 221.
ILLUSTRATIONS.—Method of Propagating Vines by Layering, 213. Milk and Delivery Wagon, 217. Herald Island, in the Arctic Ocean, 221.
CORRESPONDENCE.—Present Aspect of the Debris Question, 214. Mangels for Moist Land, 221.
HORTICULTURE.—Oranges and Temperature, 214.
SERICULTURE.—The Silkworm—Its Education and Reproduction, 215.
PATRONS OF HUSBANDRY.—Reorganization of the Grangers' Business Association; In Memoriam; Prof. Hilgard's Salary, 216
AGRICULTURAL NOTES, from the various Counties of California, 216-7
HOME CIRCLE.—At Last, (poetry); Mysterious Organist; Girls in Earnest; Little Longfellow's First Poem; The Opportunity in the West, 218. New Colors in Upholstery; Dreams and their Conditions, 219.
YOUNG FOLKS' COLUMN.—Our Puzzle Box; The Pig that Didn't go to Market, 219.
GOOD HEALTH.—A Commercial View of Life and Death; Hints about Eating Breakfast; Sand Bag for the Sick-room, 219.
DOMESTIC ECONOMY.—Charlotte Russe; Cocoanut Cake; Vinegar Dumplings; Boiled Corned Beef Cakes; Salt Pork Fried, 219.
QUERIES AND REPLIES.—Silos and Ensilage; Ostrich Farming; Information on Carp Culture; Disinfecting Oranges, 221.
223.
PISCICULTURE.—Carp Experience in Inyo County,
AGRICULTURAL ENGINEER.—Farm Engineering, 223.
THE VINEYARD.—The Hermitage—Its Famous Vineyards and Vines, 223.

Business Announcements.

Victor Mower, Judson Horse Nail Co., S. F.
"Buckeye" Mowers, and Reapers, M.C.Hawley & Co., S.F.
Wagons and Carriages, A. W. Sanborn & Co., S. F.
Minnesota Chief Separators, Seymour, Sabin & Co.
Tiger Self-Operating Horse Rake, Baker & Hamilton, S F.
Agricultural Implements, Jackson & Truman S. F.
Poland China Pigs, E. Gallup, Hanford, Cal.
New Seeds and Plants Hovey & Co., Boston, Mass.
Patent Iron Weaner, H. C Rice, Easthampton, Mass.
Olive Trees, C. C. Brown, Pasadena, Cal.
Turner's Nurseries, San Bernardino, Cal.
Blackberry Plants, J. D. Enas, Napa, Cal.

The Week.

It has been a week of tumult among the elements, ending at last in a flood of sunshine and a true vernal atmosphere. Rains everywhere—abundant and reassuring rains—have been the burden of our correspondence from the interior. All have taken new courage, and borrow gladness from the prospect of abundant results from labor and investment. On the mountains there has been a season of violent snow storms, engulfing the overland trains and burying some of the mountain towns almost to their chimneys. Thus is abundantwater in the streams assured to the irrigator, and the danger of flood again confronts the dwellers in the lowlands. The present warmth and sunshine will hasten the tardy growth in the fields, and show the patient animals that they have not waited in vain.

At the East, there has been great suffering and loss of life and property through the floods in the Mississippi valley, and Government rations have for a week or more been issued to the unfortunate ones. The sympathy of the people has been aroused to generous deeds.

The tide of home-seekers is again setting in strongly toward the Pacific coast, and a number of new colonies will this year be established. May they do as well as the older colonies have done—we could hardly ask more for them.

The Railroad Problem.

The discussion of evils in the existing policies and methods of railway managers is proceeding in all parts of the country, and there is a good prospect that the people will be stirred up to insist upon their rights and the enforcement of laws against the encroachment of monopolies of various kinds. There was a meeting held in Springfield, Illinois, on Thursday of last week, of which the telegraph brings the following outline of action determined upon:

The convention adopted resolutions reaffirming the railroad legislation of Illinois, that corporations are subject to the control of the Legislature; that railroad laws should be strictly enforced; that the Governor and Warehouse Commission should prosecute the almost constant violations of laws; that pass-giving is indirect bribery, and that no candidate should receive the support of the convention for any office who will take such bribe, or will not favor a law to make the offering or taking of passes bribery, and disqualify a man for office; that this convention select a State Committee of one or more from each county, to detect, report and prosecute violations of the railroad laws; that this committee be recommended to proceed against railroad companies by quo warranto; that the Railroad and Warehouse Commission will neglect its duty unless it gives a two cents per mile rate for passengers on the leading roads of the State and cut down freight rates to compare with those of other States; that the Railroad and Warehouse Commission shall prosecute abuses without formal complaints.

These items of belief and determination will, for the most part, commend themselves to unprejudiced minds, and will in the main meet the needs of the people in the premises. We are not, however, familiar with all the local bearings of the provisions, and it is possible the demands may be overdrawn.

The opening provisions are undoubtedly essential to any fair solution of the matter: That these corporations are to be held amenable to the laws of the land, and that the representatives of the people in the legislative assemblies must have the right to frame laws for the prevention of railway abuses, and that the executive machinery of the State must enforce them—all these rights must be insisted upon, else there is no telling to what hardships and wrongs the people may be brought. How it is that the men who happen to have money invested in corporations can, by the act of incorporation, free themselves from legal restraint and conduct their business contrary to the interests of the people, practicing discrimination, extortion and other wrongs in direct opposition to the well-being of the people, from whom grants, favors and concessions were made to them, is beyond our conception. But it is well settled that such powers cannot be assumed by railway managers. The movement started by the farmers of the prairie States some years ago has borne fruit. Its early efforts were made abortive by the powers against whom the contest was waged, but the end has been the recognition of popular rights in the governmental regulation of railways, by the highest courts, and it but remains to make the application of the law and secure its enforcement. The question arises as to the manner in which this can be done. Fortunately England has preceded us in experience in railway regulation, and has asserted beyond cavil the popular right therein and the practical application of it. It is nearly 30 years ago that the problem arose in England. Robert Stevenson, the son of the man who made railroads possible, thus set forth the needs of England in 1856:

What we want is a tribunal upon these subjects, competent to judge, and willing to devote its attention to railway subjects only. We do not impute to Parliament that it is dishonest, but we impute that it is incompetent. Neither its practical experience, nor its time, nor its system of procedure, is adapted for railway legislation. What we ask is knowledge. "Give us," we say, "a tribunal competent to form a sound opinion. Commit to that tribunal, with any restrictions you think necessary, the whole of the great questions appertaining to our system. Let it protect private interests apart from railways; delegate to it the power of enforcing such regulations and restrictions as may be thought needful to secure the rights of private persons, or of the public; devolve on it the duty of consolidating, if possible, the railway laws, and of making such amendments therein as the public interests and the property now depending on the system may require; give it full delegated power over us in any way you please; all we ask is that it shall be a tribunal that is impartial, and that is thoroughly informed; and, if impartiality and intelligence are secured, we do not fear for the result."

This was the announcement of a railway man of the last generation. It has been reserved for the present generation of railway men to exhibit the arrogance and ambition by which they aim to raise themselves above the laws, and to claim that the operation of the corporations is their own private business, with which no laws can meddle. But what was the result of the attempt at railway regulation in Great Britain? In the course of an able article on this subject, the Utica *Herald* says: "The English commission, which was constituted in accordance with the ideas of Robert Stevenson, and has been in active operation for ten years, has very large administrative powers, and exercises them to the incalculable benefit of internal commerce and the nation. It listens to complaints of improper discrimination in charges and defective methods of discharging service, and either dismisses them or gives the redress asked. It sees that the companies perform reasonable service under their charters, and for this purpose it has the jurisdiction of a court of equity and can compel specific performance of duties assumed in those charters. The salaries paid are high, and the commissioners are chosen from among the best men of England. The commission is accepted universally as meeting the purpose for which it was created, and it is believed to have solved the railway problem in Great Britain."

This review of what has been done in Great Britain includes exactly the reformation which is needed in this country. It is to be admitted that the problem is a difficult one, and it is beyond the time of any large body of legislators to master in the time devoted to a session, but their right to regulate must be recognized, and then the work of studying out the proper way of applying the right to the many cases which may arise, must be committed to the charge of a commission of men who are expert in law, in statistics and in the practical operation of railways. That commissions hitherto have sometimes proved the willing tools of the companies, and have sold themselves to the monopolies is unfortunate, but it is the mistake in the choice of men, not in the principle embodied in the commission. The people must labor with the problem and try and try again to secure men of wisdom and integrity to enforce their rights in the regulation of the corporations.

It is a mistake to hold that because a man is vigorously engaged in the effort to overcome railway wrongs, that he is a foe to progress in these enterprises. That the workers for justice in this respect are hated by the vain officials, who are puffed up almost to think themselves sprigs of divinity by the horde of hired sycophants who surround them, is no doubt true. They are weaker men than the men of old, and the idea of sitting upon little thrones, with their ears filled with the flattery of their hirelings, seems to blunt their perceptions of justice.

The men who are working most intelligently for the removal of railway oppressions and abuses are men of large statesmanlike views, to whom the people's rights are dear. Their aims are described by Senator Maxey, of Texas, in these moderate terms: "In regard to inter-State commerce, there is no question at all that the people of Texas look with serious apprehensions to the outcome of these syndicates, which now control in a very large degree the commerce of that State. There is not in the State, so far as I know, or believe, any disposition whatever upon the part of any intelligent man to adopt repressive legislation. On the contrary, the feeling there is to invite capital. We want to adopt a just and honorable system of laws, fair to the people and fair to the roads. The great point to guard against in matters of this kind is extreme measures. Unreasoning men, looking alone to what they regard as exhorbitant freight and travel charges, are disposed to adopt repressive measures, repressing the building of roads—which in my judgment would be exceedingly unwise—while, on the other hand, those who see and feel the great importance of the building of railroads to the development of the country, are too much inclined to be unduly liberal in the terms of the charters. Between these two points the true friends of the State and of healthy development seek to legislate, and that legislation is to the end of just and fair enactments, granting reasonable, fair terms to the railroads, and seeking only like fair dealing for themselves and the people. So, in my judgment, the real sentiment of the State is in favor of that character of inter-State commerce legislation by Congress, within the limits of its constitutional power, which, while perfectly just to the railroad, will be perfectly just to the people, and like legislation will be asked of our State Legislature." Too many forget that farmers and business men who are demanding railroad legislation, are *not* opposed to railroads, as such, are not opposed to building new roads, developing the country, etc.; but they *are* opposed to discriminations, pooling, and all schemes creating special classes, building up or breaking down individuals and localities.

AID FOR BOYS AND GIRLS.—The Boys' and Girls' Aid Society is one of the associations in our midst which is deserving of hearty support, as of a practical character, doing good in a branch too apt to be overlooked. The institution became embarrassed with a debt which a thoughtful and charitable lady of this city, on being informed of the amount, paid off. At a meeting of the society the following resolution was adopted: *Resolved*, That the Secretary is hereby instructed to convey to Mrs. Charles Crocker the thanks of the Trustees of the Boys' and Girls' Aid Society for the liberal gift of $1,352.55, contributed by her to friends of the society. Coming at the time when it did it has proved especially encouraging. By means of it all debts of the society have been paid, and the Trustees have been enabled to enter upon the new quarter with confidence that their efforts in behalf of neglected children will meet with support from the public in future.

BERKSHIRE BREEDERS' SOCIETY.—A reader of the PRESS and a breeder of Berkshires, Mr. Tyler Beach, of San Jose, called upon us the other day to suggest the advisability of urging an association to be formed by the Berkshire breeders of the State or of the Pacific Coast. Mr. Beach thinks that it would be much better to have a local society, and to provide for the record of animals here, instead of sending to the Eastern societies. It seems to us it would be a very profitable thing for Berkshire men to hold a meeting for the consideration of all things effecting their interests, and to promote the porcine interests of the State. All breeders who feel an interest in the proposed movement are invited to correspond with Mr. Tyler Beach, San Jose, Cal., and if sufficient interest is awakened, a time and place of meeting will be determined upon.

The Grain Gambling Movement.

The "call" feature of the transactions of the Produce Exchange is progressing satisfactorily, and transactions of greater or less amounts are recorded. Another organization, with an unsavory repute, in that it has lived for the purpose of stock gambling, now proposes to embark in the "call" business also. So far as we can see, it merely proposes to substitute wheat, barley, etc., for the names of different stocks, and then proceed to sell on margins and the like, the idea being a gamble in grain in which there is no expectation of handling the grain itself. This new organization has issued an address to the people, in which it sets forth its aims and its public services, as follows:

One of its main features will be the dealing in contracts for future delivery, as they do in Chicago and New York. The advantages of this system are great and obvious. By the multiplication of transactions it makes a ready and constant market. It brings in the speculator, who creates both a demand and a supply, and in whose presence stagnation becomes impossible. The California farmer can recall the time when there was virtually but one buyer of wheat in this market, and when a single man fixed the price for the whole State. And even now the number of buyers is astonishingly limited. The Grain Exchange will put an end to all that. It will build up a market at San Francisco similar to that enjoyed by the farmers of Illinois at Chicago. The advantages to the producer of an open, ready and active market at his very door need no demonstration.

This sounds very well, and if it results in the free, open market—in which there are hosts of buyers bidding for the grain, and ready to take it and pay the gold for it—then will there surely be a grand departure from the old closed and monopolized market. But if the gambling operations inflate or depress the price below the proper level—as they sometimes do—then there is introduced a fictitious element which is apt to upset legitimate trading.

But the address of the new "call" establishment has a special care for the farmers and does not hesitate to say so. We read:

The special advantages to the farmer of the system of contracts for future delivery are also very great. If he would like to hold his crop for an advance, but is compelled by his necessities to realize at once, he can sell for cash and buy for delivery at such time as he expects the advance. These instances could be multiplied indefinitely, but one is enough to serve as an illustration, and the others will suggest themselves without the need of mention here. To the shipper, as well, who has vessels chartered to arrive, it will be a great benefit to be enabled to secure cargoes against just when he needs them by contracts for future delivery.

This is a most sugary invitation for the farmer to step in and sell his grain and buy it back again for future delivery. That is to give the broker two chances for commissions instead of one; and then when the farmer gets in thus deep in the enchantments of gambling, he will keep it up, until the farm goes to pay his losses.

It is difficult to tell just what will be the effect of these new selling arrangements upon the wheat market. The general standing of this method is, however, pretty well defined in its legal aspects, as the following will show. A District Judge of Illinois lately said: "The thing which we know as a corner in the market may be briefly described as a process of driving unsuspecting dealers in grain, stock and the like into a corral and relieving them of their purses. The essence of the offense consists in the party securing a contract for the future of some commodity at his option, and then by engrossing the stock of such commodity in the market, making it impossible for the other party to complete his contract, except by purchasing of his adversary at his own price, or paying in cash the difference fixed by such adversary. As was said of another great wrong, if this is not wrong, then nothing is wrong."

The standing of an obligation created in this style of business has just been defined by a court. A suit involving the question of liability for grain gambling debts was decided in the Circuit Court of Detroit last week. The facts showed that a note for $4,000 had been given in the settlement of margins in several wheat transactions. This note had been transferred to a bank and paid just before maturing by the plaintiff in this case, who was father of one of the partners of the firm to whom the note was originally given. The Supreme Court of Michigan has decided that where a contract is made between parties based on the rise and fall of a given commodity, without any intention to deliver the article, and is mutually so understood, then the law considers it a gambling contract, and will not aid the parties to enforce it. Under the state of facts presented, the Circuit Judge charged that, it being understood that the firm to whom the note was made originally payable transferred it to the bank for value, without notice, before maturity, the bank then became the *bona fide* holder, and received it free from all taint. The Judge further charged that if the jury believed that the plaintiff purchased this note from the bank, they must find a verdict for him, even though he knew that the consideration was illegal. The jury nevertheless returned a verdict for the defendant. In answer to special questions submitted to them, the jury found that the plaintiff in this case knew that the note was given for an illegal consideration when he took it, and that he took up and paid the note a few days before it fell due, and they were not satisfied that he was the owner of the note.

This does not seem to be a very fine sort of business to promote or engage in. It is, however, to be tried here, and there is a possibility that, with all its evils, it may make a fairer wheat market than we have had before—it could hardly make it worse for the grower than it has been.

Arctic Geography.

The events connected with the cruise of the *Jeannette* have, within the past year or two, attracted more attention to the question of Arctic research than ever before. In this country, particularly, greater interest has been manifested in the geographical problems sought to be solved than was supposed would be the case. While the unfortunate ending of the *Jeannette* expedition has caused many to think that such expeditions are useless, yet all feel an interest in Arctic matters not formerly so noticeable.

The cruise of the revenue cutter *Corwin*, Capt. C. L. Hooper, in the Arctic ocean, to which we have before referred in these columns, developed some facts of more than passing moment. From Capt. Hooper's report we take the following description of Herald island, with a sketch by Dr. I. C. Rosse, surgeon of the *Corwin:*

On the morning of the 20th our reckoning placed us to the northward and eastward of Herald island. We stood in to the ice, and, after following its edge to the southward for a few miles, made the land through a break in the fog, bearing northwest (magnetic), distant about ten miles. We hauled up for it and entered the ice, which was quite open on the edge, and steamed in about six miles, where we were stopped by a solid barrier of unbroken ice extending nearly north and south, and from 12 to 40 ft. in hight.

After examining the island (which was only three or four miles distant) very carefully with the glass, and assuring ourselves of the impossibility of there being any human inhabitants, we worked our way back to clear water.

The sides of this island are perpendicular cliffs 800 ft. high, and its top, which was then covered with clouds, is said to be about 1,400 ft. in hight. Capt. Kellett, R. N., who discovered it, and who succeeded in getting a foothold on a projecting rock, says:

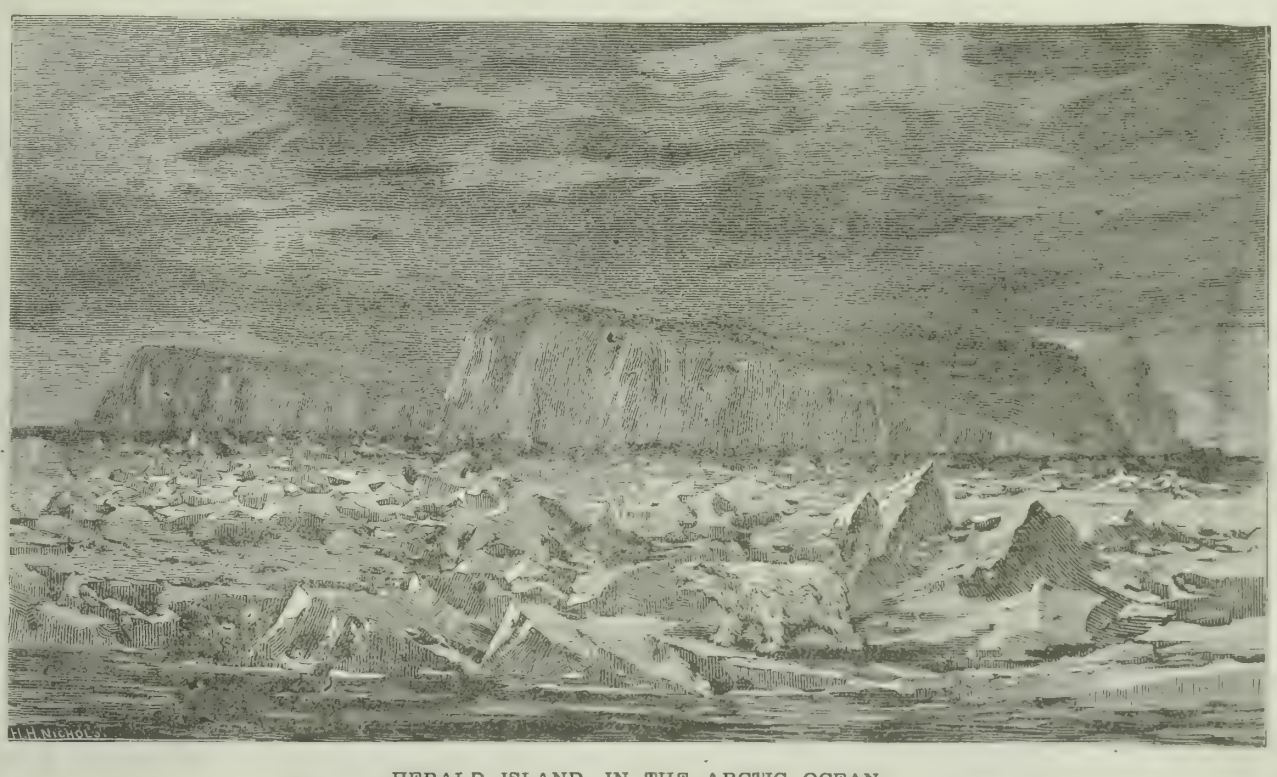
"The island on which I landed is 4½ miles in extent, east and west, and about 2½ miles north and south, in the shape of a triangle, the western end being its apex. It is almost inaccessible on all sides, and a solid mass of granite. * * * The extent we had to walk over was not more than 30 ft."

The icy barrier which we found surrounding the island had the appearance of being unbroken, and I am convinced that it was not of a recent formation. I have questioned the whalers closely in regard to it, and find that none of them went west of Herald island last year. I am of the opinion that the ice did not leave it, and that it is no unusual occurrence for the ice to remain two and even three years without leaving the island free. I believe, moreover, that the ice rarely breaks up between Herald island and Wrangel's sound.

After getting clear of the ice we steered to the southeast, and in the afternoon fell in with and boarded the bark *Fleetwing*, of New Bedford, working up toward the island.

While cruising in this vicinity we hauled the dredge several times; but, as on previous occasions, found the bottom very barren of life, a few minute radiates and mollusks and some pieces of broken shells being the only things brought up. The bottom consisted of blue mud or pebbles, and particles of broken shells, according to location. The soundings were found to agree very closely with those given on the chart.

While in the vicinity of Herald island, a small land bird resembling a snipe flew on board. It was caught and caged, but died in a few hours, and was put into alcohol for the Smithsonian Institution.



HERALD ISLAND, IN THE ARCTIC OCEAN.

To Oil a Mill Spindle.—Somebody says: The best way to oil a mill spindle is to guide the oil through a small gas pipe half an inch in diameter, from the outside of the curb down below the hurst frame to the bottom of the stone, and thence with an elbow to the bush, upward to a level with the top of the bush. This will thoroughly oil the spindle, and is not a very expensive arrangement.

Sharpening Mill Picks.—Emery wheels have been quite extensively used for sharpening millpicks. The best size of wheel for this purpose is said to be eight inches in diameter by one and one-half inches thick. A machine for the purpose of sharpening mill picks, with wheel complete, is in the market and can be purchased for about $30.

Queries and Replies.

Silos and Ensilage.

Editors Press:—To owners of live stock in California, and especially to sheep raisers, the proper understanding of the saving or preparing of ensilage is more important than anything else, yet scarcely one knows anything of it. You will confer a great favor upon hundreds of your subscribers by publishing such information as you may have about the construction of silos, and the best methods of storing and preserving ensilage. Every year there is a period of from one to three months when for want of green feed thousands of sheep and lambs starve to death. Will you enlighten us upon the subject, and merit the thanks of all those in the State engaged in the business of sheep and wool growing.—Reader, San Francisco.

Our correspondent has not read his paper carefully or he would know that we have already given most full and explicit instructions on the building of silos of different kinds, with engravings to aid in the descriptions. Perhaps others have just had their interest excited in ensilage and would like to look up the subject again. We therefore append a reference to the silo and ensilage question as set forth in our back numbers. In the Rural of Nov. 17th and Nov. 24th, 1877, we had a long description of ensilage as practiced in France. March 9th and March 16th, 1878, we had another review of the subject, with illustrations of the construction of pits, etc. Nov. 17th, 1880, gives an account of the opening of the first California silo, at Hollister. Dec. 18th, 1880, has an illustrated description of French silos of Goffart, with notes on the building of silos with concrete, masonry and simple earthen silos. Jan. 9th, 1881, has an engraving of a machine for cutting ensilage, also notes on the use of different plants in silos. Jan. 15th, 1881, has detailed descriptions of New York silos and experience with feeding ensilage to dairy cows. Feb. 12th and March 12th and April 30th, 1881, have other articles on the feeding of ensilage. The Rural of Feb. 18th, 1882, contains a report of an ensilage congress, held recently in New York city, and is full of practical notes on the construction of silos. The articles we have mentioned are only the leading ones which have been presented; other shorter notes on the subject have been given in abundance. Our correspondent will find in the articles cited all the information necessary to go on with his experiments.

Ostrich Farming.

Editors Press:—I have been watching the columns of your paper of late to catch something of the ostrich business. Please state the address of any firm or individual engaged in the enterprise in the State. Any information on the industry will be gladly welcomed.—J. Mat. Stephens, Valley View, Cal.

We have heard much ostrich talk and have heard also of birds being on the way for this coast, but we know of no attempt at ostrich farming actually begun. If any reader knows more than this let him speak.

Information on Carp Culture.

Editors Press:—A friend has requested me to ask where a good practical work on carp fish culture can be had, as he has a brook supposed to be suitable for their culture. Any information thankfully received.—Mrs. J. M. K. Anderson, Shasta Co., Cal.

We know of none. The reports of the U. S. Fish Commissioners contain articles from German authorities. We have already transferred these to the columns of the Press, with illustrations, showing construction of ponds, etc. We have also had series of articles from California carp growers, and many single letters giving individual experiences. A good letter of this kind may be found in this issue. The files of the Rural for the last three years contain the best information we know of on this subject. If our correspondent preserves her Rurals she can fully supply the needs of her friend by reference to them.

Disinfecting Oranges.

Editors Press:—The last part of a letter by I. H Leihy, of Tustin, which was published in your edition of March 11th, requires some correction. After proclaiming the law passed by the last Legislature for the protection of our fruit interests on this coast to be an "absurd farce," he gives an instance where the proper obedience to the law in disinfecting oranges with whale-oil soap and sulphur, resulted in the fruit being dumped into the bay. That was owing to the quality of the fruit, and not to its treatment for purposes of disinfection, the following statement will show. About February 11th I gave certificates, after disinfection with whale-oil soap and sulphur, for 87 boxes of oranges, the mixture used being of full strength. The oranges were sent to two well-known commission merchants in San Francisco, who promptly made returns of $196 net, many of the boxes selling at $4 and $4.50 each, and averaging above $2.75 each. Other shipments by parties in this part have been equally satisfactory. One grower has even acknowledged that he considers the disinfection of his fruit has given him an increased price of at least $1 a box. The fruit of which your correspondent speaks must have been poor indeed, if after having been subjected to the cleansing operation of whale oil soap, it still had to be thrown away as unsalable. "The already burdened fruit grower" can well afford, out of the prices named, the inspector's fee, which cannot be more than $1 and is almost always much less.—Frederick Stephens, Local Inspector, Oge and Bond tract, near Orange, Cal.

Mr. Stephens gave us the date and names of several shipments of washed fruit, and we find that they were sold in this city at the prices which he claims.

Mangels for Moist Land.

Editors Press:—Possibly your correspondent, C., at Yountville, might do worse than put mangel wurtzel seed into his "land too moist for wheat," and put the crop into hogs. Probably W. C. Damon rather overstated their value in last week's issue. One pound of hay is usually reckoned the equivalent of four pounds of roots or green feed. The yield per acre on suitable land is immense. On such land, with a long season's growth, they may easily average 20 lbs. each. Supposing then one beet per superficial yard or, roughly, 5,000 per acre, we have 50 tons per acre, or the equivalent of 12½ tons of hay. Then, allowing 50 lbs. of beet to produce 1 lb. of hog, we have one ton of hog per acre, or a value of from $70 to $140 per acre. This is presuming of course that all goes well, a thing a farmer had much better not presume.

I prefer feeding beets in conjunction with barley and consider them most valuable. Squashes I feed to hogs from October till January; frost usually rots a great many by that time unless they are housed, and handling bulky crops is expensive. Hard-shell squashes fed off the fields where they were grown economise labor, breaking with an ax, as wanted, being the sole trouble; the manure also gets evenly distributed without hauling.

Beets stand through winter and come in quite handy when squashes are gone. Hogs grow rapidly on them if a little barley is also given. Butter from beets is very hard, very white and long in churning.

Cows should not be overfed with beets alone, especially in cold weather. Paralysis is apt to ensue, or at least severe cramps, and no proportionate flow of milk results. The modicum you mention of 80 lbs. daily, in two feeds, with good sweet hay, is ample. Hogs can have all they will eat, but in cold rainy weather they must have grain in the morning. Many persons seem to think the hog a very hardy animal. My experience tells me that disease is easily engendered and rapidly communicated in a herd of swine. Ample shelter and careful feeding are the price of success.—Edward Berwick, Carmel Valley.

The levees between Vicksburg and Helena are covered with stock in a starving condition. Several rafts, with whole families aboard, have been seen floating down stream.

The Dust of Cities.

At a meeting of the San Francisco Microscopical Society this week, Mr. H. G. Hanks, State Mineralogist, read the following paper:

In passing through Montgomery avenue, on my way home, I have often noticed quantities of dusty matter drifted into winrows by the wind. In boisterous afternoons it is blown about, changing its position continuously. In rainy days it assumes the form of a dark-colored mud. Thinking it might contain the organic germs claimed by Tyndall to be inherent in dust, and particularly so in the dust of cities, I had the curiosity to collect a portion, which I submitted to chemical and microscopical examination with the following result:

Placed on the stage of the microscope under a low power, as taken from the street, it presents a disgusting appearance. The most noticeable constituents, as observed, were vegetable fiber, principally horse manure, and the decaying debris of Oregon pine and redwood planking, mixed with bits of coke and coal, broken glass, horse hairs, quart sand, some blue particles, the nature of which could not be determined, and a dark-colored, finely-divided, half-dried mud, which was neither pleasant to the sense of sight or smell.

Burned in a platinum crucible the thoroughly mixed mass gave off a little water, a pale yellow flame and a disagreeable odor. On continuing the heat to incineration there remained in the crucible a ferruginous red-colored ash. The loss was 26% which was mostly organic matter, the sample having been previously dried in a steam bath. The ash was boiled in hydrochloric acid, which dissolved much iron. The gray residue was examined under the microscope with a two-thirds objective, and was found to consist almost wholly of angular quartz fragments, the result, probably, of crushed quartz sand.

A portion of the original substance was then treated with distilled water, which was previously boiled to destroy any organic forms that might be contained in it. Immediately on the water cooling, it was poured over the dust in a clean bottle, which was set aside for microscopic examination. The solution, or rather muddy mixture, was inexpressibly filthy and vile, but on examination microscopically, no living forms were observed. In six hours it was again examined and found to be alive with monads; in twenty-four hours, and again in forty-eight hours, a high power showed the liquid to be teeming with living forms, both animal and vegetable, being an interesting study to the microscopist. I noticed one animalcule in particular which I did not find figured in the books, and which I have never observed before. It somewhat resembles the vibri ones, but it is more sluggish in its movements. When highly magnified it resembles an earth worm. It moves very slowly, without turning, and I could not decide at which end the head was, as it moved with equal facility in either direction. Great numbers of these forms could be seen in the field of the instrument at the same time, swimming with slow motion from side to side.

It is not pleasant to think that great quantities of this vile substance—useful only as a fertilizer—lie in our principal streets, and that it is blown about to be inhaled by ourselves and children. It finds its way into our houses, and when the carpet is swept or our clothes cleaned it rises in dusty particles to fill our lungs, and perhaps to deposit the germs of obscure diseases. It gets into the tanks on the house-tops, and we drink it in our tea and eat it in our food. May it not be that certain diseases which are charged to sewer gas have their origin in this cause?

Corn (Maize) Grinding.—There is probably no better method of reducing (grinding) corn than with a pair of ordinary millstones. The dress usually adopted in the West where a 4-foot stone is used has 12 leading furrows with 4-inch draft; 12 second furrows, laid off from a circle 12 inches in diameter, and 12 short furrows laid off from a circle 24 inches in diameter. The furrows are deep at the back, feathering out to the front, and leaving a light catch at the edge of the land. The lands are cut at an angle of 45 degrees with the draft and about 1-16 of an inch apart.

Cleaning Wheat.—Shears, a student of modern milling, concludes that wheat should not be handled too tenderly in cleaning. "In twelve years experience," he says, "I have never seen wheat overcleaned. No smutter using steel or chilled iron surfaces has ever scoured wheat too much, if unbroken. The brush is a great help, but it is not intended to take the place of the smutter."

THE CALIFORNIA VICTOR MOWER.

The Only Mowing Machine Made on the Coast.

SIMPLICITY AND GREAT STRENGTH COMBINED.

We ask those wishing to purchase machines this season to examine the Victor, as we believe it superior to any machine made.

Superior, because it has compound draft attachment which divides the draft of the team between the main driving power and finger-bar; it lessens the draft of the finger-bar upon the ground, giving increased power to the cutting apparatus.

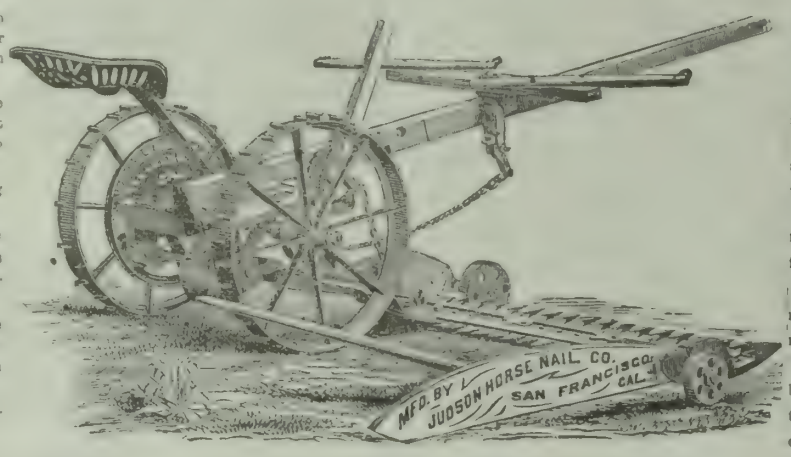
It has a very simple gearing, placed in such a manner as to be entirely out of the way of the driver, and enabling him to see at a glance all of its working parts; the gears are enclosed, so as to exclude dirt.

The main frame and gearing are so balanced on the driving wheels that there is no side draft or weight upon the horses.

The lifting lever is within easy reach of the driver; by this the finger-bar can be raised for passing stones, stumps and trees without stopping the cutting apparatus, or cramping the pitman or knife.

To regulate the hight of cut and lessen the friction upon the ground there is a small wheel, placed at each end of the finger-bar, arranged so as to adjust this bar from one to six inches in hight.

This machine will follow the undulations of the ground, passing bogs and stones without injury.



The adjustable seat is so arranged that the driver can keep the machine in proper balance at all times.

The finger-bar can be raised to a perpendicular position for moving from one field to another, the driver not leaving his seat.

The pitman and crank head are protected by the main shoe, so as to fully shield it from cut grass, stones and other obstructions.

The main shoe and finger-bar are connected to the vibrating frame, so as to form an independent duplex joint; this is a novel feature in this machine and is used in no other.

By attaching the vibrating frame with main frame below the main axle, so as to get a direct draft on the finger-bar, which makes a perfect floating cutting apparatus.

The hinge connection is of a very strong nature, braced in its bearings so that the finger-bar is *always* at right angles with the gearing. This is a source of great annoyance to the owners of other machines.

REPAIRS ALWAYS IN STOCK.

Two knives, two guards, screw, wrench and oil-can sent with each machine.

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Without doubt the best Rakes made.

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The best improved and most practicable Header in the market.

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The only really successful Straw-burning Engines.

"GOLD MEDAL" SEPARATORS

Saves grain where other Threshers waste, and will do more work in a given time than any other Thresher.

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The best in the world.

Also a long list of other equally good implements for various purposes.

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LIGHTEST

AND MOST

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MADE.

Its average durability has been from two to three times greater than other machines, and the cost of keeping it in repair less than one-half. We thus give you a machine worth two or three times as much as any other, and, having

REDUCED THE PRICE.

It is now placed within the reach of every farmer. Farmers buying the "BUCKEYE" get the best machine in the market.

The "BUCKEYE" MOWER is the Perfection of Mowing Machines!

From the date of its first introduction into California the "BUCKEYE" has always taken the lead, its popularity having increased with each succeeding year, as is shown by its steadily increasing sales which are far in excess of all others. By the greatest care in the details of manufacturing and the adding of improvements the

"BUCKEYE" HAS BEEN KEPT AT THE HEAD!!

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PISCICULTURE.

Carp Experience in Inyo County.

EDITORS PRESS:—Having been considerably benefited by your many valuable hints and suggestions on various topics, particularly on carp culture, it is but fair to slightly retaliate by presenting our experiences for publication in the RURAL PRESS. Time and again during the past two or three years has the PRESS favored us with carp literature—its history, pond construction, culture, and also the experience of practical carp raisers chronicled—all of which have been perused with avidity. We hard-headed rustics were strongly urged to try fish farming, utilize the vast amount of waste water, and have it, like the soil, produce valuable food, involving but little labor and expense. Induced by the RURAL'S presentation of facts and figures, quite a number on this coast have of late engaged in this comparatively new industry.

Among others is the undersigned, and in compliance with requests for more carp experience for publication, I will submit mine: About 13 months ago, being extremely affected with fish on the brain, I struck out for carp—went to San Bernardino and bought 400 young fish, from three to five inches long, of Mr. J. H. Petit. Having about 400 miles, most of it over a sandy desert, to transport them by wagon, I thought if one-fourth of the lot would survive the rough trip, encountering some bad water, I should be fortunate. However, I did better, and arrived home with 280, although 30 died subsequently, which left me 250 healthy young carp for a starter. These were placed in two ponds, both covering about an acre. The ponds were rich in food, having muddy and grassy bottoms. To make it doubly sure of their having sufficient food, I fed them (probably unnecessarily) three times a week during summer, with a bucketful each time of moistened bran and shorts, and sometimes mashed potatoes and various scraps, all well mixed, made into balls and thrown promiscuously into the water. Nearly two months ago the ponds were drained and the carp were found to have attained a length of 15 to 18 inches. Thay had also increased wonderfully—thousands of young fish ranging from one to eight inches in length; which proves conclusively that carp spawn early and late in the season. It also proves that, in good ponds, they spawn before they are a year old. They possess voracious appetites—will eat almost anything a hog or horse will—which, coupled with the fact that they do not devour their young, accounts, probably, for their rapid growth and great fecundity.

Having done so well in this water, I increased my ponds, having now eight, each pond stocked with hundreds of carp. Have also disposed of several hundreds to different parties for stocking ponds—and all accomplished within one year.

Fish farming will surely pay. In the course of two or three years more fresh fish will constitute a considerable portion of our diet in this interior region, where, at present, the finny tribes are scarce.

Trout vs Carp.

Some people may ask "Why not raise trout in preference to carp?" It would be as reasonable to ask the farmer why not raise the wild mountain deer rather than hogs. Carp will thrive splendidly in water where trout would soon die. Give the speckled beauty his mountain stream, and, if you are imbued with the gentle spirit of old Isaak, you may go angling once or twice a year, along sedgy banks and rocky shores, with varied results—as "luck" will have it. But the carp will be content and grow fat in any pond, bog or running brook, near your house, thus being a convenient source of profit and pleasure by supplying a large amount of delicious food. My ponds occupy springy, marshy ground from which nothing was ever realized; but now having converted this swamp into fish ponds, it has become the most valuable and attractive portion of the farm—will soon become "redolent of morning fries and evening roasts."

The Carp Well Formed and Palatable.

The carp is a well-formed fish, thick body, with few bones. Prof. Baird, U. S. Fish Commissioner, probably the highest authority on fish in this country, says: "The German carp bears about the same relation to the ordinary English carp that a North Carolina 'pine-woods' pig does to one of the Berkshire breed. In Germany the carp is esteemed as highly as the trout, and sells for the same price in the market."

Dr. Kessel, an eminent German fish culturist, asserts that, in the principal cities of Europe, the carp, in spite of an abundant supply of salt-water and fresh-water fish, is ever preferred to these; and, with the exception of trout and salmon, commands a price three times as high as that of all the rest. In conclusion, respecting their table qualities, allow me to quote the remarks of the editor of this paper, after munching an experimental mess. Says he: "We found ample reason in our taste to approve the verdict which is generally given by authorities on the German carp, and that is, that the fish is of especial and distinctive merit for food. The flesh is exceedingly sweet and rich, and is invested with a flavor very enjoyable and quite characteristic of the fish. We have given them a fair test, and find them most excellent breakfast timber."

Other Fish.

Many other fish, besides carp, are suitable for cultivation in private waters—eels, catfish, bass, etc., would do well. Fish culture is yet only in its infancy. The possibilities of fish farming are incredible; even the inter-crossing of distinct species has already been accomplished. The *Scientific American* tells us that a few years ago the eggs of a shad were placed in a pan of fresh water which could not have contained any milt of the male shad. This done, the eggs were mixed with the milt of the striped bass, and they were immediately fertilized. They were then placed in the shad-hatching boxes, and fully 10,000 young cross-breeds were the result.

Perfect success has followed the crossing of the California salmon and the common brook trout. The Hon. R. B. Rosevelt, Fish Commissioner of New York, says: We have crossed fifteen or twenty different breeds, and all successfully, and I can assure you that the result is a strong argument in favor of Darwinism, for it shows that all fish may possibly have grown out of one or two varieties. This would account for what is called the "land-locked salmon" which is found in lakes having no communication with the sea. The object of this crossing and breeding is to improve the fish, just as they cross neat cattle and horses, and even fruits and flowers. The result will be to make fish-food plenty, and to add a large number of "queer fish" to the number already in existence.

T. E. JONES.

Round Valley, Inyo Co., Cal.

AGRICULTURAL ENGINEER.

Farm Engineering.

[Written for the RURAL PRESS by ELDRO.]

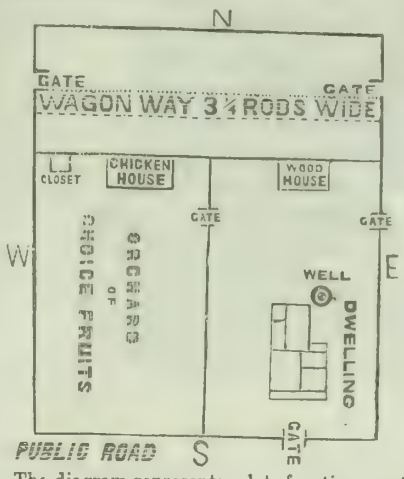
Probably no topic is subject to so many diverse opinions in the whole line of farm improvements as that of building, or, more properly, the arrangement of farm buildings. In my first paper I hinted at the grotesque and unseemly appearance of many farms, due entirely to the want of thought in arranging the grounds immediately connected with the "home" part of the farm; that is, the house and grounds where the family expect to spend their days, or very many of them, at least. "Camping out" is very good in its way, and for a short time only; but, like Mrs. Simkins' boarder who didn't mind eating goose for forty or fifty meals, but didn't like it for a steady diet, one soon tires of camp life, and longs for a home. By this term do not understand me to mean an elegant house, with fine furniture, expensive paintings, library, etc., such as might grace a prince's palace; but I would have everything arranged for convenience and comfort, and all will grant that it is just as easy and as cheap—often cheaper—to work to a well-defined plan as to "throw things together" without regard to consequences.

Now let us build a home—a pioneer home—with the full understanding that our means are limited to the amount required to "settle" 160 acres of wild land. First, it is necessary to know every foot of the ground. Select your building site on high ground, if there is any suspicion of miasma on the lowlands, keeping in view the matter of convenience to the public road, facility of obtaining water, if nature has not provided springs, and having regard to quality of soil for garden and orchard. Having selected the spot you propose to dedicate to the purpose of making a home, lay off a square conforming to the direction of the lines run by the surveyor, say about 12¾x12¾ rods each way. This spot of ground will contain slightly more than one acre. You need not fence it now, but it is best to make a diagram of it, or better yet, "survey the lines," and then proceed to build your dwelling, which, when finished, will be in the centre of one-half of the tract, dividing the lot from north to south or from east to west, according to the direction you wish your house to face. Don't build a "cabin," but proceed at once to build a part of the house in which you expect to live. If you want a kitchen 10x12 feet and a dining-room 12x14, put up a building as good as you can afford right where you want it 12x24, meantime keeping the plan of the main building in full view, so that your original building will not have to be removed—thus adding to the expenses of further improvements. The distance from the front door of the house to the front gate is a matter of taste and should be determined by the amount of space to be allotted to flowers and shrubs. Plant nothing where it will be in the way when you build your new house.

You are now in the "camping-out" period of settlement, and in order to have more room it might not be amiss to add a small porch to one side of your house and "side up" a portion of it for convenience against the time when you shall have a better home.

Right here I should state the dimensions of the main building, which may be modified, of course, according to the wants of those who are to occupy it. Your kitchen and dining room with porch on one side, which may be made for the present to do service as parlor, bed-room, dining-room, etc., having been built with a special view to the addition of a larger house, we suggest that the main building be 17x26 feet inside measurement, and at least fifteen feet high to top of walls. This building should have a "hipped" roof, as should also the rear end of the kitchen and the porch, in order to look neat and cosy, and at the same time be "down out of the wind." This main building should stand with the side to the road, and the distance from the ends of the house to the fence on each side of the lot should be equal, the distance from the house to the gate being, as before remarked, a matter of taste.

The poultry yard should be located in the rear portion of the adjoining half of the lot, or rather, toward the rear of the lot, say on a line with the wood-house. Both of these buildings should be neatly and substantially built, and when the busy season is over, whitewashed or painted. A better understanding of my meaning may be obtained from an inspection of the following diagram:



The diagram represents a lot fronting south toward the public highway. The house fronts south and east, is divided on the lower floor into 4 rooms, (the two in the main building may be duplicated on the second floor), the largest being 14x17 ft., the next largest in the main building being 12x12, with stairway 5x12 on north side of main building. The well is near the end of the porch, the wood-house at the extreme rear of the space alloted to the dwelling. The chicken-house occupies the first place in the other half of the lot; beyond that is the water-closet. In front of the chicken-house is a space for four rows of trees 21 ft. apart, leaving about 10½ ft. between the fences and the trees. Plant no small fruit here, except cherries; if you do, you will have to move your hen-house some day.

For shade around the house, set out rapid-growing trees, requiring little or no irrigation. The subject of tree-planting is treated at length by Mr. Chas. H. Shinn, in his "Pacific Rural Hand-book," and I leave this subject to him and to the reader's taste; but for the first planting (for shade exclusively) I prefer a few ordinary locust-trees where they will do the most good, and at the same time not interfere with future work in beautifying the grounds. Order should be strictly observed in this initial work, as in everything else. Don't plant too close, nor make the shade too dense.

The construction and arrangement of other necessary farm buildings I leave for a future paper, in which I shall endeavor to give good reasons for adopting the method suggested, at least for the relative positions of buildings to each other. Already we have the dwelling and its belongings, with a small orchard, occupying slightly more than an acre of ground, including the wagon-way, by which fuel may be brought and articles to be sold or removed may be easily placed on the wagon for transportation to market or elsewhere. Having provided for our own comfort, it shall be our next task to care for the domestic animals and the storage of the products of the farm.

A NEW MACHINE WANTED.—A Louisiana sugar planter writes to the *American Manufacturer* that there is great need in the South for a machine that will crush or grind unshucked ears of corn, as they come from the field, into a coarse meal of corn, cob and husks, and do it rapidly. He is aware that there is a machine that will crush corn in the ear thoroughly, one ear at a time; what he wants is something that will receive a bushel of ears or nubbins at once, and crush, say, 20 bushels an hour. One of the great troubles of sugar planters, he says, is the preparation of food for their mules. To crush corn in the ear with existing appliances, the corn has to be husked, costing much labor, and there is apt to be a great loss of small ears. "A fortune awaits the inventor of a machine to crush by the wholesale corn, cob and shucks together." The problem does not seem to be a difficult one, and some of our inventive readers may find it profitable to undertake the solution.

TIN PLATE MANUFACTURE.—The term "charcoal" on tin plates is a fraud and always was. None but coke irons have ever been used in the manufacture of tin plate. In fact the most ductile irons made in England or on the Continent of Europe are smelted with coke. This country produces brands of iron better adapted to making tin than any in the world. Our best West Tennessee and Alabama irons are as much superior to British brands for tin plate as they are for boiler iron or car wheels.—*Chattanooga Tradesman.*

THE VINEYARD.

The Hermitage—Its Famous Vineyards and Vines.

EDITORS PRESS:—Several hundred years ago, a few monks who had been missionaries in Persia, on their return to France, brought away with them from Shiraz a handful of vine cuttings, which they planted at their humble retreat in an almost wild part of France, and which, from its loneliness, they called the "Hermitage." It was a howling wilderness then, and would be but little better to-day were it not for the renowned vineyards called the Hermitage. Granite and granitic gravel yield but scanty pasturage at best, and next to nothing in cereals. There, however, on the granite hill which rises to an elevation of 500 or 600 ft., immediately behind the town of Tain, on the left bank of the Rhone and 12 miles from Valence, are the famous vineyards of the Hermitage. A ravine divides the southern bank into two nearly equal portions. In the western half, where the monks built their hermitage, the moldering ruins of which may yet be seen, the rock is more compact and barren, and exhibits a larger amount of feldspar than on the eastern side, which is comparatively loose and friable. In the upper and middle regions the soil consists almost entirely of the moldering granite; but near the base there is an admixture of pebbles, and the lowest part is composed of fluviatile sand. In one or two places small veins of limestone may be observed. Nothing can be finer than the exposure, as the whole of the slope faces the south, and, with the exception of part of the eastern slope, enjoys the warm sunshine nearly the whole day. The inclination, however, is so steep that it has been found necessary to form portions of it into terraces.

The west side, which is most rocky, gives the strongest wines; the east, and especially that portion of it where the pebbles appear, the most delicate. The plants cultivated for red wine are the large and small Shiraz; and for white, Rousanne and Marsanne. They grow without stakes and are pruned about 18 inches from the ground. All the grapes are comparatively small. Since the middle of the 17th century the fame of the wines of the Hermitage and those of Cote Rotie has been established, and at present are universally acknowledged to rank among the best wines of France; and by many connoisseurs Hermitage is preferred above all other growths.

The Shiraz or Hermitage vine—for they are identical—is cultivated very extensively in nearly all the Australian vineyards, and yields a wine which, for body, color, and all other good vinous properties, has few superiors. One remarkable circumstance about this kind is that the plant, though cultivated for several hundred years in France, appears not to have undergone any change of habit or product. The Australian cuttings were obtained from the old Hermitage vineyard, in the first instance; but a good many years ago some enterprising viticulturists obtained plants from Shiraz (Persia) direct, and when they came into bearing no difference could be discovered either in habit of growth or bearing, or the wine, so that the wine is sold indifferently under either name.

The climate best suited to it in this State would be, judging from Australian experience, from Napa valley, southward; and probably best of all about Merced. It has been mentioned as having comparatively small berries, but we could not find fault with it, for the bunches were generally numerous and well filled.

The Rousanne and Marsanne, mentioned above, are believed to be White Shiraz. They are a strong, vigorous-growing kind, good bearers, and have produced some of the best white wine of New South Wales. When the Hermitage is made white, as it often is, its characteristics closely resemble those of the above-mentioned kinds. None of our white wines are so easily managed as those; they resist acetic changes and come early to the market.

If any viticulturist would wish to import the varieties of vines not already in the State, but which have been tried and found to be good and profitable, I shall have pleasure in rendering him any help in my power, either as to the names of kinds or the countries whence they are to be obtained. The Australian vintage is now half over, and pruning will proceed in June, so there is no time to be lost if cuttings are to be secured.

JOHN I. BLEASDALE, D. D.

613 Merchant St., S. F.

MECHANICAL EQUIVALENT OF HEAT.—It does not appear to be generally known that the value of the mechanical equivalent of heat has within a few years been corrected. It is generally referred to by mechanical writers at 772 foot pounds. Dr. Joule repeated his famous experiments in 1876, nearly six years ago, with extraordinary precautions, and the mean result of 60 experiments gave 774.1 foot pounds, with a possible error of 1·400, on account of the "thermometric scale error." This value should be used in all calculations relating to the value of heat as a motive power.

CANADIAN immigrants, says the Helena *Independent*, are coming into Judith county, M. T.

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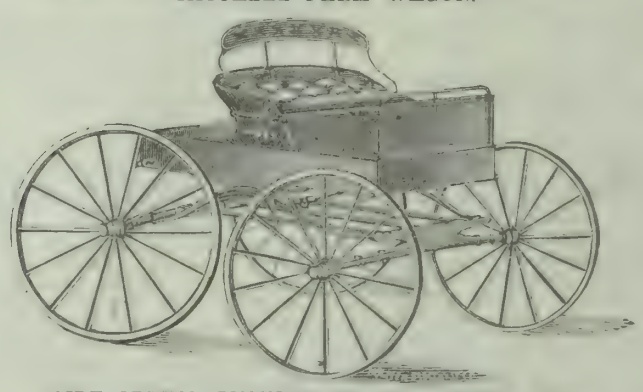
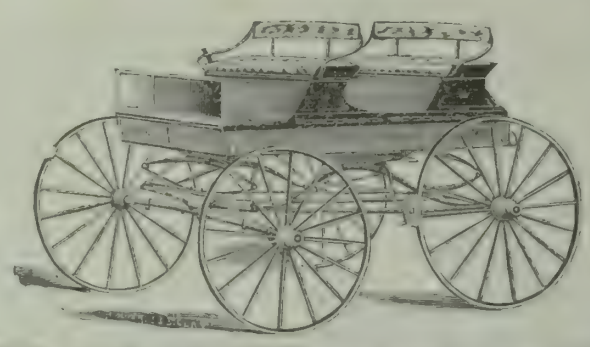
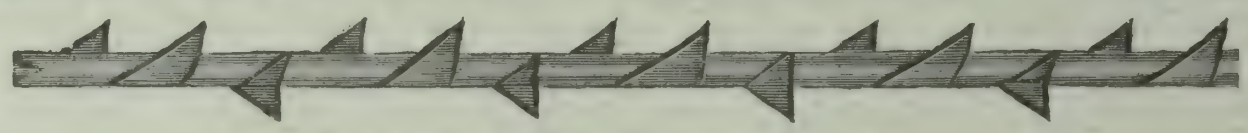


SIDE SPRING BUSINESS WAGON—THREE SIZES.



FOUR SPRING WAGON FOR RANCH AND FAMILY USE—THREE SIZES.

AMERICAN BARB WIRE



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The Barbs being triangular-shaped, like the teeth of a saw, and close together, there is no *cruelty to animals*, as they cannot pierce the hide; they only prick, which is all that is ever necessary as *no animal will go near a Barb Fence twice.*

AS THE WIRE IS NOT BENT OR TWISTED, its tensile strength is much greater than the Wire in all other Barb Wire Fences, as they are all made of twisted or bent Wire.

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The Barbs cannot be displaced or rubbed off, and are not pounded on and indented into the wire to hold them in place, as in other Barb Wire, thereby decreasing the strength of the Wire The Barbs are short, and broad at the base, where strength is required.

THE PAINTED WEIGHS A POUND TO THE ROD, so that the purchaser knows exactly how much fencing he is getting. Galvanized weighs slightly more.

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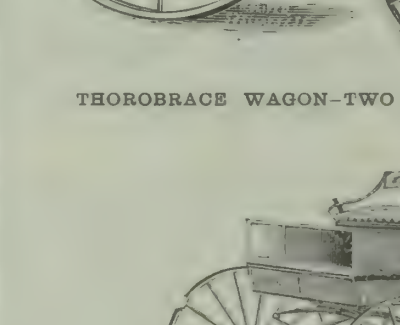

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The Game Law.

The enforcement of the law prohibiting the killing of game at certain seasons of the year has heretofore been very lax, but the organization of sportsmen's clubs will probably result in a due observance of the statute, as the members are determined that as far as they are able, the law shall be strictly enforced, and all violators prosecuted to the fullest extent. The following is an abstract of the sections referred to:

Every person who, in any of the counties in this State, between the 15th day of March and the 15th day of September, in each year, hunts, pursues, takes, kills or destroys quail, partridge or grouse, or any kind of duck, or rail, or marsh hens, is guilty of a misdemeanor. Every person, who, in the State of California, between the 1st day of January and the 1st day of July in each year, hunts, pursues, takes, kills or destroys doves, is guilty of a misdemeanor. Every person who, at any time, takes, gathers or destroys the eggs of any mallard, wood or summer duck, red-head, teal, gadwell or gray duck, or any other species of wild duck, is guilty of a misdemeanor. Every person who shall have any of the aforesaid game, or any male deer or buck, or any female deer or doe, or any antelope, elk or mountain sheep in his possession at a time when it is unlawful to kill the same within the county wherein the same is found, shall be *prima facie* evidence in any prosecution for a violation of any of the provisions of this section, that the person or persons in whose possession the same is found killed, took or destroyed the same in the county wherein the same is found, during the period when it was unlawful to take, kill or destroy the same.

Section 631 of the Penal Code is amended so as to read as follows: Any person or persons who shall, at any time, net, pound, weir, cage or trap any quail, partridge or grouse, or who shall take from any net, pound, weir, cage or trap any quail, partridge or grouse, retain in his possession, or sell or give away the same, is guilty of a misdemeanor.

An illuminated buoy is one of the latest contributions of science to the welfare of man. Imagine an enormous lamp riding the waves. The buoy is a compact wrought-iron vessel, which serves as a receiver of compressed gas. The duration of the flame depends upon the size of the buoy. Some in use in Europe have been made to burn 30 days and some 120 days. It is said that a buoy of sufficient size will contain gas enough to furnish the light for one year. During that time the flame is steady and constant night and day, requiring no attention whatever after once put in operation. The lantern attached to the buoy admits air enough to feed the flame, but not a particle of water can enter. The most violent gales, the greatest force of the waves, submerging even beneath them, has no effect upon this light. It burns with undimmed brightness as long as gas is in its reservoir. The light, it is said, can be thrown six or seven miles in clear weather. Salty deposits are not made on the glass of the lanterns, as has been demonstrated. The refilling of the buoy at certain intervals is performed by a tender, and requires but a few minutes' time. It is done by passing the gas from a storeholder, which contains the gas compressed to ten atmospheres, by means of a flexible tube into the buoy at a pressure of six atmospheres.

Golden Gate District Fair.—The Golden Gate Agricultural Fair Association has elected the following officers: President, A. C. Dietz; Secretary, L. Walker; Treasurer, the Union Bank of Oakland; Directors—J. F. Houghton, A. C. Dietz, R. P. Clement, W. E. Miller, W. E. Hale, C. H. Cushing, D. F. Majors and John B. Watson. There is a rumor that an effort will be made to hold the fair of 1882 at the District Fair grounds of San Francisco, as that county is included in the fair district.

The Horse in Motion.—The huge quarto volume recently published by James R. Osgood & Co. is the most valuable work on the horse which America has yet produced, and contains thousands of figures of quadrupeds in various stages of motion, and also many colored plates, showing the equine muscles and bones. To obtain these, several valuable racehorses were killed and dissected. The cost of the work has been very great, and the experiments of which it is the result were conducted by Governor Leland Stanford and Dr. J. O. B. Stillman, of California, with scrupulous care and ingenuity.

The Acme Harrow.

A correspondent of the *Country Gentleman* says of the "Acme" pulverizing harrow, clod crusher and leveler:

"An 'Acme' was offered to me for trial, on the condition that if it did not work well, it was to be returned to the seller. We tried it, and on once going over the ground it accomplished the work of both roller and harrow, and more perfectly fitted the surface to receive the seed than both could have done. We would not dispose of it for twice its cost. I have no interest in the manufacture or sale of either of the machines I have named, but only speak of them for the benefit of my fellow farmers, that they may try it, because I think that every farmer should have a knowledge of any tool which may prove a public benefit."

This harrow is now being advertised in this paper.

Over $5,000 has been subscribed to establish a fruit cannery at Los Gatos.

Patent Business.

Patents Are Virtually Contracts

Between inventors and the public. The consideration flowing from both parties to the contract is expressly fixed by statute. The Government requires the following consideration in every case: First, that an applicant for a patent shall disclose a new and useful improvement, of which he is the first and original inventor. Second, that the invention has not been patented, or published in a printed publication, prior to the date of his *invention*. Third, that the invention has not been in public use, or on sale, more than two years prior to his application for a patent. Fourth, that the invention shall be properly described and claimed in the specification forming a part of the patent. Provided an inventor complies strictly with these conditions, the Government guarantees that the inventor shall have the exclusive right to make, use and sell the thing invented for the term of 17 years.

The Patent Law provides that in case a patent, which is the evidence of the contract, is not executed in compliance with the requirements of the law, it may be annulled and rendered void. Hence, it is of the greatest importance to every inventor that his patent or contract be skillfully and accurately drafted, that it may afford him complete protection for his invention during the life of his patent.

Secure a Good Patent.

An inventor should first ascertain whether or not his improvement has been patented to another. This requires an exhaustive search among all the patents in the class to which the invention relates. This question can often be answered gratuitously by us immediately on receiving full information of the invention, by reason of our long and extensive practice as patent solicitors and editors and publishers of first-class scientific and industrial journals during the past 20 years and over. When the question of priority of invention is not so readily to be determined, it is generally best to make what is termed a "preliminary examination," by searching through the patent office reports among the patents in the class to which the invention relates, and referring to our extensive patent library, containing compilations of special classes of American and foreign inventions, mechanical dictionaries, scientific encyclopedias, files of scientific and mechanical newspapers, and an immense number of patent applications by inventors of the Pacific coast, carefully filed by this office since 1860.

If, by this "preliminary examination," the improvement is found to have been previously invented, our client will receive for the small fee of $5 for the examination a verbal or written report showing definitely whereby his invention has been anticipated, thereby saving him further expense, and perhaps much time, useless delay, anxiety, etc.

To avoid all unnecessary delay, however, in securing patents at the earliest moment practicable, inventors will do well to forward a model, drawing, or sketch, with a plain, full and comprehensive description of their invention (stating distinctly what the particular points of improvement are), with $15 as a first installment of fees. If the improvement appears to us to be novel and patentable, the necessary papers for an application for a patent will be prepared immediately, and forwarded to the inventor for his signature. When the inventor receives the application and finds it duly prepared, he will carefully sign and return the same plainly addressed to us, with postal money order or express receipt for our own fee. The case will then be promptly filed by us in the Patent Office, and vigorously prosecuted to secure the best patent possible. [This course is the most expeditious and satisfactory, as no time is lost in transmitting correspondence relative to the preliminary steps to be taken.] When the patent is allowed, the inventor will be duly notified, and on sending the final Government fee of $20 to us, we will order the issue of the patent, and forward the same as soon as it is secured from the Patent Office.

The payments are thus divided and made easy. We make no pretence of doing cheap work, in order to entice custom, nor do we afterward make additional charges to bring the bill up to a fair compensation. We do our work honestly and thoroughly, and we never give a case up as long as there is a chance to obtain a patent. The Agency charge is from $25 to $30, or sometimes more, if the invention is intricate or complicated, or requires much labor. Drawings cost from $5 upward, according to their number and the time employed; and, if a model is sent, the express charges upon this and the papers must be added. The total cost, in addition to Government fees, rarely exceeds $40, and for this we do all we can without appealing the case.

When the invention consists of a new article of manufacture, or a new composition, samples of the separate ingredients sufficient to make the experiment, and also of the manufactured article itself must be furnished.

Models and Drawings

Models are now seldom required by the Commissioner of Patents, and generally only in intricate cases. Perfect drawings of practical working machines are considered more satisfactory to the Patent Office than the old and more cumbersome system of storing up an immense bulk of almost numberless models.

Drawings or sketches sufficient to illustrate clearly the invention, with a sufficient description to enable us to make a full set of perfect drawings for the Patent Office is all that we require. A model will answer our purpose as well, however, in cases where the inventor can more easily furnish it for our use.

The value and even the validity of a patent often depends on the character, clearness and sufficiency of its drawings. There are thousands of existing patents in which the improvements are but partially or very poorly illustrated in the drawings. When an attempt is made to dispose of such patents, the vagueness and defects of the drawings often prejudice capitalists and manufacturers against the invention, while in reality it may be of great value, and would meet with ready sales had the invention been fully portrayed by artistic and skillfully executed drawings. Again, when patents of this character are brought into court, the uncertainty and ambiguity of the drawings enable the opposing experts to mystify the judges as to the construction or combination of parts intended to be covered by the patentee. In all cases prepared by us, the drawings are made under our personal supervision, by skilled draftsmen in our constant employ, and every precaution is taken that the invention is fully and clearly shown by different views, so that the improvement will be readily understood by the Examiners in the Patent Office, and comprehended by the public when the patent is granted.

In the Patent Office

The application is assigned to the Examiner having charge of the class to which the invention relates. The case must then take its turn with others in the order of filing, and in due time is carefully examined to test the novelty of the invention. If the Examiner fails to find anything that anticipates the invention, a patent is immediately allowed, provided the specification and claims are drafted in proper form. Should the Examiner find a prior patent which, in his opinion, anticipates one or more of the claims the application, a letter of rejection is sent to the attorney in charge of the case; and if the attorney coincides with the views of the Examiner, the claims rejected are erased. In preparing applications for patents, an attorney should be careful to familiarize himself with the class of inventions to which the application pertains, so that the specification and claims may be drafted as nearly perfect in the first instance as is possible. This course saves much time in prosecuting the application to a patent.

When claims are improperly rejected on patents which do not anticipate the spirit or wording of the claims, proper steps are immediately taken to convince the Examiner of his error. This is done, in most part, by personal arguments, as the differences in construction, operation, function and results are more readily discovered and appreciated by an oral presentation of the facts than can possibly be done by relying solely on written arguments. In order that the Patent Office record of the patent shall be complete, an oral argument is generally supplemented by a manuscript brief, that others, in examining the files at any future time, may clearly comprehend the position taken by the Examiner and attorney in prosecuting the case to patent.

In addition to our own personal attention to the interests of our clients here, we have, for over 12 years past, had constantly in association with us in Washington, one of the soundest legal counselors and ablest of practitioners in patent business in this country, who carefully attends in person to our business at the Patent Office and has attained success in a most marked degree.

Perfect Claims.

The value and force of a patent are dependent on its claims. A patent may disclose to the public the most important and valuable invention, and yet the claim be of such meager scope that the patent is actually worthless. When the claims of a patent are so loosely drafted that infringers can flood the market with improvements, differing from the improvement disclosed by the patent only in slight changes in construction and arrangements of parts, such a patent is valueless to the owner, as it fails to afford him that exclusive and complete protection guaranteed by the Patent Law. Hence it is that the greatest care, skill and perseverance are required, first in properly drafting the claims in the first instance, and, second, in prosecuting the application before the Patent Office, and maintaining the rights of the inventor to claims as broad and sweeping as the invention will warrant. This latter is no easy task. The Examiners of the Patent Office serve in the capacity of attorneys guarding the interests of the public. It is their sworn duty to exercise the greatest care and watchfulness, that patentees do not secure claims of greater scope than they are justly entitled to. It is but natural that Examiners are sometimes in error as to just what scope should be accredited an invention. Although the Examiners act under honest convictions in cases where they refuse an inventor his just rights, yet it is the duty of the attorney to maintain the claims of his client, if he is convinced that they are just and proper. To succeed in this requires the display of tact, firmness and ability; and when the Examiner is made to see that the inventor is honestly and fairly entitled to the claims which have been rejected, he will almost invariably recede from his former action, and allow the case.

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Inventors on this coast will find that owing to our familiarity with inventions and local affairs of this coast, we can more readily and fully comprehend their wants, and thus save much of the time ordinarily consumed in preliminary writing back and forth when distant agencies are employed.

Caveats.

A Caveat is a confidential communication made to the Patent Office, and is therefore filed within its secret archives. The privilege secured under a caveat is, that it entitles the caveator to receive notice, for a period of one year, of any application for a patent subsequently filed, and which is adjudged to be novel, and is likely to interfere with the invention described in the caveat, and the caveator is then required to complete his application for a patent within three months from the date of said notice. Caveat papers should be very carefully prepared. Our fee for the service varies from $10 to $20. The Government fee is $10 additional.

To enable us to prepare caveat papers, we only require a sketch and description of the invention

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Inventors who have rejected cases (prepared either by themselves, or for them by other agents), who desire to ascertain their prospects of success by further efforts, are invited to avail themselves of our unrivaled facilities for securing favorable results. We have been successful in securing Letters Patent in many previously abandoned cases. Our terms are always reasonable.

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Table of Contents.

CHAPTER. PAGE
Preface 5
1. Introductory Remarks on Orange Raising 7
2. Selection of Seed, and How to Raise the Plants 10
3. Selection of a Site for a Nursery 13
4. Transplanting to the Nursery 14
5. Selection of Site for an Orange Orchard 18
6. Selection and Purchase of Trees 27
7. Plan of an Orchard 29
8. Transplanting to Orchard 33
9. Cultivation 39
10. Irrigation 41
11. Crops Admissible in Young Orchards 73
12. Fertilizing 75
13. Pruning an Orange Orchard 77
14. Diseases of Orange Trees 81
15. Destructive Insects, and Remedies 83
16. Enemies—Protection, Prevention and Cure 89
17. Age at which an Orange Orchard will Begin to Fruit 91
18. Profits of Orange Growing—Ten Acres Enough 93
19. Picking and Packing 98
20. Cost of Planting an Orange Orchard in California and Conducting it to a Paying Basis 100
21. Our Markets, Present and Prospective.—Over Production Considered 102
22. Where Can Orange Trees be Successfully Grown in in this State 111
23. Varieties 153
24. Best Varieties to Plant 154
25. Seedling Versus Budded Trees 158
26. How to Bud 179
27. Grafting 183
28. Propagating by Cuttings and Layers 185
29. Stocks for Budding and Grafting 186
30. Lemon Culture 193
31. Limes 197
32. Citrons 199
33. Orange Wine and Brandy 201
34. Rules for Ascertaining the Average Number of Trees or Plants that Can be Set on an Acre 205
35. Recipes 206
36. Appendix on Grape Culture, by L. J. Rose ..... 211 to 227

Preface of the Author.

For a number of years I have thought of putting my extensive practical experience in citrus culture into book form, and now, at the earnest request of numerous friends, I shall, for the benefit of those who are seeking information in semi-tropical fruit culture, proceed to carry my purpose into effect, hoping that this will be a profitable guide to this most interesting and remunerative industry.

A residence of 28 years in this State, the last 16 of which have been devoted exclusively and uninterruptedly to semi-tropical orcharding and nursery business, enables me to write from a practical standpoint possessed by few. A lover by nature of the beautiful in horticulture, I have applied myself assiduously to assist in developing the latent interests of the business of citrus culture, by endeavoring to procure the best of the different species, by propagating and experimenting on a large scale, and carefully noting the different varieties. The field has been and still is wide and ample. However much I may have learned, I feel that we are only on the threshold of learning what are the most successful conditions for the profitable citrus culture of the future.

I shall endeavor to present the subject in as brief a form as possible consistent with the many ramifications of the business, using no technical phrases, the object being to adapt the work to the understanding of all that may at any time be engaged in the business.

It is important that all that venture in this business start right. This book is written to enable them to avoid many of the sunken rocks on which hundreds have been wrecked. I do not purpose to present myself vainly and egotistically to the public as one who has learned all there is to know about citrus culture, but as one who is willing to give his long and practical experience conscientiously.

I believe there is yet much to be learned on this subject, and that this may the more speedily be done, I record my views, believing that by comparing them with the experience of others the object may be sooner attained.

It was my intention to write a chapter on the history of orange culture in Southern California, but the want of reliable historical data does not justify the attempt.

Hopeful that this work will fill a niche unoccupied at present, and that it will result very beneficially to this advancing branch of horticulture, I humbly dedicate it to all lovers of the beautiful in nature, and especially to all lovers of this health-giving, profitable industry.

The Author.

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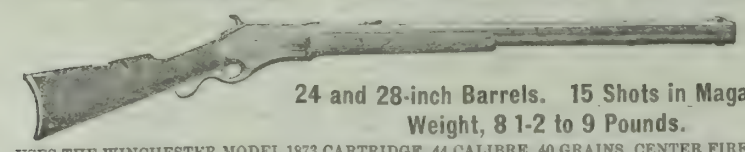

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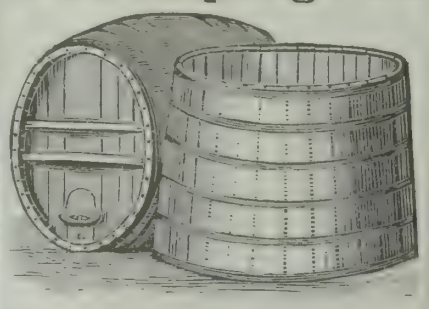

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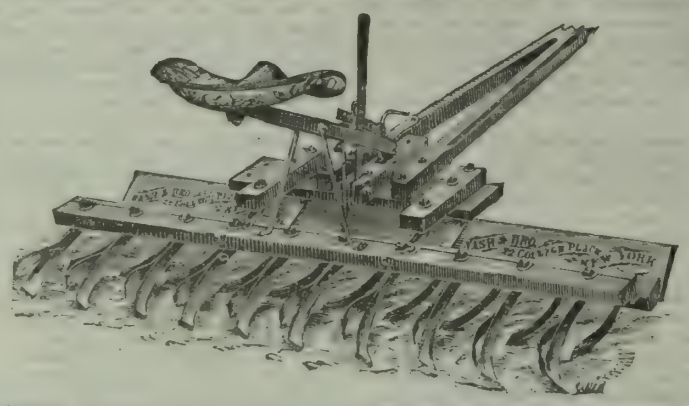

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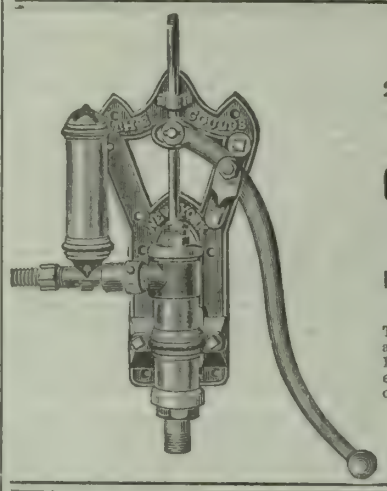

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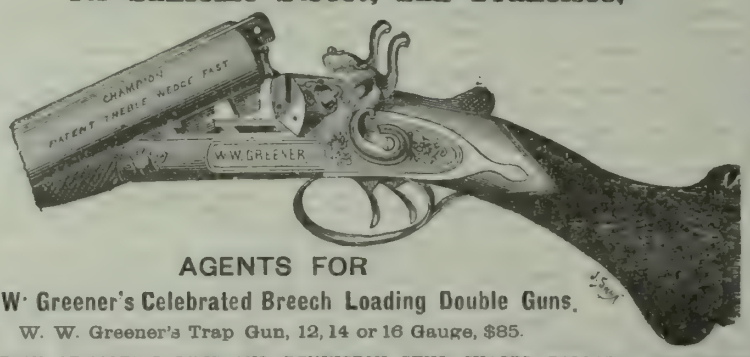

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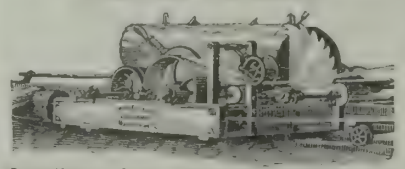

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J. D. ENAS, Sunnyside, Napa, Cal., Breeds Pure Italian Queen Bees. Comb Foundation.

YOUR NAME on 50 fine Chromos, or 40 Comic transparent cards, 10c. Wise & Co., Clintonville, Ct.

CHEAP CASH GROCERIES

— AT —

NEUMAN'S.

All kinds of Fancy and Staple Groceries, wholesale and Retail, at their Stores,

323 to 331 Sixth St., 1307 Polk St.,

— AND —

1144 AND 1146 FOLSOM ST., S. F.

Goods delivered to any part of the city, or to any railroad, steamer or vessel, free of charge.

Country Orders Specially Solicited.

All such orders must be accompanied by a check or cash. All goods promptly delivered and warranted as to quality.

☞Orders most respectfully solicited.

IMPORTANT!!!

That the public should know that for the past ELEVEN years our SOLE BUSINESS has been, and now is, importing (OVER 100 CARLOADS) and breeding improved Live Stock Horses, Jacks, Short Horns, Ayrshires and Jerseys (or Alderneys) and their grades; also ALL THE VARIETIES of breeding Sheep and Hogs. We can supply any and all good animals that may be wanted, and at VERY REASONABLE PRICES and on CONVENIENT TERMS. Write or call on us. LICK HOUSE, San Francisco, Cal., October 22, 1881 PETER SAXE & HOMER P. SAXE

PETER SAXE & SON

IMPROVED

EGG FOOD

To Keep Hens Healthy

AND MAKE THEM LAY.

The IMPROVED EGG FOOD is composed of more than twenty-five different articles. Every article tested by chemical analysis and thereby shown to possess the desired qualities to keep hens healthy and make them lay, as well as to promote the health and cure every disease of young chickens, ducks, turkeys, geese and every kind of fowl.

The IMPROVED EGG FOOD is now fully decided (by hundreds who have tried it), to be indispensable to all who keep poultry and would make them profitable. To those who have not tried it, I would say, GIVE IT A TRIAL I am manufacturing this in large quantities, and have reduced the price accordingly.

1-lb. Boxes, 40 Cts. 3-lb. Boxes, $1.
10-lb. Boxes, $2.50. 25-lb. Boxes, $5.

B. F. WELLINGTON, Prop'r.

☞Also, Importer and Dealer in Seeds.☜
425 Washington St., San Francisco.

GEO. TREFZER, Napa City, Cal.

Breeder and shipper of the following varieties, will sell after this day at greatly reduced prices, as sickness in the family compels me to reduce my stock. My breeding yard of Black Cochins (1 cock and 7 fine hens), all good birds, including my imported trio for which I paid $25 in the East —eggs, $2 per setting. My breeding yard of Brown Leghorns, consisting of 1 fine imported cockerel and 10 fine hens for $20; eggs, $2 per setting, or 2 settings for $3 White Leghorn eggs, $2 per setting or 2 settings for $3. Have as fine a White Leghorn cockerel in my breeding yard as can be found in America. Plymouth Rocks, $6 per pair or $8 per trio; eggs, $2 per setting, or 2 settings for $3. My Plymouth Rocks breeding yard consists of 1 very fine imported cockerel from James E. White, and 8 fine hens and pullets. Langshan eggs, $4 per setting; no fowls of this variety for sale this season. Pekin Ducks, $2 each; eggs, 11 for $2. Toulouse Geese eggs, $4 per setting of 6. Anybody that wants to buy fine Fowls for little money have an opportunity to do so now. Please address as above.

MAKE HENS LAY.

An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable. Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

PETALUMA INCUBATOR.

[Illustrated in RURAL PRESS, Dec. 3, 1881.]

Awarded the first premium over the Axford or National and others at the Petaluma fair of 1881.

Furnishing ample heat, easily managed and nothing to get out of order.

PRICES.

200 Egg capacity	$60.00
360 Egg capacity	75.00
600 Egg capacity	90.00

I. L. DIAS,
Manufacturer and Proprietor,
Box 242, Petaluma, Cal.
WIESTER & CO., 17 New Montgomery St., S. F., Agt's

LAUREL RANCH!

Thoroughbred

Spanish Merino SHEEP.

We offer for sale 400 HEAD OF YOUNG EWES AND RAMS. Prices always reasonable and terms liberal. Quality and condition superior to any flock in this State.

J. H. STROBRIDGE, Haywards, Alameda Co.
E. W. PEET, Agent.

CARP FISH

FOR SALE.

Can be forwarded by express, or rail or water, with safety. Inquire of LEVI DAVIS,
Forestville, Sonoma County, Cal.

To Fish Raisers.

I am now ready to sell Carp which were imported from Germany in 1872, in lots to suit. Address
J. A. POPPE, Sonoma, Cal.

SHORT HORNS FOR SALE.

I have for sale at my ranch, near Oroville, Butte county,

12 Young Short Horn Bulls,

From one to two years old. Price from $100 to $200 each.

ALSO

50 Short Horn Cows and Heifers.

All these cattle are red Durham—all thoroughbred. They are offered at private sale to those wishing to secure good stock. MOSES WICK.
Oroville, Butte Co., Cal.

Short Horn Bulls For Sale.

The undersigned now have for sale a few choice Thoroughbred and high grade bulls from the best milk strains Our herd consists of "Young Marys," "Daisies," "Imp Britannias," etc. Prices Reasonable.

HYDE & MOORE, Visalia, Cal.

We have for sale at our farm at Mountain View, thoroughbred

BERKSHIRE PIGS

From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880. Pigs from Imported Boar and Sow, $25 each. From Imported Boar and Thoroughbred Sow, $10 to $20. Our Imported Pigs are as nice Pigs as there are in the State. Address JACKSON & TRUMAN, S. F.

ITALIAN SHEEP WASH.

EXTRACT OF TOBACCO.

Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

SCAB OF THE SHEEP.

The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

For particulars apply to CHAS. DUISENBERG & CO. Sole Agents, 314 Sacramento St., San Francisco.

LITTLE'S SHEEP DIP.

Price Reduced

TO $1.25 PER GALLON.

Twenty gallons of fluid mixed with cold water will make 1,200 gallons Dip.

Apply to FALKNER, BELL & CO., San Francisco

Calvert's Carbolic

SHEEP WASH.

$2 per Gallon

After dipping the Sheep, is useful for preserving wet hides, destroying the vine pest, and for wheat dressings and disinfecting purposes, etc. T. W. JACKSON S. F., Sole Agent for Pacific Coast.

JOHN JENNINGS.

Hooper's South End Grain Warehouses,

Cor. Japan and Townsend Sts., S. F.

First-class Fire-proof Brick Building. Capacity, 10,000 tons. Goods taken from the Dock and the Cars of the C. P. R. R. and S. P. R. R. free of charge. Storage at Current Rates. Advances and Insurance effected

GUNS

Lowest prices ever known on **Breech-Loaders, Rifles, and Revolvers,**

OUR $15 SHOT-GUN

at greatly reduced price. Send stamp for our New Illustrated Catalogue (B) P. POWELL & SON 238 Main Street, CINCINNATI, O.

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SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,000,

In 10,000 Shares of $100 each.

Capital Paid up in Gold Coin, $531,200.

Reserve Fund and Paid up Stock, 21,178.

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CURRENT ACCOUNTS are opened and conducted in the usual way, bank books balanced up and statements of accounts rendered every month

LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

GOLD and SILVER deposits received

CERTIFICATES of DEPOSIT issued payable on mand

TERM DEPOSITS are received and interest allowed as follows: 4 per annum if left for 6 months; 5 per annum if left for 12 months.

BILLS OF EXCHANGE of the Atlantic States bought and sold.

ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1882.

IMPORTANT TO THE FARMER.

—USE—

Larroche's Fertilizer.

It is manufactured solely of Bones and residues of Meats dried and pulverized in such manner that all the Calcium, Phosphates, Carbonates, Nitrates and Potassium, which are the main assimilators to plants, are entirely preserved in the Fertilizer and render it most valuable to the cultivators of the soil

Stable manures require frequent irrigation in order to develop its properties; it is expensive, voluminous, and requires great labor to spread and subsoil it, it propagates weeds, worms, snails and destructive animalcules, the pests of the farmer. On the other hand, Bone Powder can be easily handled, transported at low rates of freight, in bags It checks the propagation of insects and luxuriates the growth of hops, vines, fruit trees, etc.; can easily be spread around the plants and is most efficacious as an impediment to the rapid and terrible encroachment of the PHYLLOXERA.

The Fertilizer should be sown by hand on the ground when it is moist like seed, and then harrowed. About 400 pounds is the quantity for an acre. Price, $40 per ton.

For further information apply or address to,

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Stall 21, San Francisco Market, San Francisco, Cal.

—OR—

SEVIN VINCENT & CO., Seedsmen.

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J. T. STOLL'S

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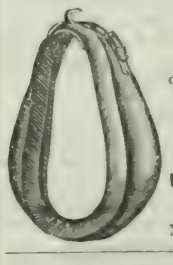
IMPROVED HORSE COLLAR

Patented Jan 18th, 1881.



It saves your horse's neck.
It is the best Collar in use.
It can be adjusted to any shape or any animal's neck.

☞Send for sample.☜

JOHN T. STOLL,

Harness and Saddle Manufacturer,

NO. 610 K ST., SACRAMENTO

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MANUFACTURER OF ALL KINDS OF

FARMERS' WAGONS,

Buckboards, Family Buggies

Of all kinds and sizes.

Keeps a good supply of well seasoned wood on hand Blacksmithing and painting departments in connection.

SEND TO

CADIEN & BAGLEY,

Stockton, Cal, for

ANTI-RHEUMATIC

Shrunk Flannel Underwear.

Measure around chest over vest for undershirt; around waist under vest for drawers. Goods sent C. O. D. per W. F. & Co. Price, $6 a suit.

MERRILL'S PATENT REIN HOLDER.

This is a sure and certain preventative to keep horses from running away. **Price $2.50.** Address W. P. MERRILL, Florin, Sacramento Co., Cal.

52 Go'd, Crystal, Lace, Perfumed & Chromo Cards, name in gold and jet, 10c. Clinton Bros., Clintonville, Co

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co.'s SCIENTIFIC PRESS PATENT AGENCY, No. 252 Market St., S. F.

FOR THE WEEK ENDING MARCH 7, 1882.

254 762—ELECTRIC LAMP REGULATOR—Brewer & Waterhouse, Sacramento, Cal.

254,632 - CUTTER AND PUNCH ATTACHMENT FOR ANVILS—Geo. T. Childs, Lookout, Cal.

254,473—ROPE CLAMP—John Gates, Portland, Or.

254,552—DRAFT ADJUSTING DEVICE FOR HARNESS—Jas. Hugill, Woodbridge, Cal.

254,667—BUSHING FOR BARRELS—Thos. J. Loftus, Sacramento, Cal.

254,675—AMALGAMATOR—A. McKellar, Washington Ter.

254,760—BED MATTRESS—J. N. Young, Sacramento, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast Inventors transacted with perfect security and in the shortest possible time.

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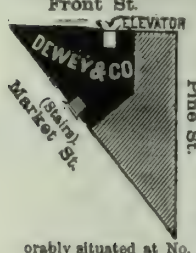
Tell your friends that they can have the PACIFIC RURAL PRESS mailed to them one month on trial for 25 cents. Four back Nos. will be added on receipt of 10 cents additional—making eight copies for 35 cents. It is a handsomely printed and illustrated home journal. Mail it to friends abroad.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.



Dewey & Co.'s Patent Agency and Newspaper Offices.

Dewey & Co.'s Patent Agency and the business offices of the Mining and Scientific Press, Pacific Rural Press, Pacific States Watchman and the Fraternal Record are now orably situated at No. 252 Market Street. Elevator entrance, *No. 12 Front St., S. F.*

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired, be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

POSTMASTERS having their attention directed to this notice by the publishers, are requested to act as agent for this paper (whenever they can do so without interference with our published list of solicitors), and we will allow them a favorable commission on subscriptions, as per terms published elsewhere.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances. The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

SAMPLE COPIES.—Occasionally we send copies of this paper to persons who we believe would be benefited by subscribing for it, or willing to assist us in extending its circulation. We call the attention of such to our prospectus, terms of subscription, etc., and request that they circulate the copy sent.

REMITTANCES to this office should be made by postal order or registered letter, when practicable; cost of postal order, for $15 or less, 10 cts.; for registered letter, in addition to regular postage (at 3 cts. per half-ounce), 10 cts.

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

A TURNED LEAF will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

ANNUAL STATISTICIAN of 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 816 California st. Price, $4.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Mar. 22, 1882.

Trade in produce has been very light all the week. The sales of produce on 'Change call have ranged from a valuation of $5,000 to $31,000 each day since last Wednesday. Values have not materially changed for any of the great staples, although buyers still bid low, owing to the improved prospects.

The latest from abroad is as follows:

LIVERPOOL, March 21.—Wheat: California spot lots are firm at 9s 9d@10s. Cargo lots are 46s for just shipped, 48s for nearly due, and 48s for off coast,

The Foreign Review.

LONDON, March 20.—The Mark Lane *Express* in its review of the British Grain trade for the past week, says: Wheat is not growing too fast, although the weather has been that of May. Farmers' deliveries continue to decrease. Fine samples improved 6d to 1s at several provincial markets, owing to the scarcity. Inferior samples were neglected. Rates in London were slightly improved. In foreign trade begun rallying, having touched the lowest point. American red and choice white Wheat were 3@6d better. The supply is heavy, one-half of it being American. The off-coast market is steady. Sales were nine cargoes during the week and four shipments. Flour is steadier, foreign being in steady supply. The quality of much of the American afloat is inferior. Prices are steadier but unimproved. Barley is sluggish, and rates are dropping. Foreign is dull and slow of sale. In Oats the demand is nominal at unchanged rates; foreign is quiet. In Maize, mixed American improved 1s 6d in London and Liverpool. Sales of English Wheat for the past week were 31,640 quarters, at 44s 7d per quarter, against 33,926 quarters, at 43s per quarter, for the corresponding week of last year.

Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive according to the latest advices:

In port.	1882.	1881.
Engaged, tons	66,966	50,590
Disengaged, tons	23,185	7,582
To arrive, tons	236,934	194,280
Total supply, tons	327,085	252,452
Increase for 1882, tons		74,633

The freight market is still quite active; 62s 6d to Cork for orders was offered for an iron ship.

BAGS—On the call, $9.20 bid, $9 37½ asked, June, for Calcutta; $9.25 bid for July 15th; $9.45 asked for July. For August, $9.31½ bid, $9.40 asked.

BARLEY—Barley has declined and seems much weaker, owing to the improved outlook. Call sales of 10 tons No. 1 Feed, March, Oakland, $1.50; 50 tons do, July, $1.27½, and 150 tons do, August, $1.12½.

BEANS—The only change is a shade off on Bayos.

CORN—Corn is cheaper, and Western Corn is still selling. 10 tons of Nebraska sold at $1.60.

DAIRY PRODUCE—Butter is now coming in amount, and has dropped off about 2c ℔ lb. Cheese is also a shade lower.

EGGS—Eggs are about as before, the price for choice fresh lots being 20c ℔ dozen.

FEED—There is a drop in Ground Feeds. Middlings has sold on call at $20.50 ℔ ton. Oilcake Meal is $2.50 ℔ ton lower. Bran is subject to much speculation. Sales on call: 100 tons, seller, June, $12.50; 100 tons do, $12; 100 tons do, $12.25; 50 tons do, December, $14.

FRUIT—Mexican Limes and Pineapples are now plentiful and lower. California Oranges are doing better, the rate running up to $4 50 ℔ box for some lots.

FRESH MEAT—Beef and Mutton are cheaper, as the high prices have called in a good supply of live stock. Pork is on the other hand a fraction higher.

HOPS—There is nothing new here, the market being quiet at 22@25 cts. for California Hops. The New York market is dull.

OATS—Oats are shading downward; sales are few.

ONIONS—The difference in quality is still great, sales being all the way from 40 cts. to $1 ℔ ctl.

POTATOES—Potatoes have turned downward again; an average decline of about 20 to 30 cts. ℔ ctl on the favorite kinds is noted.

PROVISIONS—Trade is good and Bacon prices have advanced.

POULTRY AND GAME—Fowls have improved, Turkeys and Geese are doing a little better. Ducks have fallen back. The trade is good as is usual at this season.

VEGETABLES—The early spring vegetables are selling a little better this week, as may be seen in our price list.

WHEAT—But little is doing. On call some sales are made for future delivery. Some transactions are as follows: 250 tons No. 1 White, May, $1.63¾, and 100 tons do, Port Costa, August, $1.55. Bids and offers were: Ex. choice, July, $1.60 bid, $1 70 asked; No. 1 White, $1-62½ asked; July, $1.52½ bid, $1.60 asked; September, $1.-55 bid, $1.57½ asked; No. 2 White, August, $1.47½ bid, $1.-53¾ asked; No. 1 Amber, March, $1.58¾ asked; No 2 do, March, $1.57½; No. 1 Sonora, July, Stockton, $1 50½ bid. Outside sales of 845 sks, Sonora, $1.56¾; 1 100 and 1,000 sks do, $1.56½, and 5,000 sks smutty do, $1.50, all Port Costa delivery.

WOOL—There is nothing new.

Eastern Grain and Provision Markets.

CHICAGO, March 21.—Wheat, strong, higher and active at $1.34½ cash, $1.35 for April, $1.31 for May. Corn strong, higher, active, at 66c cash, 63½c for March and April. Pork, strong, higher, at $17.15 cash and April $17.38 for May. Lard, strong and higher, at $10.75 cash and April, $10.90 for May. The entire amount of Corn in the Danville elevator, posted to day, is 387,000 bushels Freight rates by water are 2@2½.

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., March 22, 1882.

Eng Standrd Wheat..	8¾@ 9	45 inch	9½@ 9¾
Cal Manufacture		40 inch	8½@ 8¾
Hand Sewed, 22x36.	8¾@ 9	Wool Sks Hand Swd	
20x36	8½@ 8¾	3½ lb	—@47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	—@49½
Machine Swd 22x36.	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10½	Bean Bags	6½@ 7
Quarters	6 @ 6½	Twine, Detrick's A	32½@35
Eighths	4½@ 4½	" " AA	35 @37
Hessian, 60 inch	—@12		

Domestic Produce.

WHOLESALE.

WEDNESDAY M., March 22, 1882.

BEANS & PEAS.		Pecans	13 @ 15
Bayo, ctl	3 00 @3 25	Peanuts	6 @ 6½
Butter	3 75 @4 25	Filberts	14 @ 15
Castor	3 50 @4 00	**ONIONS.**	
Pea	4 60 @4 75	Red	— @ —
Red	2 10 @3 00	Silverskin	40 @1 00
Pink	2 50 @3 00	Oregon	— @ —
Large White	3 00 @3 25	**POTATOES.**	
Small White	4 60 @4 75	Early Rose	2 05 @2 10
Lima	— @6 00	Petaluma, ctl	2 12½@2 25
Field Peas, b'lk eyel	50 @1 75	Tomales	2 05 @2 20
do, green	2 60 @2 25	Humboldt	2 10 @2 20
BROOM CORN.		" Kidney	—@1 75
Southern	3 @ 3½	" Peachblow	2 40 @2 50
Northern	4 @ 6	Jersey Blue	— @ —
CHICCORY.		Cuffey Cove	— @ —
California	4 @ 4½	River, red	1 90 @2 00
German	6½@ 7	Chile	1 67 @1 70
DAIRY PRODUCE, ETC.		do, Oregon	— @ —
BUTTER.		Oregon Peerless	1 90 @2 00
Cal. Fresh Roll, lb.	26 @ 23	Sweet	1 00 @1 25
do Fancy Brands	— @ 29	**POULTRY & GAME.**	
Pickle Roll	— @ —	Hens, doz	6 00 @ 8 00
Firkin, new	25 @ 30	Roosters	5 50 @10 00
Eastern	18 @ 22½	Broilers	6 00 @ 8 00
New York	— @ —	Ducks, tame, doz	7 50 @ 9 00
CHEESE.		Mallard	2 00 @ 2 50
Cheese, Cal., lb	16 @ 17	Sprig	1 50 @ 1 75
EGGS.		Teal	75 @ 90
Cal. Fresh, doz	19 @ 20	Widgeon	1 00 @1 12½
Ducks	— @ —	Geese, pair	1 75 @2 25
Oregon	— @ —	Wild Gray, doz	1 75 @2 00
Eastern, by expr'ss	— @ —	White do	50 @1 00
Pickled here	— @ —	Turkeys	13 @ 15
Utah	— @ —	do, Dressed	15 @ 18
FEED.		Turkey Feathers, tail and wing, lb.	10 @ 20
Bran, ton	— @14 75	Snipe, Eng	2 00 @2 25
Corn Meal	42 00 @43 00	do, Common	50 @ 75
Hay	11 00 @16 00	Quail, doz	75 @ 80
Middlings	— @20 50	Rabbits	1 00 @1 25
Oil Cake Meal	— @27 50	Hare	1 50 @1 75
Straw, bale	— 62½@— 70	Venison	5 @ 7
FLOUR.		**PROVISIONS.**	
Extra, City Mills	5 25 @5 50	Cal. Bacon, extra clear, lb	13½@ 14
do, Co'ntry Mills	4 75 @5 00	Medium	13½@ 14
do, Oregon	4 75 @5 12½	Light	14 @ 15
do, Walla Walla	4 50 @5 00	Lard	13 @ 16
Superfine	3 50 @4 25	Cal. Smoked Beef.	11½@ 12½
FRESH MEAT.		Shoulders	9½@ 10½
Beef, 1st qual'y, lb.	8 @ 8½	Hams, Cal	12½@ 13½
Second	5½@ 6½	do, Eastern	15½@ 16½
Third	4 @ 4½	**SEEDS.**	
Mutton	6 @ 7½	Alfalfa	12 @ 13
Spring Lamb	10 @ 14	do Chile	— @ —
Pork, undressed	5½@ 7½	Canary	3½@ 4
Dressed	8½@ 9½	Clover, Red	14 @ 15
Veal	7½@ 8	White	45 @ 50
Milk Calves	7½@ 8	Cotton	— @ 20
do, choice	— @ 10	Flaxseed	2½@ 3½
GRAIN, ETC.		Hemp	— @ 5
Barley, feed, ctl	1 50 @1 60	Italian Rye Grass	25 @ —
do, Brewing	1 70 @1 75	Perennial	25 @ —
Chevalier	1 60 @1 67½	Millet, German	10 @ 12
Buckwheat	1 50 @1 75	do, Common	7 @ 10
Corn, White	2 00 @2 25	Mustard, White	1½@ 2
Yellow	1 87½@1 90	Brown	2½@ 3
Small Round	1 87½@1 90	Rape	2½@ 2
Oats	1 70 @1 75	Ky Blue Grass	20 @ 25½
Milling	1 87½@1 95	2d quality	16 @ 18
Rye	2 25 @2 30	Sweet V Grass	— @ 75
Wheat, No. 1	— @1 62½	Orchard	20 @ 25
do, No. 2	1 57½@1 60	Red Top	— @ 15½
do, No. 3	1 45 @1 50	Hungarian	8 @ 10
Choice Milling	— @1 65	Lawn	30 @ 40
HIDES.		Mesquit	10 @ 12
Hides, dry	18 @ 19	Timothy	9 @ 10
Wet salted	9½@ 11	**TALLOW.**	
HONEY, ETC.		Crude, lb	6½@ 7
Beeswax, lb	23 @ 25	Refined	9½@ 10
Honey in comb	14 @ 18	**WOOL, ETC.**	
Extracted, light	9 @ 10	FALL—1881.	
do, dark	7½@ 9	San Joaquin	10 @ 13
HOPS.		do, Lamb	13 @ 15
Oregon	20 @ 21	Southern Fall	10 @ 12½
California, new	22 @ 25	do lambs'	13 @ 14
Wash. Ter	19 @ 20	Northern, free	16 @ 20
Old Hops	— @ —	do, defective	14 @ 16
NUTS—Jobbing.		Mountain, free	16 @ 18
Walnuts, Cal	10 @ 11	do, slightly seedy.	13 @ 15
do, Chile	7½@ 8	Humboldt & Mendocino	20 @ 21
Almonds, hd shl lb	8 @ 10		
Soft shell	14 @ 15		
Brazil	10 @ 11		

General Merchandise.

WHOLESALE.

WEDNESDAY M., March 22, 1882.

CANDLES.		Cement, Rosendale	1 75 @ 2 00
Crystal Wax	16 @18	Portland	3 75 @ 4 00
Paraffine	20 @—	**NAILS.**	
Patent Sperm	25 —28	Asartd sizes, keg	3 75 @ 4 00
CANNED GOODS.		**OILS.**	
Asartd Pie Fruits. 2½ lb cans	2 25	Pacific Glue Co's	
Table do	3 50 @ —	Neatsfoot, No. 1	1 00 @1 00
Jams and Jellies	3 75 @ —	Castor, No. 1	— @1 05
Pickles, hf gal	3 25 @ —	do, No. 2	— @ 95
Sardines, qr box	1 67 @ —	Baker's A A	— @1 30
Hf Boxes	2 50½@1 90	Olive, Plagnoil	5 25 @5 75
Merry, Faull & Co.s		Possel	4 75 @5 25
Preserved Beef 2lb, doz	3 25 @3 —	Palm, lb	9 @ —
do 4 lb doz	6 50 @6 —	Linseed, Raw, bbl	— @ 60
Preserved Mutton 2 lb, doz	3 25 @3 50	Boiled	— @ 65
Beef Tongue	5 75 @6 00	Cocoanut	60 @ —
Preserved Ham, 2 lb, doz	5 50 @5 60	China nut, cs	68 @ 69
Deviled Ham, 1 lb, doz	3 00 @3 50	Sperm	1 40 @ —
do Ham ½ lb doz	2 50 @ —	Coast Whales	35 @ —
Boneless Pigs Feet 3lbs	3 50 @3 75	Polar	— @ —
2 lbs	2 75 @ —	Lard	— @1 00
Spiced Fillets 2 lbs	3 50 @ —	Petroleum (110°)	18 @ 22
Head Cheese 3 lbs.	3 50 @ —	Petroleum (170°)	28 @ 35
COAL—Jobbing.		**PAINTS.**	
Australian, ton.	— @ 8 50	Pure White Lead.	7½@ 8
Coos Bay	6 50 @ 7 50	Whiting	1½@ —
Bellingham Bay	— @ —	Putty	4 @ 5
Seattle	7 00 @ —	Chalk	1½@ —
Cumberland	— @13 00	Paris White	2½@ —
Mt Diablo	— @ —	Ochre	3½@ —
Lehigh	— @ —	Venetian Red	3½@ —
Liverpool	— @ —	Averil mixed Paint gal	
West Hartley	— @ 9 00	White & Tints	2 00 @2 00
Scotch	— @ 8 50	Green, Blue and Ch Yellow	3 00 @3 50
Scranton	— @ —	Light Red	3 00 @3 50
Vancouver Id	— @ —	Metallic Roof	1 30 @1 60
Wellington	— @ 9 00	**RICE.**	
Charcoal, sack	— @ —	China Mixed, lb	4½@ 5
Coke, bush	— @ —	Hawaiian	4½@ 5
COFFEE.		**SALT.**	
Sandwich Id lb.	— @ —	Cal. Bay, ton	14 00 @22 00
Costa Rica	12 @ 14	Common	6 50 @14 00
Guatemala	12 @ 14	Carmen Id	14 00 @22 00
Java	18 @ 20	Liverpool fine	14 00 @20 00
Manilla	15 @ —	**SOAP.**	
Ground, in cs	— @ 22½	Castile, lb	9 @ 10
FISH.		Common brands	4½@ 6
Sac'to Dry Cod	— @ — 5	Fancy Brands	7 @ 8
do in cases	— @ — 5½	**SPICES.**	
Eastern Cod	— 7 @ — 7½	Cloves, lb	37½@ 40
Salmon, bbls	7 00 @ 7 50	Cassia	19 @ 20
Hf bbls	3 50 @ 4 00	Nutmegs	85 @ 90
1 lb cans	1 12½@ 1 22½	Pepper Grain	15 @ 16
Pkld Cod, bbls	— @ — —	Pimento	16 @ 17
Hf bbls	— @ — —	Mustard, Cal ½ lb Glass	— @1 25
Mackerel, No. 1 Hf bbls	9 50 @ 10 00	**SUGAR, ETC.**	
In Kits	1 75 @ 1 85	Cal. Cube lb	— @ 11½
Ex Mess	3 50 @ 4 00	Powdered	— @ 11
Pickled Herring, box	3 00 @ 3 50	Fine Crushed	— @ 11½
Boston Smoked Herring	65 @ — 70	Granulated	— @ 10½
LIME, etc.		Golden C	— @ 9½
Plaster, Colden Gate Mills	3 00 @ 3 25	Cal Syrup, kgs	65 @ —
Land Plaster, ton	10 00 @ 12 50	Hawaiian Mol'sses	25 @ 30
Lime, Snta Cruz bbl	1 25 @ 1 50	**TEA.**	
		Young Hyson, Moyune, etc	40 @ 65
		Country pkd Gunpowder & Imperial	35 @ 75
		Hyson	30 @ 35½
		Fooo-Chow O	27½@ 32
		Japan, medium	35 @ 37½

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., March 22, 1882.

FRUIT MARKET.		Pears, sliced	— 9 @— 9½
Apples, bx	1 00 @ 3 00	do whole	— 7 @— 8
Bananas, bnch	2 50 @ 4 00	Plums	— 5 @— 6
Cocoanuts, 100	6 00 @ 7 00	Pitted	— 13 @— 14
Cranberries, bbl	12 50 @14 00	Prunes	— 9 @— 12½
Limes, Mex	12 00 @15 00	Raisins, Cal, bx	— — @ 2 50
do, Cal, box	2 00 @10 00	do, Halves	— — @ 2 75
Lemons, Cal, bx	2 00 @ 3 50	do, Quarters	— — @ 3 00
Sicily, box	6 50 @ 7 50	Eighths	— — @ 3 25
Australian	— — @— —	Zante Currants	— 8 @— 10
Oranges, Cal, bx	3 00 @ 4 50	**VEGETABLES.**	
do, Tahiti M	— — @— —	Artichokes, doz	— — @— 50
do, Mexican	15 00 @17 00	Asparagus, lb	— 20 @— 22½
do, Loreto	— — @— —	Beets, ctl	— — @— 65
Pears, bx	— — @— —	Cabbage, 100 lbs	— 75 @ 1 00
Pineapples, doz	7 00 @ 8 00	Carrots, sk	— 75 @— 90
DRIED FRUIT.		Cauliflower, doz	— 90 @ 1 00
Apples, sliced, lb	— 6 @— 6½	Garlic, lb	— — @— 1½
do, evaporated	— 10 @— 11	Lettuce, doz	— 10 @— —
do, quartered	— 5 @— 5½	Mushrooms, lb	— 8 @— 10
Apricots	— 15 @— 17	Okra, lb	— 5 @— 8
Blackberries	— 14 @— 16	Peas, green, lb	— 15 @— 18
Citron	— 28 @— 30	Parsnips, lb	— — @— 8
Dates	— 9 @— 10	Rhubarb	— 10 @— 12½
Figs, pressed	— 4 @— 6	Squash, Marrow	
do, loose	— 3½@— 5	Yat, ton	18 00 @20 00
Nectarines	— 14 @— 15	Tomatoes	— 15 @— 18
Peaches	— 11 @— 11½	Turnips, ctl	— — @— 75
do pared	— 14 @— 18		

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The Company's Steamers will sail

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CITY OF TOKIO.....April 1st

At 2 P. M.

Excursion Tickets to Yokohama and return at special rates.

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Taking freight and passengers to Mazatlan, San Blas, Manzanilo and Acapulco, and via Acapulco for Lower Mexican and Central American Ports, calling at San Jose de Gautemala and La Libertad to land passengers and mails.

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ZEALANDIA.....April 8th

At 2 P. M. or on arrival of English mails.

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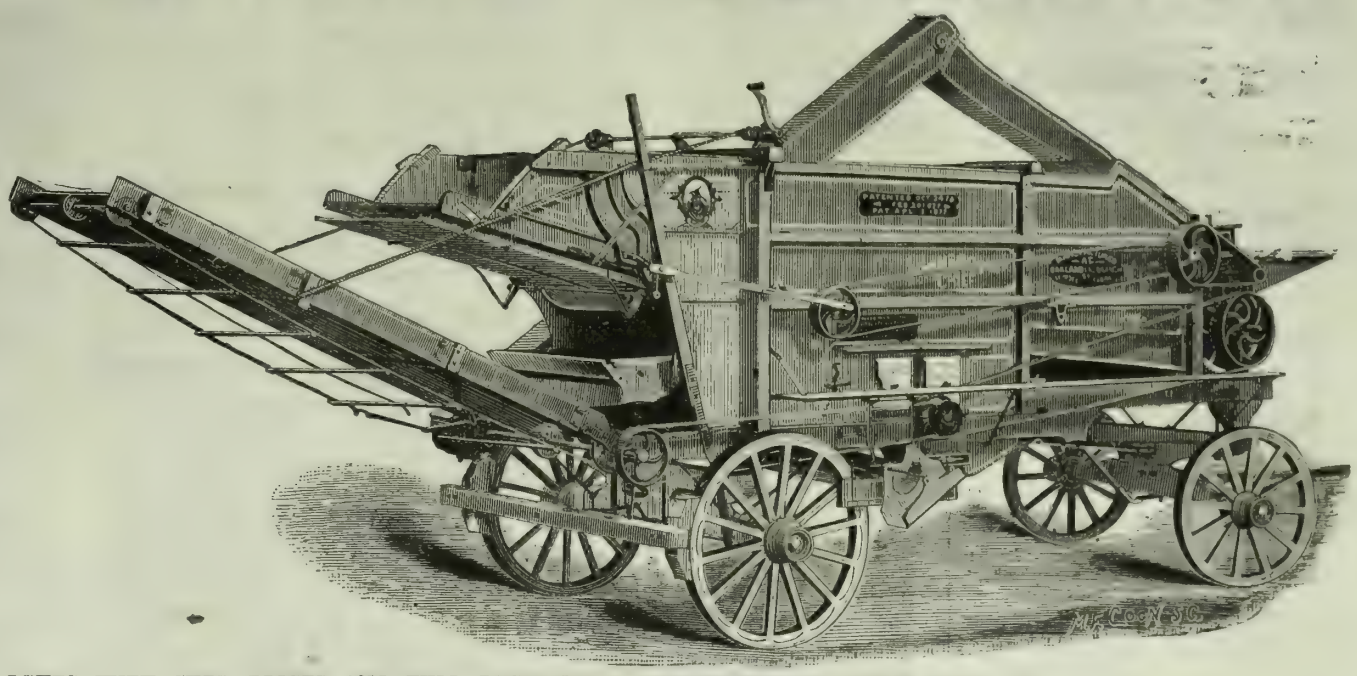

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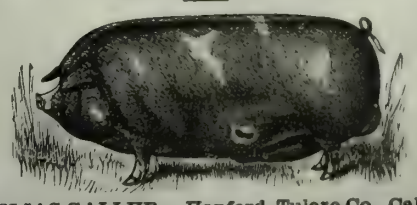

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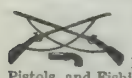

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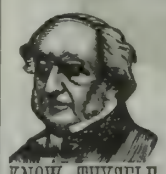

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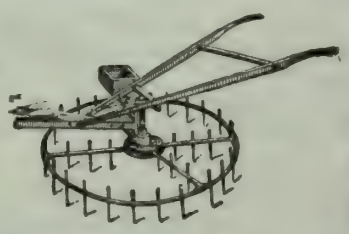

The Jackson Vineyard Harrow rotates either way at the will of the driver, and by driving the SLOW side next to the vine or tree, there is no danger of hurting them, as the Harrow will roll gently around them.

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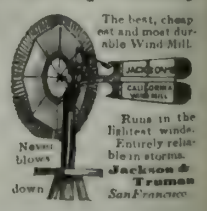

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SETTLERS' EDITION—TWENTY-FOUR PAGES.

Volume XXIII.] SAN FRANCISCO, SATURDAY, APRIL 1, 1882. Number 13

Guernsey Cattle.

The last report of the American Dairymen's Association brings information concerning the Guernseys, which are the latest favorites among the Eastern dairymen who have a taste for trying the newer kinds of stock. The Guernseys have, of course, been long known in this country, but it is but recently that they have come to compete with the Jerseys for the public favor. There is a herd of Guernseys in Santa Clara county, in this State, which were imported direct from Guernsey island, and will no doubt come into prominence as the Guernsey fever comes this way.

The report above mentioned has an essay on Guernseys, by L. W. Ledyard, who has a herd of them in central New York. He describes how he determined to escape as far as possible from a ruinous competition with the butter of commerce, an article often so inferior as really to place oleomargarine and fatty frauds at an advantage. He was sure that there is a demand for an honest product at a paying price; and the more frauds there are, the more particular people will pay for exemption from the risk of using adulterations. Many experiments were made on his farm with pans and feeds, and especially with cattle, and a great many lessons were learned at the hard school of failure. Short Horn grades were first used, then thoroughbred Jerseys, the latter a manifest improvement, and with their grades the result was encouraging. Later, his attention was called to the Guernsey, and he bought two heifers just imported. When they came in milk, he was surprised and delighted with the effect their milk had on the butter made from 30 cows. If their milk were withheld from the large pan that held the milk of the entire herd, it was easy to see the change, and the butter made without it was lower in price.

Mr. Ledyard gives interesting facts concerning the Guernsey in its native land. On the island of Jersey, the cattle have been bred more and more to supply the English demand for a pet cow, that, on the green lawns surrounding their country places, would show as a beautiful object. For many years, a light squirrel-gray was deemed a color well fitted to contrast with the deep green of English grass. A later fancy has called for animals of dark color, which, to be entirely fashionable, must add to their attractions black points and a black tongue. Most admirably have the skillful Jerseymen conducted breeding for these ends, and it may be said to their credit, that in many cases they have indulged the æsthetic tastes of foreign purchasers without sacrificing the remarkable milking qualities of their cattle.

But the sturdy Guernseyman has departed less in his breeding from the original type of his butter cow. A century ago her merits were so fully appreciated that it was determined that the introduction of any foreign blood must be undesirable, and in 1789 a law was passed by the Insular Legislature forbidding the importation of any cow, heifer, bull or calf, under a penalty of 200 livres and the forfeiture of the boat and tackle which should bring them, and a further penalty of 50 livres on any sailor on board who should fail to inform of the importation. Since that date it is probable that the cattle of the island of Guernsey have remained as absolutely pure as any breed that is known. The aim that has animated these many years of care has been to produce a cow as perfect as possible for the dairy of luxury—a cow to produce milk and cream of marvelous richness and butter that in grain, flavor and golden color excels that of any and all other breeds.

The most remarkable characteristic of the Guernsey is the richness of the animal. It is seen in every point. The horn is soft and full of color; the hoofs are usually like tortoise shell; the skin is soft and of a golden yellow tint, and the inside of the ears is still more highly colored; while the same orange hue seems to glow from the bag as if there were light under the soft skin. In the mature, well-bred animal, both eye and hand find evidence that all secretions are rich and of high quality, and a careful examination prepares the mind for understanding why the butter made from Guernsey cream possesses qualities that are not obtainable from the milk of any other animal.

The disposition of these cattle is remarkably gentle and affectionate. On the island, their care is usually confided to women and children, whose gentle ways are reflected in the quiet demeanor of their family favorites. In driving through the green lanes of the island, the visitor will see many beautiful scenes of children, when scarcely large enough to toddle along, leading cattle to water with one end of the frail string that is sufficient to secure the obedience of the beautiful animal, which really seems fitted to be the guardian.

A WINTER SCENE IN SUMMER LAND.

THE IMMIGRATION ASSOCIATION.—We give two pages of this issue to matters of interest to those who know little of California—the account being officially prepared by the Immigration Association of California. This society is composed of a number of public-spirited business men, whose names are given in another column. They give their time to the work of spreading information about California, and the expense of printing, etc., is met by voluntary contributions from generous people. The information given in this week's PRESS is also published in pamphlet form and distributed by the association. In that shape it is accompanied by a map, which all may have by addressing the Secretary, A. W. Preston, No. 10 California street, San Francisco. The statement prepared by the association does not, of course, apply to all special localities in our great State, but it is intended for a general review of the subject for the benefit of those wholly unacquainted with the State. The association is doing much work in aid of immigrants, and is called upon by hosts of persons arriving here, and besieged with inquiring letters from all parts of the country.

THE GRAIN CALL BUSINESS.—The new method of selling produce seems to have had but a limping progress. It was reported on Wednesday, that as business on the Produce Exchange call has of late dwindled down to almost nothing, and as there is no speculative inclination there, a petition has been in circulation for a day or so requesting its abolition. Those who are circulating the petition are trying to get 101 signatures, or a majority of the members of the Exchange, in order to vote for a renewal of the old way of doing business by samples. The chief argument of the petitioners is, that no business of any consequence is done on the call, and that it spoils regular business. It was said Tuesday that the sale of the Merchants' Exchange building to the Produce Exchange was off, owing to the refusal of both the negotiating parties to pay $6,250 brokerage to the broker who effects the sale. The Stock-gambling Board, which has contemplated going into the produce call business is still proceeding with its preparations. It may happen that the "grain gambling" will finally go to the old "stock-gambling" fraternity—and we are not sure but that is where it belongs after all.

The Citrus Fair.

This year's Citrus fair at Riverside was a notable success—a credit to the people of southern California and to the State at large. It was one of those occasions in which effort and enthusiasm seem to reach a climax, and though they press onward in the future to still greater hights, the earlier success and accomplishment is never forgotten. Thus the Riverside fair of 1882 will stand in the horticultural history of southern California. The zealous enterprise of the Riverside people in the construction of their pavilion and paying for it at once, while the Los Angeles establishment was allowed to sink into the slough of debt; the generous spirit of co-operation among the several famous fruit regions of Los Angeles, San Diego and San Bernardino counties, which showed hearty sympathy with the effort at Riverside by their splendid exhibits of splendid products—these and other indications point to the vigor and strength in southern California industries and the spirit of her people. We are heartily glad that such has been the result of last week's fair. It is more eloquent in praise of the county and the true friendliness of the people than volumes of description or storms of oratory. It will give the whole State renewed reason for pride in her south-land; it will give the south new evidence upon which to ground confidence in their own future and strength to labor for it.

All our advices from the fair, where we were represented by our senior publisher and a special correspondent, go to establish the success of the fair and praise the spirit which secured it. We are unable in this issue to properly present the descriptions of the materials exhibited, the instructive essays read and the award of premiums. We must have more room, and for this reason we postpone the report of the fair until next week, and then we shall insert extra pages to accommodate a full transcript of the proceedings. Next week we shall also give full reports of the San Diego Citrus fair of the previous week—thus forming a CITRUS FAIR EXTRA, which will group in a single issue the whole collection of allied information, in form convenient for preservation or transmission to distant friends. A large number of extra copies will be printed and they will do much to spread abroad the tidings of the memorable deeds of 1882 in the growth of citrus fruits.

Coming to California.

It is the season of the year when the new comer to California by the upper route plunges from the snows of the Sierras down into the flowers and sunshine of the California valleys. He receives an impression from such an entrance to California which can never be forgotten. The change from vast expanses of snow, wearying the sight and chilling the blood, to the grateful green and running water of a scene like that shown in the engraving, is a transformation which cannot be adequately described to one who has not experienced it. Perhaps the picture may, however, aid the imagination. It is not true to California in a broad sense, of course, nor is it characteristic of the grand view which will open before the eyes of the immigrant; but as the train speeds along through the canyons opening into the grand valleys, the sights from the windows will include many little nooks like that shown in the engraving.

As we have devoted space this week to a statement from the Immigration Association, which will come into the hands of many new comers to the State, we have thought a little sketch like that shown on this page might be appropriate.

A LONDON dispatch says: Emigration from the Clyde promises to be very large this season.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Northern Notes.

EDITORS PRESS:—As you doubtless remember, I left California last June on a visit to Oregon, in the interest of the carp fish. I passed all through western Oregon. There is a large area of good country in the Willamette valley, but the most slavish set of farmers on this coast. I visited some of the carp ponds that I had previously stocked. They were doing splendidly. I constructed and stocked some others. The people there have good facilities for raising carp. From there I crossed the Cascade mountains into Tygh valley, 40 miles south of The Dalles. There I stocked several ponds—the first brought on this side of the mountains. From there I went to Lone Rock; thence to Hepner; thence to Penelton; thence to Centerville; thence to Weston; thence to Milton; thence to Walla Walla, in Washington Territory, passing through the great wheat country of Oregon. At the Blue Mountain station on the railroad there were 320,000 sacks of wheat piled up ahead of the cars. This country lies south of Snake river and north of the Blue mountains. It is a good farming country, but has a terribly harsh climate. Last winter they lost about 80% of sheep and 75% of cattle and from 10% to 15% of horses; but this winter they have passed through, so far, with very little if any loss.

From Walla Walla I crossed Snake river and went to Colfax, in the Poluse country, and I stocked some more ponds with carp. There is a good body of land, but very frosty the year round. From there I went up in Idaho to Moscow; thence I came back via Alnota, Pomroy and Dayton (the most lively place in all this country); thence to Walla Walla; thence back to Lone Rock, and crossed the Blue mountains on to John Day's river. Getting snowbound, I took up for the winter. It has snowed 38 different times. We have killed 115 deer, and some of them weighed 200 lbs. Last summer and fall I had some splendid trout fishing. I shall stock more ponds here with carp fish. I shall come home by land as soon as I can get through the mountains.

I have hardly seen a paper this winter, and am becoming a regular backwoodsman, knowing nothing that is going on further than what is reported by word of mouth. It puts me in mind of the Western States 50 years ago.

Tygh Valley, Oregon. LEVI DAVIS.

PERIODIC VARIATIONS OF GLACIERS.—M. F. A. Forel, of Morges, presented to the first general meeting of the Swiss Society of Natural Science his investigations upon the periodic variations of glaciers. The present remarkable period of glacial retreat began about 1840 in some places, but the Unteraar glacier did not begin to diminish until about 1871. The period is now coming to an end and many of the glaciers are beginning to increase again. The differences of length are immediately traceable to periodic variations in the velocity of flow, which are due to corresponding variations in the thickness of the glacier. These are due partly to differences of snow-fall upon the summits, partly to variations in the summer heat; the latter cause has probably only secondary influence. The retreat which is just ending is attributable to a deficit of snow which dates back from 40 to 60 years and a series of warm summers for the past 20 years.—*Les Mondes.*

PLANETS AND SUN SPOTS.—Adolph Duponchel has presented a communication to the French Academy upon the agreement of the increase of the frequency of sun spots with the increased action of the planets upon the sun at the time of their nearest approach to that central orb. To test his theory he ventures the prediction that there will be an increase of the mean temperature in any given place during the 12 years to come over that of the 12 years which have just passed. Uranus and Neptune are about receding from ther perihelia, and he anticipates an effervescence in the solar atmosphere, analogous to that which occurred between 1716 and 1725. He thinks this solar disturbance will be accompanied with an increased number of sun spots, of which the maximum will occur, not in 1882, as is generally supposed, but between 1888 and 1892.

ELECTRIC LIGHT IN LONDON.—The present condition of the electric light in London is: Streets are now being lighted with it at one-fourth of the price of gas; incandescent lamps can be introduced into every room of any house so soon as the mains are laid; there can be a separate meter to each house; the lamps can be separately lighted and put out by turning a cock; if one light goes out no other one is affected; the subdivision is so complete that there is no glare, and yet a room with incandescent lamps is far more brightly lighted than with an equal number of gas lamps, and an equal amount of candle-power produced by electricity is cheaper than an equal amount produced by gas. In addition, the electric light has no odor, it does not vitiate or heat the air, nor does it, like gas, tarnish paint and decoration.—*Truth.*

HORTICULTURE.

Notes on Vine and Tree Planting.

EDITORS PRESS:—Your notes on vine and tree planting, in your issue of the 11th inst., although too late to be of much service this year, is nevertheless just to the point, and should be preserved for future reference by those who contemplate going into the business of fruit raising. It is a great pity that it was not given sooner, as the hints might have prevented errors committed by many who have planted trees and vines the present season.

Mr. Buckman has given you the keynote, in my opinion, to success in orchard and vineyard planting—which proves him to be, not only a veteran horticulturist, but a close observer and student of nature, without which qualities no man is competent to take charge of either orchard, vineyard or garden.

Long and Short Cuttings.

The hints he gave you on the setting of cuttings are especially valuable and to the point. Any close observer cannot fail to observe that a short cutting makes a more vigorous and stocky plant than a long one, for the reason that the feeble little rootlets are not overtaxed to supply a high bare cane with moisture. Being exposed to the exhausting north winds and warm sun, will coax out the leaves before the little roots have strength enough to supply the plant with the necessary moisture or sap to keep it growing. The evaporation through leaf and stem is more than the roots can supply, and all the dormant forces of the cutting is spent in forming leaf, instead of roots. In the short cutting, there is but little of it above ground, and that portion so near the ground that it avails itself of the escaping vapors from the earth, permitting it to spend all its vital forces in forming and forcing out roots, until it has strength and vigor enough to force out its leaves and branches, after which there is always an equal and uniform balance maintained between root and branch.

At the proper time for putting out cuttings, viz: in January or February, the earth is warmer than the air, and the tendency of the plant is to seek the more congenial element; but if the cutting stands high above the ground, exposed to the warming and genial influence of the day's sun, its forces are diverted to the top. The result is that there is a constant conflict going on between the two influences. Who has not observed instances of long slim cuttings set in a warm, sheltered place, first put out full, heavy growth of leaves, and then suddenly dying, after expending all their vital forces, without forming a single root. Where is the gardener that will take the whole limb of a rosebush and stick it in the ground, and expect to make a plant of it? Some women will do so, disliking to remove a limb or bud, and hoping to have a fine large bush full of bloom as soon as it will take root (and so they will); but the gardener will divide it into forty, fifty or a hundred short bits, with but few eyes or buds to each, and make a good plant of nearly all.

The short cutting puts forth its buds and leaves rich and strong, just as fast as the roots can supply them with abundant plant food, and no faster; and the top of the plant, being so near the ground, perfectly protects the stock from the burning summer sun, and with roots strong and long enough to follow up the receding moisture as the season advances.

Surface Rooting.

And, on the other hand, the long cutting being set deep in cold, undisturbed and unventilated earth, throws out very feeble, irregular roots at the bottom, often forming the club-foot, spoken of by Mr. Buckman.

The "Cyclopædia of Agriculture" remarks: "Rain always contains in solution air, carbonic acid and ammonia. The first two ingredients are among the most powerful disintegrators of a soil. The oxygen of the air and the carbonic acid, being both in a highly condensed form by being dissolved, possess very strong affinities for the ingredients of the soil. The oxygen attacks and oxidizes the iron; the carbonic acid, seizing the lime and potash and other alkaline ingredients of the soil, produces a further disintegration, and renders available the locked-up resources of this magazine of nutriment. Before this can be used by plants they must be rendered soluble, and this is only effected by the free and frequent access of rain and air. The ready passage of both of these, therefore, enables the soil to yield up its concealed treasures."

Now if this theory be correct (and I think there is no doubt of it), should we not infer that the closer the roots lie to the surface soil, the greater the amount of invigorating plant food they draw, and the deeper they go the less, providing always that moisture is present. It is said by Mr. Johnson that water which plants imbibe so largely consists of oxygen gas, eight-ninths of its entire weight. In this form it is easily decomposed, and yields an inexhaustible supply, and the atmosphere contains 21%. Carbonic acid contains 72% of the same gas, and this is known to be absorbed in large quantities from the atmosphere by the leaves of plants and, while in solution with water, by the roots. If all the gaseous compounds (so essential to plant life) combined with water and air are absorbed by the soil, does not the warm, ventilated soil absorb and hold in store for future use much of those elements, or does the water carry all with it that the plants do not immediately take up, as it percolates through the earth. Or in other words, does water, drawn from a great depth, contain the same percentage of those gases as when it descends in rain (less the amount absorbed by the leaves and roots of plants); if not, the soil must retain it.

I have often heard the question asked, why vegetation did not grow as well and fast by being sprinkled with water drawn from a deep well, even though it be warmer, as by an equal amount in the form of rain, but the well water if permitted to stand a few days in an open vessel, exposed to the air, is greatly improved by absorbing those elements from the air.

If those views are correct, we must conclude that the great life-giving properties are to be found in the warm rich surface soil, and as a proof of this, the cutting set deep will invariably throw out a second set of roots, near the surface of the ground (in the very place best adapted to their purposes and the place nature intended them to grow), but without the regularity and relief it would have had in throwing out a strong, uniformly radiating set of roots, had the smoothly-dressed cutting been first placed there. It is not in the nature of things for a plant with two such sets of roots to make a healthy or vigorous plant, with a long space of half-dead and half-developed wood between, neither stock nor root, with a big, gnarly, abnormal growth at the bottom, scattering and absorbing the vitality of the plant. You cannot have a healthy plant under such conditions.

Wide Planting.

Mr. Buckman is also correct in his views on wide planting, both in the vineyard and orchard. There is no questioning the fact that there are hundreds of orchards and vineyards in this State to-day, that are rendered practically profitless, and even worthless, by overcrowding. With every ray of light and breath of fresh air shut out from them, the trees become moss-covered, dusty and full of dead branches and injurious insects. To this more than to any other cause I attribute the alarming increase of destructive insect pests. Many orchards can still be renovated and brought into profitable bearing by thinning out and judicious pruning. And I would recommend a more severe thinning out than Mr. Buckman did.

I took a trip up into the mountains last fall, from here to Placerville and Auburn, going by the way of Pleasanton, Livermore, Stockton, Sacramento, etc., returning on the other side of the river; in fact, visiting all the vineyard and orchard districts that I could conveniently reach, and I must confess that I was not prepared to see such poor judgment displayed in planting, both trees and vines, as I saw on my route. Young vineyards were planted in many places as close as a corn-field and not looking unlike one. Such planting is absolute folly. One acre of the same land properly planted would return more money than 10 acres crowded in that way. It cannot but result in loss to the owner. The result is poorly-developed and poorly-ripened fruits, destitute of flavor. Send it to market, and then abuse the commission man because he can't sell such fruit up to the highest quotation. Trees cannot have good fruit without heat, light and air, and they cannot have those requisites without room.

Expert wine makers in France say they cannot make wine fit to drink from grapes ripened under a mean summer temperature of 67°, and how can this be obtained if every ray of heat is shut out from it. In order to get the radiating heat from the earth, the soil must first be permitted to absorb it from the direct rays of the sun.

Inter-Planting.

But I think Mr. Buckman is at fault in one particular, and I think he will admit it on second thought, viz., in speaking of the distances he would set his permanent trees apart, then putting an intervening row of other varieties; and among the varieties he names the apricot. His plan is good so far as it relates to small and slow-growing trees; but the apricot, as it grows in our strong valley land, cannot be classed either as a small or slow-growing tree; on the contrary, it is a rapid growing, large and long-lived tree, and comes into profitable bearing sooner and continues to the end. Unlike many other varieties of fruit trees, its fruit does not deteriorate by the age of the tree, but produces as large and well-flavored fruit at 50 years old as at five, if kept properly pruned. In its spread of top it will almost discount any other fruit tree. With judicious pruning it will interlap its limbs in seven years, at 16 ft. apart. From this it can be easily seen that it is not the tree to plant as an intervening and temporary tree; but the peach, Yellow Egg, Jefferson, Coe's Golden plums and small-growing trees would answer a good purpose. WM. H. JESSUP.

Haywards, March 20, 1882.

METEOROLOGICAL RESEARCH.—It is stated that M. Mouches, Director of the Paris Observatory, is making arrangements for taking meteorological observations at an elevation of 2300 metres by means of a captive balloon. The balloon will be charged with ordinary coal gas. The observations will be specially directed to obtain such data as will facilitate the calculation of atmospheric refraction.

SHEEP AND WOOL.

The Mohair Industry.

"Then bid the deep in wild commotion flow."—*Campbell.*

EDITORS PRESS:—In my timid communication that appeared in your issue of Feb. 11th, I omitted to mention that some person had received a valuable acknowledgment for the introduction of the "white elephant" into California. The omission was unintentional, and if the apology is accepted, I will guarantee that henceforth neither he nor any of his confreres will have the slightest occasion to complain that they have been overlooked.

In treating of the professional goat breeder, it was observed, "he alone had the very best strain of blood," etc. Your issue of Feb. 25th proves the truth of this statement. The first thing they do is to disparage my stock, and the next, to impugn my veracity. After occupying your valuable space with a reiteration of those dogmas and platitudes with which the agricultural press has been deluged for over a quarter of a century, your correspondent essays a divination of my thoughts. He has no means of divining my thoughts, neither are they of interest to the public, except in as far as they find a proper expression through the columns of the PRESS on the important subject under consideration. Equally unfortunate is the appellation of "prophet". There is no prophecy in that communication. Even at the risk of being chased about the hills with a gold or silver tankard, I will set conjecture forever at rest by announcing that I appear upon the scene as the "Advocate of the Mohair Producing Interest of America',' and the purpose that I design is to subvert the present system of goat breeding no this continent. Whether I shall plant the banner of success on the summit of my "Utopia", or be obliged to retire to that obscurity from which I so abruptly emerged, I will endeavor to avoid the desecration of your columns with such an epithet as "swindled."

It is to the producer alone that our distinguished foreigner has been a "white elephant." To the professional breeder he has been truly a bonanza. It requires no argument to prove that where stock will increase as rapidly as goats, and can be sold at from $100 to $200 a head the profits must be literally enormous. The manufacturer seems satisfied with his profits; the railroads must have theirs, but the producer has had none.

My argument is that, it matters not what rank this fiber maintains among the articles of commerce, if the producer does not receive some remuneration for his labor, all efforts to engraft it on the industries of the country must sooner or later be abandoned.

Yet, by no means do I arrogate a preference in these columns. The editors of the RURAL have invited a candid discussion of the subject. The agricultural press is no longer the prerogative of the professional; and it is to be hoped that those who have cast their offerings at the shrine of the white elephant will come forward with their experiences, observations and inferences. While we would hail with delight the investigations of a Lawes or a Sturtevant, we can in no wise afford to disdain the crude experience of the unembellished pen. And who can tell but the readers of the RURAL will peruse a column of our simple Anglo-Saxon with as much satisfaction as they do the bewildering jargon derived from the sunny clime of the Apache? Nor can it be expected that the purlieus of a mountain goat camp will furnish a correspondent whose diction will rival the purity of Macauley, the copiousness of Ross Browne, or the more classic terseness of an Everett.

For my own part, the deductions of eight economic years are these: It is a false philosophy and an improper policy that have retarded the development of a momentous national industry; nor does the derisive criticism of "immense effort" in the least dissuade me from saying so. MARTIN KIRBY (73).

Darrah, Mariposa Co., Cal.

REMOVING MILLSTONE GLAZE.—The Fry process for taking off the glaze of millstones, which was so much talked of a few years ago, was as follows: First the burrs must be put in perfect face, well dressed, out of wind, and in the best possible condition for grinding. They are then run a couple of hours until they become warm, taken up, and washed with aqua ammonia in the following manner: Take four ounces of aqua ammonia (spirits of hartshorn) and thoroughly saturate the stones with a good sponge, and let them stand over night. By doing this once a week, or oftener if necessary, the glaze will be kept off. His second method was to take two ounces each of borax, washing soda and muriate of ammonia, and dissolve them in a quart of warm water; then add cider vinegar. Now cover the stone with sand, and apply the solution with a sponge. Leave it on 10 minutes, and then dry the stones thoroughly. This is said to harden the burrs so that nothing, not even garlic, can glaze them, and they will retain their natural temper and grit for weeks, and will not glaze.—H. W. MILLER.

The Swine Yard.

Breeds and Management of Hogs.

EDITORS PRESS:—As I frequently see invitations to farmers and others to write for your paper, of which I am a reader and subscriber, I often think when I read them, that I will lay aside the duties of every-day life, and tax my mind and brain for a short time at least, while I try to write something that would be interesting if not instructive to your many readers; but in so doing I shall try and avoid, if possible, getting into a controversy such as I see befall some of your correspondents. Although I take as much interest in reading them as the next one, still I fail to see that they result, as a general thing, in any satisfactory solution of the point in question; for instance, the bluestone, the bees, the walnut have been the subjects under discussion, and still we are none the wiser. I have been waiting to hear a breeze on hogs as you thought some time ago that we ought to have a little hog talk; but although he is no insignificant part of the farmer's productions, he has failed to draw forth anything like such an array of facts and figures as even the busy little bee; but better late than never, as the saying goes, and as I am what they call a hog man, or one who raises hogs, for I would not have any one think that I was part hog, as the term might imply. Still I have heard it said that there were two legged hogs, and I believe it. But this is not just what we started to tell you; in the first place you need not look for any high-toned treatise on this breed or that, only the experience of one who has tried some of the different breeds which are fashionable in the State at the present time.

I have been raising hogs, in connection with grain, for the past ten years. I started in with one old Essex sow, and I think that for all practical purposes that breed is about as good as any, although I did not have that kind long enough to speak positively in regard to them. The next that I interested myself with was the Poland-China. I kept them, I think, about three years. My objections to them may be classed thus: First, they are too slow in coming to maturity, unless they have plenty of feed and good care; second, they are too large for the packers, and they also claim that their meat is coarse; third, they are poor breeders, at least I found them so as a general thing, for I found that the sows were so stupid and lazy generally that if one happened to lie down on one or two of her pigs, they might squeal until life was extinct, for she would not seem to hear them. They were also poor hogs to hunt their own living, and it does not pay to feed hogs in this country.

I next tried the Berkshire—what they called the "rough-haired Berkshire." They proved to be a better hog on general principles. I also had some of the "smooth-haired Berkshire." I found them to be good breeders, good nurses, and good, industrious hunters, for if there was anything to be had to eat in the neighborhood they were sure to have their share. But I had one objection to them: if a sow had pigs up in the hills, and you did not happen to find them until they were two or three weeks old, it would take a good deal of strategy to get them down to the barn. They seem to get wild very quickly, even the larger hogs and shoats. Their meat is good; in fact, I think there is none better in the hog family.

Hogs for a Name.

I now have another breed, different in many respects from the others. I will describe him; probably some one can give him a name. I can only trace the genealogy of my boar back to a pair of pigs that were purchased from off a ship in San Francisco, probably ten or twelve years ago. From them this hog is descended, and his points are as follows: Body medium length, very square behind and very deep; legs very short; head somewhat resembles the Poland-China, as do the ears. The hog has a rough, shaggy coat of hair, and is spotted black and white—more black than white. These hogs are good breeders, easily kept, very gentle, and are always fat; will weigh from 200 to 400 pounds when grown. I think I have just the kind of hogs for my purposes.

Management of Swine.

I have now given you my experience with such kinds as I have had, and now if it will not be imposing on you too much I will give you an idea of how I manage the hog, and how much I make out of them, etc. Of course I am not the only one that keeps hogs that way, but there are a great many that do not keep them so. Almost any farmer can make something from a few hogs, but to handle them successfully you must have some pasture to fall back on in certain seasons of the year. You also need good fences, and then you are fixed for raising hogs. You next can take a piece of hill land having upon it a creek or spring of water; fence it in, and either summer-fallow it or plow it early in the winter—probably you can do it some time when you could not plow anywhere else. Sow with barley so that it will come in early. In the meantime your hogs can run on the ground you intend to winter sow, on your summer-fallow grain after it gets a root, or on the hills as you find it most convenient. If the winter is not too wet they may run on the grain until it begins to joint without doing it any harm. Then you want some pasture to keep them for a short time—from the time you take them off the grain until the barley is in the stiff dough; then it is ready for the hogs, and turn them in. If they have done well through the winter, in June you will probably have hogs to sell, for they always bring a better price then than later in the fall. You can sell another lot from the barley field if you have not overstocked it; then what is left will get fat on the stubble of the same grain they lived on through the winter; and what may be wasted or could not be cut with the header or reaper on the hills, for there is plenty of land worked that cannot be harvested with either of those implements, and I have some of it right here. In this way you get what would otherwise be wasted, you turn some rough hill land to good account, raise all the meat you need to feed your men and family, and pocket a thousand or two beside, which is just like finding it in the road.

I know some people think it spoils the wheat to let the hogs run on it, but that is all a mistake; I cannot see but what I raise as much wheat and barley per acre on the same class of land as my neighbors. Of course there are times when they will do harm, for instance when the grain is young, for then they pull it up, or when the ground is very wet. Still, if the hogs are not too large, I never could see that they did any harm. Some will ask, don't they root? I have never been troubled that way; I find that they root only in certain kinds of land, where there is a little nut we call a grass nut. I have never put a ring in a hog's nose since I have kept hogs. I do not want it understood that they never root, for I have seen them dig up acres as thoroughly as if it had been plowed, but this was not where grain was sown.

I expect I have given you about enough hogology at one time. Hoping that I have not inflicted upon you or your readers anything that will disturb the peace and harmony of so welcome a visitor to the home of the farmer as the RURAL PRESS, with these few remarks I close this rambling essay on the unfortunate but very contrary hog. HILL CLIMBER.

Suisun, Cal.

Duroc Swine.

EDITORS PRESS:—Some days since I was at the romantically picturesque ranch of Messrs. Hinckley & Getchell. Their stock of Durocs receive careful and generous treatment. Where a hog of rapid growth is required the Duroc fills the bill; but it is not the hog for the Irishman's "streaky bacon" course—well fed one day for the fat and starved the next for the lean. The sows have large litters and make excellent mothers. For those who feed hogs as hogs should be fed the Duroc will probably make as much weight in a given time as a hog can. EDWARD BERWICK.

Carmel Valley, March 15, 1882.

The Apiary.

Uniting in March.

EDITORS PRESS:—Once more I have gone and done it—actually united colonies in March (successfully), so it cannot be so "absurd" after all; neither can it be "very bad advice." On the 7th of March, 1882, I actually united six colonies of bees, making three colonies. Two were weak, one strong, and will need surplus boxes in a few days of fine weather. Four were fair, but have two stories of combs, and will bear extracting should we have a warm spell for a few days. I did not examine them, owing to the wet and cool weather until the 17th inst. One had nearly all the bees and queen on the upper tier of combs, and brood rearing going on vigorously; only enough bees below to assist the hatching of the sealed brood in the lower combs. I found only two queen cells started. The bees allowed the queen to kill the inmate, and they resembled acorn cups at the time the hive was opened. Young bees were hatching in the lower story. Most of the comb in the upper story was so much filled with honey, that the original stores were not touched, and the capping of the full cells was going on, and drone brood started in drone combs. The others were in a nearly similar condition. I expect to have to extract them this week.

Swarming will take place very soon unless the honey is extracted, or the bees have more room—in a very few fine days. The weather has been too cool for successful queen raising. The last week was unusually stormy and cold, and bees did not fly much and were better let alone.

In uniting bees, one must be careful. I do not fear for the results in either uniting or transferring at any season of the year. A novice should not attempt it, unless under favorable circumstances, but weak swarms should not be tolerated at any time.

One can, with movable frame hives, exchange combs with just hatching brood from strong stocks to the weak ones, and build them up that way, not giving any more combs at a time than the weak ones can cover, until the young brood hatches, when they can be exchanged again for more brood until strong.

I also transferred two swarms for a neighbor about that time, which have done well. If a party does not have confidence in his own ability to transfer at this season, or at any season, he should get some one that he can depend on to do the job for him. I know of some who pretend to know all about bees, who have made some messes of transferring in this vicinity. A party informed me quite lately of a beeman (?) who transferred some bees into a movable frame hive, and sold some for $5 a swarm. The swarm kept dwindling, until there were no bees left, and finally the moths got the combs. It was no novice who did the transferring, but an old beeman of 20 or more years' experience. I could mention more of his manipulations, but it is not necessary. Another party goes about the country charging a price for transferring, and a royalty for his hive, as I understand—a poor thing at that, and a source of loss to the purchaser.

I find makers of hives who never handled a bee, are afraid of one, and suffer terribly when stung, and bees just make for them without their going near a hive; but they can make an improvement on any hive ever manufactured. They manage to sell their traps, and the country gets flooded with them to the detriment of the honey-producing industry, and the utter disgust of the would-be honey producers.

I am glad to learn that we are to have a journal devoted to the honey interest and bee keeping in this State. The *California Apiculturist* proposes to fill this lack, and the appearance of the first two numbers helps to sustain the promises made by its projectors. It is sustained by some of the most prominent bee men of the State, and proposes to remedy many more existing evils. With the RURAL PRESS and the *California Apiculturist* as the leading sources of information on topics pertaining to the leading industries of the Pacific coast, a better light is opening. J. D. ENAS.

Napa, Cal.

Floriculture.

What are You Doing in Your Garden?

EDITORS PRESS:—I am afraid the Santa Barbara amateur floriculturists are letting themselves be forgotten by the flower lovers of other parts of this State since our dear old friend, the *Horticulturist*, closed and locked its doors on us.

Of course, we are growing in golden grains of experience and knowledge, and our gardens are growing in grace and beauty and have done exceedingly well this unusually cold period.

We have had flowers of the choicest, tea roses, carnations, narcissus, pelargoniums, heliotrope, tuberoses, sweet violets, and many other pampered greenhouse pets, but here grown out doors, and in profusion, on all necessary occasions, as participants of concerts for charitable and public purposes can testify, where bouquets and baskets were sent in showers after the fair singers. A decided impetus has been given to fern and orchid culture, and some other very choice plants among the beautifully variegated foliage greenhouse plants, by a gentleman lately come to reside among us—Dr. L. G. Yates, of Centerville. Theirloss in that place is our great gain. The addition of the above plants was the one touch of beauty needed to add a charm to our otherwise fine and large collection of plants grown here. It was not for lack of money or willingness that they had not been grown here before. I presume it was lack of knowledge of the wants of the plants. When Dr. Yates came, bringing with him a few of his choice collection, and came from a less agreeable climate, where he had grown them successfully without other aid than we were growing our native ferns and choice flowering plants, we deeply regretted lost time, and will try now to retrieve it. The members of our natural history society are about to fill a large wardian case, and hope soon to procure some of the choicest ferns on the coast for it. Let us hear from the lovers of lilies, shrubs, vines and ferns, and all the new choice plants that are being brought into the different parts of the State.

MRS. G. E. CHILDS.

Santa Barbara, Cal.

SCIENCE OF PERFUMES.—By a process known as infleurage, which is the exposure of beef fat to fresh flowers in close boxes until it is thoroughly permeated and charged with their odors, the perfumes of six flowers are obtained, which could in no other manner known to science be preserved apart from the fresh petals. Those flowers are violet, jasmine, tuberose, rose, orange flower and cassic (cinnamon flower). From those six there are 50 or more combinations made for the simulation of the odors of other flowers. Sweet pea is made with jasmine and orange flower; hyacinth is counterfeited by jasmine and tuberose; lily of the valley by violet and tuberose. But the resources of the perfumer are by no means confined to the pomades, as the scented fats are termed. He uses many essential oils, the principal of which are sandal wood, bergamot, lemon, rosemary, neroli (made from bitter orange flowers), patchouli and ottar of roses. It is very difficult to get the last-named in a pure state, because its great cost tempts to dishonest adulteration. Very often rose-geranium oil is substituted for it. Musk is another important ingredient, entering, as it does, into almost all perfumes, except those which are actually imitations of flower odors, or, as styled by perfumers, "natural," as, for instance, heliotrope, tuberose, white rose and violet.—*Boston Herald.*

Arboriculture.

Use of Bamboos in Tree Culture.

EDITORS PRESS.—In my letter on bamboos I omitted one of the most valuable purposes for which the hollow canes can be used. By the use of these canes any novice can raise the most delicate of the eucalypti, or any of the conifers that are most difficult to transplant, can move them any distance, transplant any number of times, and at any season of the year with perfect security against loss of trees, or even of retarding their growth in the handling and transplanting of them. The method of proceeding is as follows:

Select thin-shelled canes, from the tops, or from young bamboos whose growth has been stopped by frost before the shell has become thick, hard, and woody, cut these into uniform lengths for each variety of tree to be propagated—eight inches is sufficient for tea trees, most of the acacias and eucalypti, while 20 inches or two feet in length may be necessary for some of the nut-bearing trees or conifers that make a rapid growth of tap root. Set these canes closely together on end in a box. Fill them with good soil; in the top end of each cane so filled plant a couple of seeds of any tree that is difficult to transplant, set the box containing these so that an inch of the lower ends of the canes shall stand in the water; this will supply abundant moisture for the germination of the seeds. When the trees have attained sufficient size, cut off the smaller of the two, if both seeds in a cane should grow, and then plant the cane with the tree in it, just where you want the tree to remain permanently. The growth of the tree will split the bamboo cane inclosing it without any retarding of its growth or deforming of its roots, while all the time it keeps on as rapid and symmetrical a growth as though it had never been transplanted.

Our native Sabinis pine, a beautiful and desirable tree that grows as readily from the seed as corn or beans, but which is almost unknown under cultivation, on account of the difficulty of transplanting it without loss of tree or deforming or very much retarding its growth—this tree, by planting the seed in bamboo canes a couple of feet in length, that would perfectly preserve the long, rapidly-growing tap root, can be transplanted with as much ease and safety as a peach tree; the same is true of our majestic and rapid-growing *Sequoia gigantea*, a tree that is the pride of our State, the most desirable for culture, for shade, for adornment or value of timber, and that will grow in all varieties of soil and endure all vicissitudes of weather in the habitable portions of our State, and yet that is almost unknown, except as heard of growing in the Calaveras, Fresno or Tulare "big tree groves." Not 10% of the people of our State know the looks of these trees. Among the finest homes and collections of trees in our State where grow all that is "beautiful to the sight or good for food," these most desirable trees can be counted scarcely by dozens. And why? I have taken the pains to ascertain what became of the *Sequoias* sent out by a certain nurseryman, who for a number of years paid considerable attention to their propagation. Not half of the trees ever lived after transplanting, and only about 5% developed into active growth and became objects of beauty and value, as all might have done had they only been planted and transplanted in the hollow bamboo canes as I have described for the successful handling of Sabinis pine.

One man can saw the bamboos into lengths (by confining them in a box can saw 50 at a time), punch out the pith of the joints, fill the canes with dirt, plant the seed in them and set them in place to germinate the seeds—can do all the work, in short, taking the bamboos from the grove, and the seeds of the tree to be propagated from the sack, and can plant 1,000 trees per day; and the thousand trees so produced—trees with entire roots and that will go on with unchecked, rapid and symmetrical growth—and in their bamboo casings are as easily transplanted as grape cuttings. A thousand of such trees are worth 5,000 of such as are ordinarily produced and sent out by nurserymen.

Sanders, Cal. W. A. SANDERS.

[This method of tree growing is recommended in the Australian forestry reports.—EDS PRESS.]

WEIGHT OF AIR.—A cubic foot of air weighs 538.1 grains, or something over 1 ounce; 13.06 cubic ft. weigh one pound. About 65 cubic ft. of air furnish 1 pound of oxygen. An apartment 8 ft. high, 12 ft. wide and 13 ft. long contains about 100 pounds of air: and a room 40 ft. square and 18 ft. high contains about a ton.

THE EYES.—Avoid glaring and glancing lights in the rooms where you read, sit or write. Mirrors which strongly reflect the light in a room are very bad for the eyesight, and produce evil results at last. A very bright carpet, even, is bad for weak eyes. Use cold water freely in the morning after sleep.

ALFALFA.—W. E. Pabor, associate editor of the *Colorado Farmer*, Denver, has written a little pamphlet concerning alfalfa for gratuitous distribution. It is an interesting little *brochure*, and will, no doubt, extend the growth of alfalfa in Colorado.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

Neighborhood Insurance.

Editors Press: We have been thinking about some plan of insurance by which owners of agricultural property could combine to insure among themselves, and at such property is not likely to burn, get the insurance at a low rate. If you have any data concerning the formation of such organizations, please advise us. Reader, Sonoma county.

We have received from Grangers several inquiries covering the above points, the aim being to secure neighborhood insurance, through the Grange organization, at little cost for office expenses, etc., and at low rates, as the risk is small. The best we can do is to give the plan of an organization which exists in the county whence we came to California. The following is a copy of the policy, constitution and by-laws of a company now in actual working order:

The Fire and Lightning Insurance Association of the town of Western and adjoining towns, of Oneida county, State of New York.

This policy witnesses, that ———, of ———, Oneida county, New York, having complied with the rules and regulations of the above-named association, is declared a member of the same, and is hereby insured against loss by fire or lightning, to the amount of —— dollars, for the term of five years, upon the following property, viz.:

	Amount
Dwelling house, and wood house, if attached	——
Contents	——
No. 2 house	——
No. 3 house	——
No. 1 barn	——
Contents	——
No. 2 barn	——
Contents	——
No. 3 barn	——
Contents	——
Horse barn	——
Contents	——
Corn barn	——
Contents	——
Hog house	——
Horses	——
Cows	——
	——
	——
	——
	——

Subjected to the terms and conditions set forth in the constitution and by-laws of said association, as found below. And the said association does hereby promise and agree to make good unto the said insured, ———, h— heirs, executors, administrators and assigns, all such loss or damage, not exceeding in amount the sum insured, nor the interest of the insured in the property.

In case of loss or sale of property, notice to be sent immediately to the secretary or directors. Property not to be insured in any other company after date of this policy.

Constitution.

The undersigned, inhabitants of the town of Western and adjoining towns of Oneida county, and State of New York, met and associated together for the purpose of making insurance against fire and lightning on farm property owned by the undersigned; and, in order to organize and commence, we this day, June 16, 1877, held an election and have elected the following-named persons directors for the period of time and terms hereafter specified, viz:

Israel White and Joseph French, for the term of three years; Wilson B. Parmelee and Lewis B. Van Wagenen, for the term of two years; and Otis P. White and Philo Remore, for the term of one year from the second Saturday in June, 1877, at which time an election shall be held for directors, whose term of office shall continue for the term of three years; so that the board of directors shall always consist of six members.

Each member shall have one vote at any election for directors.

No member can vote by proxy, except in cases of sickness or the person being a female.

The voting shall be done by ballot or voice, as a majority of the members present may dictate. Any member may be elected or re-elected as a director.

We, the undersigned, promise and agree to be governed by this constitution and by-laws, and to pay all proper assessments made by the secretary.

By-laws.

Section 1. This association shall be known and styled by the title of "The Fire and Lightning Association of the Town of Western and Adjoining Towns," and shall by that name keep its accounts, make its agreements, contracts, etc.

Sec. 2. The directors shall immediately appoint a secretary, and shall have the power to appoint an agent, who shall have as full power to insure as the directors themselves. The directors may, if necessary, appoint a member of the association as treasurer.

Sec. 3. To entitle an individual to membership in this association, to receive and hold a policy, he or she shall pay ten cents on every hundred dollars of the valuation to the secretary and treasurer, if one is appointed.

Sec. 4. This association may make limited insurance on all kinds of farm property against unavoidable fire or lightning.

Sec. 5. No property will be insured under one hundred dollars valuation. The property holder may make the valuation, but if the directors or their agent deem it too high, they are not bound to take higher than in their judgment they think proper and just.

Sec. 6. If any member wishes to withdraw or take his or her insurance out of said association, he or she shall and must take his or her policy to the secretary and request his or her name to be marked "voluntarily withdrawn," but may not do so until all dues are paid by said member. He or she may at any time afterwards be entitled to membership.

Sec. 7. In case a member refuses to pay any assessment which may have been imposed on him or her by the legal officers of the association after 60 days, he or she shall be discharged by the secretary cancelling his or her name from the book containing the constitution and by-laws, and his or her account in the account book shall be marked "unfaithful," and he or she shall cease to be a member forever, until all dues are paid by him or her.

Sec. 8. If any property that is insured in this association be destroyed by unavoidable fire, the owner of said property shall immediately inform the directors, and said directors shall, within three days, go to the place and examine whether the loss is as much as the insurance that has been made on it, and said directors shall immediately settle the rate per centum of assessment to be made according to the loss or insurance, which is to be paid by the members within 30 days into the hands of such person or persons as may be named by the directors.

Sec. 9. The directors shall, within 10 days, report such loss, give written notice to the members when, and also what percentage they are to pay, in order to give every member a full knowledge how much and to whom it is to be paid.

Sec. 10. As soon as the time specified in the eighth section for the payment of an assessment has expired, the loser of said property shall call on said person or persons who have received the money, and said person or persons shall pay over to said loser of property all the money that he or they have received by that time, and said loser shall give a receipt on account to said person or persons; and for all money received after the 30 days for said loss, a receipt as soon as convenient shall be taken as before mentioned. In case any member should neglect to pay within 30 days, the directors shall appoint a person to collect said monay with 10% added to the assessment, and see said collector paid in a way they think proper.

Sec. 11. In case of death or resignation of either of the directors, the remaining directors shall appoint and fill such vacancies as often as they may occur, till the next annual election.

Sec. 12. The directors shall have the power to carry on the business of insurance in the county of Oneida, State of New York.

Sec. 13. The directors, or their successors in this association, shall not sue or use any compulsory means by law to make members pay or comply with the rules and regulations of this association; neither shall any member have the right to sue the directors, as no lawsuit can be tolerated in any shape or form; and no member is bound to these articles further than by his own conscience.

Sec. 14. The directors, agents and officers necessary to carry out the provisions of the aforesaid constitution and by-laws, shall receive such compensation for their services as the board of directors may deem just and right, and likewise all other necessary expenses, if sufficient, and if not, a tax shall be laid on the valuation sufficient to defray all expenses.

Sec. 15. The aforesaid articles cannot be changed or altered, except by two-thirds of the members present, and ten days' previous notice must be given at eight of the most public places in the town of Western. The said notice must be signed by twelve members, and also the section or sections intended to be changed or altered must be designated in said notice. The directors may make additions to the foregoing by-laws for their convenience, but not so as to alter or change the meaning of the foregoing articles.

Sec. 16. The members shall, at all times, have the privilege of examining the book or books belonging to the association.

Sec. 17. No property shall be declared insured by this association unless said association has insured property to the amount of $100,000, and no member shall be entitled to a policy unless said association has insured said amount.

Sec. 18. If any director should manifest any dishonesty as regards the management of said association, the other directors shall have power to investigate the case; and, if found guilty, he shall be expelled from the board and another member shall be appointed in his stead, until the next annual election.

Sec. 19. If a building or buildings should be destroyed, the fire originating from ashes kept in wooden vessels or boxes, such loss shall not be recovered by funds of this association.

Sec. 20. If a building or buildings should be destroyed, the fire originating from a locomotive engine, such loss shall not be covered by the funds of this association, except the loser or owner of said property cannot recover from the railroad company, then and in such case this association shall pay such loss.

Sec. 21. This association shall take no risk on buildings owned by different individuals that are less than 75 ft. apart. And any officer or agent insuring property contrary to this article, the fund of this association shall not be used to pay for the loss of such property.

This policy is made and accepted upon the above express conditions.

——— President.

——— Secretary.

The following is a blank form of application for insurance:

Fire and Lightning Insurance Association, of the Town of Western and Adjoining Towns.

Application of ———, of ———, in the county of Oneida, State of New York, for insurance, not to exceed two-thirds the value of the property insured, in the Fire and Lightning Insurance Association, of the town of Western and adjoining towns, against loss by fire or lightning, in the sum of ——— dollars, for the term of five years:

	Amount.	Size of Building.
On Dwelling House and Woodhouse if attached	—	—
On Contents	—	—
On No. 2 House	—	—
On No. 3 House	—	—
On No. 1 Barn	—	—
On Contents	—	—
On No. 2 Barn	—	—
On contents	—	—
On No. 3 Barn	—	—
On Contents	—	—
On Horse Barn	—	—
On Contents	—	—
On Corn Barn	—	—
On Contents	—	—
On Hog House	—	—
On Horses	—	—
On Cows	—	—
Total	—	—

The animals to be insured against fire or lightning on said premises, for not more than seventy-five dollars on each horse, and twenty-five dollars on each cow, and not more than two-thirds the cash value of any animal.

This association is limited to Oneida county, New York.

Property situated in the town of ———, Oneida county.

To entitle an individual to membership in this association, and to receive and hold a policy, said individual shall pay ten cents on every hundred dollars of the policy; premium to be paid on making application.

In consideration of being insured for the term of five years in the Fire and Lightning Insurance Association, of the town of Western and adjoining towns, I, ——— ———, do covenant and agree to be governed by the constitution and by-laws of said association, and to pay all proper assessments made by the secretary on my policy.

——— Applicant.

——— Agent.

Agricultural Notes.

CALIFORNIA.

COLUSA.

Crop Prospects.—*Sun*, March 25: We think the crop prospects of the county continue good as a whole, although many farmers contend that the ground is not wet enough to make the crop without more rain. The wire-worm is doing considerable damage, also, on some of the sandy lands. In some districts it is complained that the weeds will choke out the wheat to a great extent, and that there will be a good deal of foul grain in the market. A few more weeks now will determine the matter for us.

CONTRA COSTA.

More Grape Planting.—*Gazette*, March 25: It is pleasing to note the unusual interest manifested by the farmers of our county this season in the planting and cultivation of orchards and vineyards. It is evident that a new departure is about to be taken, and that less grain and more fruit will be the rule hereafter. The result will probably be additional prosperity to all who are taking active steps in that direction. The latest instance of vine planting is that of Mr. W. Z. Stone, of Green Valley who is about to plant 2,000 cuttings of the Muscat variety, 2,000 of Tokays, 1,000 of Moravios (?), and 600 cuttings of other varieties. Mr. Stone has this spring set out 200 Bartlett pear trees, and planted 400 pounds of almond, peach, and apricot pits. His large almond orchard is in a flourishing condition, and promises a fine yield for the coming summer.

FRESNO.

The Outlook.—*Expositor:* The heavy rains of last week have put a bright aspect on the face of matters in this section. Those farmers who have put in crops, or rather who worked whether their land plowed easy or hard, are especially jubilant, as they fondly anticipate reaping good crops. The general report from all the farmers that we have conversed with is that, with ordinary spring rains, their crop will be as good or better than last year. The sheep and stock raisers, too, are elated, as they are now certain of plenty of grass, though coming a little late. So, with visions so bright before us, there is no wonder that the Fresno county boom continues.

Hay.—The unpleasant spectacle is witnessed in this county to-day of farmers of this section importing hay by rail from San Francisco. There is really no excuse for this. There should have been enough hay raised in the county to meet all demands. It is true that those who are importing hay are new comers, and therefore not responsible for the shortness of the home supply. Those who were here, however, could have had all the hay requisite with but little extra exertion. The acreage devoted to alfalfa in this county is far too small.

KERN.

The Outlook.—*Record*, March 23: Our mountain farmers who had resolved to do no planting this year, now think they may have the most favorable season known since 1875. On the island, where drouth has no terrors, many are disposed to give attention to the banks of the different river channels, remembering that the floods of 1867 came from the warm March rains. The flocks which have been fed on the alfalfa hay for months past, many of them fed scantily, have been driven towards the foothills, where the grass shows some signs of life, and only awaits a warm sun to prove an abundance. Altogether the promise is a fair one for as good a season of feed as has been known for years.

LOS ANGELES.

Vine Planting.—*Commercial:* The present planting of grapevines is the most extensive ever known in the history of California. One difficulty in planting so late is the impossibility of getting cuttings of the Mission variety. It was not supposed that this kind of cutting would be needed, and so our vineyardists did not prepare them in large quantities. There appears to be an increased demand for the old Mission grape, which is coming again into favor on account of its many valuable qualities. Had the winter rains come earlier, while pruning was in progress, those who needed mission cuttings could have had enough to plant an empire; but at that time the weather was so dry that a large number of planters declined to purchase for fear they would not be able to plant, and the cuttings were not preserved.

Green Peas.—As a specimen of profitable farming on a small scale, the following instance of Pasadena crops makes a good illustration. On the lands of Woodbury Bros., near the mountains, a good crop of barley was harvested last summer. In the fall four acres were rented for a crop to a German gardener, who merely made furrows about three feet apart, across the tract, and run a stream of water through them. He then planted peas in the wet furrows, and gave no cultivation to the land at all. In January and February he gathered and shipped the crop of peas in the pod to San Francisco, and realized $600 for his peas on four acres of land on which he never spent a week of labor. This shows what our high mesas will do when they are planted intelligently. There is plenty of room for more crops like this.

Activity at Anaheim.—*Gazette*, March 25: A couple of weeks ago the farmer thought his season's work was done. Thoroughly discouraged, he had put away his plows, staked out his horses, and idly faced with more or less patience the long, dull, dry prospect before him. The grass was withering in his fields, the land which he had cultivated with the expectation of planting vines was lying yellow and parched —in short, his operations were completely and thoroughly checked by the absence of rains. Such was the condition of affairs in many parts of the country on the morning of the 12th inst.; but how different it is now! Then, idleness; now, activity. Then, despair; now, hope. The three inches of rain have not only completely changed the face of Nature, but have changed the nature of men as well. It has infused new life and energy into every one, and the change is all the more appreciated because it came so unexpectedly.

MENDOCINO.

Hop Notes.—Covelo Cor. Ukiah *Press*, Mar. 24: Hop growers just now are very busy when the weather permits, clearing up their grounds, getting out poles and setting out their new plantings. Mr. Felix Purcell, one of the oldest and most successful hop growers in this valley, is preparing to erect a new drying house. The building will be 40x50 ft., 30 ft. high, and will be ready for use the coming season. Mr. Purcell has 20 acres in hops, which he has rented this year on shares, intending to give most of his time to the curing and preparing of hops for market. This improvement has been much needed, and will encourage cultivation in that line, much to the credit of Mr. Purcell. Summing up the interest of this valley in this branch of industry, we may state that Joel Eveland has in cultivation 20 acres; F. Purcell 20 acres; F. M. Van Dyke 10 acres; S. Hornbrock 5 acres, and the reservation 30 acres, a total of 85 acres. Of the new plantings this season, Lindsey Williamson plants 20 acres; G. B. Walker 15 acres; W. T. Melindy 5 acres; G. P. Hand 5 acres; total number of acres of new plantings, 55, which at the end of the season will show 150 acres as a grand total. And there are still hundreds of acres of the best hop land in this valley remaining untouched. All who have been in this business the last five or six years and stuck squarely to it, have made money, and they have hardly commenced as yet to develop the resources of the valley in this direction. Poles in abundance can be had from the willow thickets which abound in the valley, and we opine the time is near at hand when hops, as our great staple, will exceed wool in the amount of income and the profits that will accrue thereon. And still there is a fine opening for a few enterprising men of moderate means to come in here and enter upon this business, with a sure and handsome profit in a period of five or six years. The climate and water in the valley are of the best, and our hops rate No. 1 in the market, with a large yield per acre.

MERCED.

Crop Prospects.—Valley *Argus*: Since the close of the late rains, the prospects for a harvest in this valley are wonderfully improved, and though the young grain is small, much of it up just enough to show a little green on the ground, yet farmers feel assured of a fair yield of grain unless the weather from this time to maturity of grain is more unfavorable than usual. Of course, a total lack of spring rains or the prevalence of devastating northers in April and May, would cause a failure; but now the ground is well saturated, and the warm days of this week have given an impetus to the growth of crops that will cause them to make a good show by the first of April, and if the weather is favorable for the next ten weeks, the San Joaquin valley will contribute its full quota of grain this year for shipment to the European markets. And should we be favored

with four or five inches of rain in the growing season at proper intervals, the year's operations will not be less profitable than last year or the year before.

SONOMA.

OLIVE PLANTING.—Santa Rosa *Democrat:* A novel experiment is being tried on the Yulupa farm in Bennett valley, by the proprietor, Mr. De Turk. He is now setting out 2,000 olive cuttings. The cuttings are about 14 inches in length and one inch in diameter. They are set on end in trenches about a foot apart, and are covered over with soil, the top of the cutting being an inch below the surface. They are left in this position for two or three years. Within this time the roots will strike, and they will be ready for transplanting. If the cuttings succeed, it is the intention of Mr. De Turk to set them around the outer lines of his large vineyard.

VINE PLANTING.—*Republican*, March 23: An interesting fact, showing the progress we are making in developing the resources of Sonoma county, is the steady increase, year by year, in the area of our vineyards. R. A. Thompson, Esq., has in course of preparation an exhaustive paper setting forth the varieties and acreage planted in each township since 1879 up to and including 1881, from which we are permitted to furnish the following:

Acres of vineyards, 1879	7,248
New vines planted that year	494
P anted in 1880	1,353
Planted in 1881	2,499
Total acreage	11,594

In addition, the planting of 1882 will add to the above, we believe, much more than that of 1881. The largest grape-producing township is Sonoma. Mr. Thompson estimates the area of vineyards there, bearing and non-bearing, at 6,293 acres, of which 1,480 acres are Zinfandels, 2,448 acres Missions and 1,365 acres of mixed sorts. Santa Rosa township is next, containing 2,227 acres, of which 771 are Zinfandels, 501 acres Missions and 955 acres mixed varieties. In Mendocino, Washington, Knight's Valley and Cloverdale townships, soil and climate equally favor the growth of the vine, and there is great activity in planting. The experiments of Mr. Bihler, of Vallejo township, have stimulated increased planting there and toward the coast, where it is found, as at Chenoweth's, near Occidental, at Joe Coburn's, on the ridge in sight of the ocean, and far north into the new and undeveloped rolling pasture lands, once ruled by Tom Trosper and Tennessee Bishop, that the country is good for something besides producing cinnamon bears.

SAN BENITO.

BETTER WATER PROSPECTS.—Hollister *Democrat*, March 24: Up to Thursday, 8th inst., the rainfall here had not exceeded 4¼ inches; since that time we have had 6⅝ inches of rain, and still storming. Most of the farmers here have sown considerable crops, though not so extensive as last year. Some have put off sowing on account of its being too dry, and now it is rather late to sow and expect a crop. Some of the volunteer wheat looks quite well.

SAN LUIS OBISPO.

SHEEP.—*Tribune*, March 25: The sheep-clipping season is near at hand. The spring clip will doubtless be lighter than usual. Short feed will make short fleeces. All in all, the season has been a very poor one for sheep men in southern California. The wool will be short in growth and lacking in many of the qualities of first-class wool. While our sheep men have suffered nothing in comparison with those of neighboring counties, still their returns will show a marked decrease from those of last year. The mortality among the lambs will materially lessen the percentage of increase to the flocks that would have been realized had the season been favorable. But with all the drawbacks and losses, most of the sheep men have reason to congratulate themselves that the result is no worse than it is. The prospect was sufficiently dismal a few weeks ago to make even the slightest change for the better very acceptable. The outlook at this time is exceedingly favorable; indeed, it may be said that all danger is passed for this season.

TEHAMA.

NOTES.—EDITORS PRESS: I have just returned from the great agricultural district of the Sacramento valley, over 300 miles long, and of considerable breadth. Red Bluff, a city of no small importance, has fine solid brick buildings, and some few dwellings likewise. There are some improvements around those dwellings, though not commensurate with the surroundings. There are extensive sawmills, in connection with six in the hills, connected by a 60-mile flume. Many sheep are raised, and very fine beef, young and tender, is slaughtered in the stalls here. A much larger population around is needed in the county as well as elsewhere through the valley. The ranches are too large, consequently the country is only sparsely settled. The number of Chinese employed is fully equal if not greater than whites employed. Chico city is more populous, being set down at 4,000, being 500 more than Red Bluff. Chico is imbedded in trees, so that the houses can hardly be seen one block away, which must tend to make it more malarial, which is the trouble with all this valley, more or less. The grain fields throughout seem very backward, showing the severity of the winter. The fields are not yet green, with few exceptions. Even volunteer is backward. About Lincoln and elsewhere pasture is short. Many fields where plowing had been commenced were evidently too wet, as pools of water stood numerously on those lands, thereby preventing their cultivation, which will in all probability be summer-fallowed. Late showers will be much needed, as crops now appear; being comparatively backward.—M. J. O'BYRNE.

SOLANO.

EDITORS PRESS:—We are having one of the finest seasons that I have seen in 25 years. We have had about 11 inches of rain already, and if anybody had the making of this season, he could not have bettered it much for our county in general. Some people's grain stands two ft. high; that is, summer-fallow. The winter-sown is doing finely. It has been very warm for the last few days. We have had hard battles to keep the ducks and geese from devouring our crops. They are here by millions. It almost takes a man and dog and gun to a quarter section to keep them off. You can put up scare-crows or scare-geese; they will come and light down in the shade of them. Nothing but powder and lead will scare them. People are very busy cultivating their orchards and vineyards in this section. Ranches are offered for sale cheap. People who sold out and went to other parts are now sorry that they left. We are close to market, being within three or four hours of San Francisco. If we have anything to sell, even a sheep-skin or a cow-hide, it almost commands the city market price. Our country in and around Binghamton has a great advantage over other parts of the county, on account of navigation. We can ship by water or by rail. Maine Prairie is our shipping point by water; one of the finest in the State. They pay more there for grain than at the railroad, and about the same distance to haul it. They are about ready to commence summer-fallowing, and will be at it next week if the weather is favorable.—G. A. B., Binghamton.

Academy of Sciences.

The regular semi-monthly meeting of the California Academy of Sciences was held on Monday evening last; Vice-President Behr in the chair.

The following were elected life members: William T. Coleman, Henry T. Scott; resident member, Arthur A. Smith.

The following were proposed for life membership: Jacob Z. Davis, James H. Goodman, Hermann Schussler, Winfield S. Keyes, John W. Ackerson; for resident membership, Prof. J. J. Rivers, Daniel E. Hayes.

Donations to the library included a large number of valuable publications and exchanges.

Donations to the museum were received from Dr. Arthur B. Stout—a Gila monster, or species of large lizard; two horned toads from Arizona, (prepared and mounted); one basket star-fish from the coast of California, and specimens of asbestos from the Tyrol. W. G. W. Harford presented two species of variegated lizards, from the Arizona desert. Captain R. W. Simpson, a shark's jaw. J. H. Mahoney, a loaf of bread, made by the Navajo Indians of black corn. Prof. Henry A. Ward, a photograph of the *Elephas Primigenius*, in the Royal Museum at Stuttgart. Frank Monk, of Monterey, Cal., presented, through B. B. Redding, a mass of fish eggs on sea-weed. They are from fish of the perch family. A large blackboard drawing was made by Dr. Albert Kellogg, and Mr. Harford called attention to the peculiar glutinous material by which the eggs are attached to the sea-weed, showing it to be a tenacious, transparent and viscid substance. The sea-weed was a species of black *algæ*.

A. W. Jackson, Jr., instructor in Mineralogy at the State University, read a paper on "The General Principles of the Nomenclature of the Massive Crystalline Rocks."

A short paper on the increase of temperature with depth, by Chas. Forman, of Virginia, Nev., was read. This we give in another column.

Dr. H. W. Harkness presented a fine specimen of a new fungus, allied to the puff-balls, found by Mrs. Dr. Curran near Fort Point, which is the first of this genus ever found on this coast, and which he named *Polyposium Curranii*, in honor of the discoverer.

Pacific Coast Weather for the Week.

[Furnished for publication in the PRESS by NELSON GEROM, Sergt. Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending 11:58 A.M. Wednesday, Mar. 29th, at noon, for the stations named:

	Olympia.	Portland.	Roseburg.	Red Bluff.	Sacram'to	San Francisco	Visalia.	Los Angeles.	San Diego.
Thursday.	.01	.00	.00	.00	.00	.00	.00	.00	.00
Friday....	.07	.06	.00	.00	.00	.00	.00	.00	.00
Saturday.	.03	.03	.00	.00	.00	.00	.00	.00	.00
Sunday ..	.11	.13	.06	.06	.00	.00	.00	.00	.00
Monday ..	.06	.03	.00	.00	.00	.00	.00	.00	.00
Tuesday ..	.22	.07	.00	.00	.00	.00	.00	.00	.00
Wed'sday.	.07	.00	.00	.00	.00	.00	.00	.06	.00
Totals	.57	.32	.06	.00	.00	.00	.00	.06	0.00

SILKWORM EGGS.—Felix Gillet, of Nevada City, Cal., writes us that he will send free to all who may send him a three-cent stamp, a few silkworm eggs to begin with on a small scale—say 400 or 500 eggs. This will help those who desire to try their hand on home silk culture.

News in Brief.

GUZMAN BLANCO has been re-elected President of Venezuela.

AT Chicago there were eight new cases and six deaths Saturday from small-pox.

THE *Levant Herald*, an English daily newspaper in Constantinople, has been suppressed.

THE present intention of the Chinese government is to make an initial imperial railway from Tientsin to Peking.

LONDON society is deeply interested in ladies' hygienic lectures, under the auspices of the National Health Society.

A GREAT many persons have applied for land on the A. and P. road, in the San Francisco Mountain country, A. T.

MEASLES has been raging among the immigrants in the Deadman country, W. T. There were 11 cases in one house at the same time, and two deaths in one day recently.

OFFICIAL dispatches from Vienna report that small bands continually start up in all parts of Herzegovina, and retire on the approach of troops. The insurgents never assemble in large bodies.

THE Southern Pacific is now completed 245 miles east of El Paso, which is more than half way to San Antonio, as over 100 miles of the road have been completed on that end of the line.

THE Japanese press is agitating against the admission of foreigners to the interior and to business partnerships with natives—measures proposed by England in connection with the treaty revision.

INTELLIGENCE from Tashkend states that a protocol providing for the surrender of Ili territory to China had been signed, the inhabitants wishing to emigrate to Russia, to be under the protection of Russian troops.

IT is thought that a town will spring up at Beale's spring, on the line of the Atlantic & Pacific railroad. There is plenty of living water at that point, and it will be a center for all the mining districts of northern Arizona.

REGULAR trains are running over the famous spot between Suisun and Benicia known as "The Sink," and everything works satisfactorily. Over 8,000 car-loads of dirt have been put in there this season alone, not to speak of the timbers and other material used.

A CONSIDERABLE engineering feat was accomplished in Philadelphia on Thursday week, when a new stand-pipe, an iron pipe lying along the ground, 156 ft. 6 inches long and 5 ft. in diameter, weighing 18 tons, was raised to an upright position and secured to the base casting in the ground on which it rests, and with which the main connects.

THE crossing of the Texas border by Gen. W. T. Sherman into Mexico, at Laredo, the other day, was made the occasion of a demonstration that may be regarded as significant. The bands on the Mexican side played "See, the Conquering Hero Comes," and "Hail Columbia," and the Mexicans shouted and cheered like wild men when the General took the hands of the Mexican officers.

Squirrel Killing.

EDITORS PRESS:—I send you a cheap and effective way of killing squirrels, and no patent applied for; a couple of little boys do the work, and there is no danger of killing valuable dogs or cats. One application generally settles the pests, if done according to directions. If any of your readers wish to avail themselves of its use, they are welcome to it. We use about 5 pounds of raw brimstone, which we melt in an iron pot; then we take a lot of old rags (sacks are the best) and tear them up in about 4-inch pieces, and, while the brimstone is boiling, dip the rags into it. As soon as cool, they are ready for use. Next, we take our dipped brimstone, a shovel and a hand-bellows—I had one made especially for this purpose; it is 16 inches across, as with a smaller one you can hardly get wind enough. We then set three or four chunks of brimstone on fire and push them down the squirrel hole as deep as possible. Then one takes the bellows and forces wind down the hole; the other boy takes his shovel and, when any smoke appears, packs the hole. We keep on forcing wind down until the sulphur is burnt up, then pack the hole as tight as possible. If it is not packed tight, the squirrel is apt to get out before he suffocates. In this way two boys, with the proper tools and 50 cents' worth of brimstone, can go over an eighty-acre field in one day and make sure of about 90% of the squirrels, without any danger to livestock.—GUSTAV BROWN, Los Gatos, Santa Clara county.

Volunteer Testimonials of Those Who Have Used Booth's Exterminator.

SAN LUIS OBISPO, CAL., Jan. 2d, 1882.

The effect of A. R. Booth's Squirrel Poison was thoroughly tested by me last week, and I would not be without it for any money. I used it for two days only, and every squirrel disappeared. Curiosity induced me to open one of the holes, where I found 13 dead squirrels. I can recommend it to all farmers.

FELIX MATTEY.

I have used the Squirrel and Gopher Poison of Mr. Booth's, and find it to do all he claims. Have used it on a small flat of four acres, riddled with gophers, and a week ago I could only see one gopher hill. I do not find the gophers or squirrels dead on the ground, but turn them up with the plow constantly. Yours, etc.,

HENRY DITMAS.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co.'s SCIENTIFIC PRESS PATENT AGENCY, No. 252 Market St., S. F.

FOR THE WEEK ENDING MARCH 14, 1882.

254,908—CAR TRUCK—A. A., E. & H. Blackman, Snohomish, W. T.

254,861—TOOL HANDLE—Thos. Bolton, S. F.

254,805—QUARTZ MILL—Jas. Day, S. F.

254,878—TRAIN BOATS—Wm. J. Little, Stockton, Cal.

254,996—HUB—A. McKellar, Fort Douglas, Utah.

254,885—TRUCK AND DERRICK—Alex. Robinson, Benicia, Cal.

255,031.—TELEPHONE EXCHANGE CIRCUIT AND APPARATUS—John I. Sabin, S. F.

254,892.—WELL BORING APPARATUS—Frank Whelan, S. F., Cal.

254,858.—GRAIN SEPARATOR—David Young, Stockton, Cal.

254,815.—LIFTING JACK—Chas. Gracey, Contention, A. T.

255,052.—SAFETY LAMP—Tingry & Siffait, Portland, Oregon.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast Inventors transacted with perfect security and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of special mention:

DRAFT-ADJUSTING DEVICE FOR HARNESS.—James Hugill, Woodbridge, San Joaquin county. This invention relates to an improved draft-adjusting device for harness, and it consists of a metallic end, into which the tugs or draft straps are fixed, and which has a spring-actuating sliding block near its front end. Through a hole in the front of the end piece, or box which is attached to the tug, a bar passes vertically and has its ends bent at right angles, so as to be secured to one side of the hames, which fits upon the collar. The bar is notched upon its front side, and the spring-block pressing against its rear side forces the notches against corresponding projections on the front of the box, so as to hold the bar at any desired point. By pressing the bar back, so as to release the notches, the tug may be moved up or down, and will thus change the draft to suit.

TRAIN BOAT.—Wm. J. Little, Stockton. No. 254,878. Dated March 14, 1882. The object of this invention is to provide a boat capable of navigating shallow waters. In low rivers in which the channel is tortuous it is impossible to use a single long boat, because it cannot follow the turns of the stream. It is therefore necessary to obtain the requisite length, while still making provision for the windings of the stream. For this purpose a train of short boats is made, each one being capable of turning independently, thus causing the whole line to adapt itself to the windings of the channel. The invention consists in providing supplemental rudders pivoted to each side of the rear ends of the boat sections, so that said rudders cover the space intervening between the sections of the boat and prevent a rush of water in between them when the train boat is in motion. The supplemental rudders also aid the main rudder in steering when required.

CUTTER AND PUNCH ATTACHMENT FOR ANVILS.—Geo. T. Childs, Lookout, Inyo county, Cal. This invention relates to that class of anvils designed to hold cutters or punches to be operated upon by the smith's hammer, wherein a bracket having a hollow head is provided with a tool-holding shank, to which is secured a cross-head, and beneath which are coil springs. The object of the invention is to provide a means for readily removing the tool-holding shank from the head of the bracket, and it consists in a bracket provided with a hollow head for the reception of a tool-holding shank, cross-head and springs, combined with a removable securing plate, whereby the tool-holding shank can be removed and replaced with facility.

COMBINED TRUCK AND DERRICK.—Alexander Robinson, Benicia. No. 254,885. Dated March 14, 1882. This invention relates to a combined truck and derrick, the object of which is to combine in one device both the lifting and carrying capacity, for convenience in removing weights and heavy bodies of all kinds. It consists in the employment of two separate trucks connected by the derrick timbers, which, by being hinged at the top, adapt the truck to separate or approach. This is accomplished by appropriate pulleys or cords. The trucks are separated on each side of a weight, and, by their approach, lift the weight between them and up on to their tops.

TOOL HANDLE.—Thos. Bolton, S. F. No. 254,861. Dated March 14, 1882. This invention relates to the attachment of small metallic tools and instruments to a holder or stock. The holder has a peculiarly-placed notch formed across it and the tool has a curved and flattened elastic tang to fit into this socket, the tool being thus held in place.

Saving Mother.

The farmer sat in his easy chair
Between the fire and lamplight's glare;
His face was ruddy and full and fair;
His three small boys in the chimney nook
Conned the lines of a picture book;
His wife, the pride of his home and heart,
Baked the biscuit and made the tart,
Laid the table and steeped the tea,
Deftly, swiftly, silently;
Tired and weary, and weak and faint,
She bore her trials without complaint,
Like many another household saint
Content, all selfish bliss above,
In the patient ministry of love.

At last, between the clouds of smoke
That wreathed his lips, the husband spoke.

"There's taxes to raise, an' int'rest to pay,
And ef there should come a rainy day,
'Twould be mighty handy, I'm boun' to say,
T' have sumpthin' put by. For folks must die,
An' there's funeral bills, and gravestuns to buy—
Enough to swamp a man, purty nigh;
Besides, there's Edward and Dick and Joe
To be provided for when we go.
So 'f I was you, I'll tell ye what I'd du:
I'd be savin' of wood as ever I could—
Extra fires don't du any good—
I'd be savin' of sope, an' savin' of ile,
And run up some candles once in a while;
I'd be rather sparin' of coffee an' tea,
For sugar is high,
An' all to buy,
And cider is good enough drink for me;
I'd be kind o' careful about my clothes,
An' look out sharp how the money goes
Gewgaws is useless, nater knows;
Extry trimmin'
'S the bane of women.

"I'd sell off the best of the cheese and honey,
An' eggs is as good, nigh about, 's the money;
An' as to the carpet you wanted new,
I guess we can make the old one du;
An' as for the washer, an' sewin' machine,
Them smooth-tongued agents' so pesky mean,
You'd better get rid of 'em, slick an' clean.
What do they know about women's work?
Du they calkilate women was born to shirk?"

Dick and Edward and little Joe
Sat in the corner all in a row;
They saw the patient mother go
On ceaseless errands too and fro;
They saw that her form was bent and thin,
Her temples gray, her cheeks sunk in,
They saw the quiver of lip and chin;
And then, with a wrath he could not smother,
Outspoke the youngest, frailest brother—

"You talk of savin' wood and ile
An' tea and sugar, all the while,
But you never talk of savin' mother?"

"Out of the Common."

And the sun-light danced in at the window, and turned her hair to shining gold; touched the crisp, gray locks of John Rogers, and made a friendly circle of light and warmth about the pair.

"I could not go against mamma's wishes, you know," the young lady said, gently, playing with the ring on her left hand. "She has had a long talk with me this morning, and though I knew she disapproved of our engagement, I never realized before how her heart was set against it."

"And you do not think by patient waiting—by proving how earnest we are—"

"No, John; mother cannot look on it as we do; she realizes all the disadvantages and none of the hopes that we have built on; and then—" the young lady glanced once more at her delicate hands before she continued—"would it be quite fair, John, for me to wait, and let all other opportunities glide by, and grow old and sad while I waited?"

John started. There was so much caution suggested in the words. No doubt she was but repeating them after her mother, but they fell chillingly on his ears from those young lips.

"It is true, Maud," he answered, with a look of pain on his face. "You shall not let other chances of happiness slip by because you are bound to me—a love which trusts and hopes in patient faithfulness. I am no longer young, dear, but I have risked much on this dream of love, coming late in life, but coming for the first time, Maud, and—" his voice broke—"staying with me—always."

He rose and turned partly away from her, quite still, leaning his arms on the mantlepiece. Maud Branson rose, too, and came toward him, her delicate, beautiful face full of concern. There was nothing about John Rogers to attract notice. He was a very plain man, no longer young; but he had at least some charm of mind or soul which had won the love of a very beautiful woman. Her dress hung in graceful folds to her slender figure, a fillet of blue bound the golden hair, which was coiled in classic simplicity about her head. He turned and looked at her, taking in all the details of the picture; then he put his head down dejectedly on his crossed arms.

Maud extended one hand appealingly.

"John, you will take it?"

"Yes, Maud," he answered, drawing his breath hard. "I take it—and renounce it." He patted the soft surface once or twice thoughtfully. "All that came with it, and all that goes with it. Maud, good-bye."

There was such a noble sadness in his face that it touched her. The proud head bent lower, until it rested on John Rogers' shoulder. She raised herself with eyes still wet.

"Good-bye, John. The world can't give just what we want."

"No dear. What is it?"

"Your ring."

He took the pretty sapphire ring he had placed on her hand one day, with only half-realized rapture, and slipped it in his vest pocket. It was worthless now.

And so John Rogers left the house and threaded his way down through the busy streets. The sunlight still danced over him, warm and beautiful, kissing his grave face, his hair, his hands.

"And let other opportunities glide by;" he repeated the words to himself ruefully. "It's not the old-fashioned love; not the love I used to dream of when I was a boy. Perhaps there isn't any better nowadays."

He looked very tired as he ran up the steps and rang at the door of his boarding-house. Clarice noticed it, his landlady's daughter.

"You look tired, Mr. Rogers," looking up from her work and speaking through the open door.

He smiled wearily.

"Do I? And what are you doing Clarice? Still sewing for those hardened little wretches?"

"Yes; isn't this a big hole I am darning? Boys do wear out their clothes so fast. You are home early from the office."

"Yes; I had an engagement at three, and did not care to go back. May I come in and have a chat with you?"

"Oh, yes, if you care to," with her quick smile, a smile which her eyes belied, and which always seemed to John "made to order." She pulled forward a chair without rising, and went on with her darning again. "I sit in here because it's cool, and I always do my sewing afternoons; in the mornings there is housework."

It was a shabby little parlor, seldom used by the boarders, who were principally gentlemen, and spent their evenings out, if not in their own rooms. A few tawdry decorations only enhanced in the shabbiness of the threadbare carpet, dirty walls and ancient lace curtains.

"Do you never have any amusements, Clarice?" asked John, trying to forget his own wretchedness by interesting himself in some one else.

"Amusements?" she repeated, pushing the curls off her forehead in a puzzled way. "Oh, yes; there is a Mr. Jones; he plays the piano; and once Mr. Aikens, the elocution teacher, read a piece, and all the boarders came in."

John smiled, eyeing the little maiden pityingly as she stitched away. She looked up suddenly and caught his eye.

"We did not always keep boarders," she said, proudly, reading something there she did not like. "When I was at school, we were well off and had a nice house; but mamma is a widow with eight children, you know, and I have to help her about the work."

"I know," said John, kindly looking at little Clarice with so much sympathy that she quite warmed toward him, and continued confidentially,—

"Once I had a beautiful time—that was a good while ago—a girl I knew at school hunted me up, wrote to me and invited me to visit her. It was in Philadelphia."

"And did you go?"

"Ah, yes; and it was a beautiful time!" Then, her face falling, "but I had to come home. It was all over in three months."

"Ah, that was hard," sympathetically.

"Yes, it was, Mr. Rogers," taking up another jacket, and beginning a new hole. "For they were rich, you know, and it was quite like old times—their nice house and all—and then come back here—the noise and the children, and clearing up the rooms—it was worse after that. But perhaps I shouldn't have minded if it hadn't been for—there was something worse than all that," continued Clarice, working hard at the jacket with crimson cheeks.

"Will you tell me about it?" asked John Rogers, very kindly, his honest gray eyes softening. "It does one good sometimes to tell one's troubles, and I am so much older than you."

Clarice looked up, quite gratified at this unexpected sympathy.

"I will tell you, Mr. Rogers. It was when I was in Philadelphia that I met Harris—Harris Bell—and I was—so different there, at the parties I went with Fannie, that he thought I was pretty, and he told me so, and said that he loved me, and wanted me to be his wife. I had a pretty white dress, you know," timidly, and glancing blushingly down at her present faded calico, "and wore flowers—and—you can scarcely understand it."

"Yes, I can understand it," said John noting the light in the brown eyes and the newly acquired color. "Tell me the rest, Clarice."

"And we were engaged—and I could scarcely believe it—but I was very happy. He was such a handsome gentleman, too, and so aristocratic, and I did not mind the boarders, or anything, when I thought about Harris. So at last he came here to see me; and he saw mamma and the children, the house and the boarders, and I can't tell you how it was, but he was different. He didn't tell me he had changed, but he was restless, and it worried him, and I saw he cared. I am proud, Mr. Rogers, though we are poor now, and I broke it all up. It wasn't the love I had dreamed of. I had read a great many novels, and I thought life was a fairy tale and love was beautiful. I always used to think, 'when some one comes to love me I'll never be sad or vexed any more;' and Harris seemed all I wished for until I saw the house and boarders fretted him. For I had dreamed of a love that would be out of the common, and that when I went away with my lover I thought I, too, would be better, just as he wished me to be. So I told him, Mr. Rogers, it was all over, and he said perhaps we were not fitted to make each other happy. And then he went away, and the work and the noise and the boarders fretted me as they had never done before. For somehow, although I could not love him as much for treating me so, the thoughts about him and the dreams about him were all gone—and I missed them so."

"Poor child!" said John, tenderly.

"But it's all my own fault, Mr. Rogers. I expected too much. There is no such love as I have dreamed about, and mother says I did very wrong to break it off. She was very angry with me; but I knew these things would always fret him, and I could not bear it."

"Clarice, would it help you any to know that I, too, have suffered as you have suffered?" asked John, for two shining tears had dropped on the boy's jacket. "I, too, dreamed of love, and I found a woman whom I believed had given me that love; but because her parents found in me only a plain, poor man no longer young, she gave me up. She gave up faith and trust and hope because she had not the real love which you describe."

He stopped speaking; he had forgotten the little girl in her calico gown, and was gazing abstractedly out of the window, hard lines of regret and passionate despair written on his face.

Suddenly he felt a little, warm, soft hand laid gently on his, and Clarice said:

"Mr. Rogers, I am so sorry."

He wrung the little working hand, and then he rose and went to his room and gave way to his new sorrow.

Clarice folded her sewing and put it away; but it comforted her as she went about her evening duties that Mr. Rogers had listened to her story, and to know that he, too, had missed the love he had dreamed of.

Chapter II.

Several months had passed away. John Rogers had often found his way into the shabby little parlor and chatted with Clarice. Once he had found a bunch of flowers on his bureau, and no room in the house was such a model of order.

One day, as he sauntered into the parlor toward dark, hoping that his little friend would come with her basket of mending, and sit a while, he heard the rustling of feminine garments, and looking up saw that his landlady stood before him. Mrs. Dean was a woman who prided herself greatly on her former dignity. She wore a very long and dusty alpaca. It being no longer within her limits to trail silk, she trailed alpaca. Some persons are of this mold. Her hands which she folded majestically were very grimy. Rogers remembered with pleasure that Clarice was always neat.

"Mr. Rogers," began the lady with unusual dignity, "pray be seated. I have noticed for some time past that you have frequently, of evenings, found your way into my parlor, and passed the time in conversation with my daughter Clarice. I should not speak of this circumstance had not events which have already come to pass taught me to be guarded. Clarice is no longer a child, she is a woman, with all woman's readiness to love pathetically. You, though not a young man, are a bachelor, and I ask you as a mother to spare my daughter's feelings. As I said before, I should not have spoken of this, had not a circumstance which transpired this morning led me to beleive it was my duty, my most urgent duty. My daughter is in the habit of assisting with the housework, in cleaning and putting in order the rooms of my gentleman boarders. This morning I entered your room, expecting to find Clarice dusting—dusting with all the light heartedness inspired by a well-fulfilled duty," continued Mrs. Dean, waxing eloquent. "Imagine my consternation when I found her kneeling by the bedside, her face pressed against the pillows, in tears. She sprang up and tried to hide her agitation, but—Mr. Rogers, I am a widow with eight children, and a large house full of boarders. I cannot have you trifle with the feelings of my daughter. If you are not in earnest you must desist." And the lady applied a handkerchief to her eyes.

It is said by some people that poverty is degrading. It had certainly proved so with Mrs. Dean.

"Madam," said John Rogers with dignity, rising and laying his hand on the chair, "if I had not already learned to love your daughter, this tale might work upon my sympathies and appeal to my honor, but it could never make words of love pass from my lips that my heart could not echo. I cannot applaud your course in revealing your daughters emotion, and which she would no doubt bitterly regret. I love Clarice; she stole into my heart when it was sore and bleeding; and if I have awakened any response I am happier and more honored than I had believed."

He bowed with the gentle courtesy which John Rogers always used toward women, and passed out of the room, leaving Mrs. Dean very much relieved, but somewhat humiliated.

John entered his room and shut the door. He struck a light and turned on the gas, pulled down the shade and stood irresolute. Like one in a dream he went to the bedside and laid his head against the pillow. It was slightly damp. He sank down in a chair and covered his face with his hands. For a long time he sat there motionless; then he arose and took out his evening paper as usual.

* * * * * * *

It was a calm June afternoon.

"John," said Clarice, touching his arm with a certain timidity she had never quite outgrown, "life is a fairy tale, and love is beautiful, only it comes in a different way."

"And this is the love we have dreamed of." And John Rogers looked into the dewy brown eyes of the little girl in the calico gown, and putting his arms around her waist pressed her close to his heart.

And the sunlight glanced in at the window and touched the sweet lips learning to smile with heart content, and the grave, fond face of John Rogers. And it folded them in its embrace, warm and beautiful, bright and golden, and it glorified even the shabby little boarding-hourse parlor, and lifted it "out of the common."—*Barbara Cooke.*

The Question of Diet.

Editors Press:—Edward Berwick's "Hygienic Craze" has set Aunt Jerusha's friends ablaze. Seriously, eating and drinking so as to keep within the sphere of good health is one of the most important problems of life. It is both life and death. It is harmony and heaven, or disease, misery and hell generally, according to daily practice. Take, for example, a little child, pure and healthy, as it comes from its Creator's hand. A perfect human machine, you admit. How is it with that same machine when it reaches manhood, or old age? How many amongst the great mass of human beings arrive at the allotted span of life in good condition as to form and manly instincts? What has been the guiding cause of all the varied failures? "Eating and drinking," stands first and foremost as the great foe of harmonious blending of mind and matter. Nature stamps with her seal of condemnation all violations of temperance, as witnessed in gouty pains and dyspeptic gourmands. God gives us this command: "Keep pure and clean your body, for it is my temple." How is that temple to be kept clean by eating indiscriminately the greasy compounds of the table, both public and private? Pork was once cast into the sea as possessing a devil; and well had it been for the human race had they all perished there and then. [We dissent, most emphatically.—Eds. Press.]

The question arises, Are all men and women to be considered cranks who raise a warning voice against the vices of the age? If so, then we will be considered one of them, for we considered Aunt Jerusha's article timely and true. As a nation, we are almost cannibals, eating all kinds of flesh-meats, without one thought as to its effect on body or mind; the reminder coming in the form of some disease fighting for equilibrium, not always successful, owing to the cramming process so universally practiced. Your correspondent of Carmel valley seems to be full of "orthodoxy," as if it were orthodox doctrine to eat all God's creatures who live and have their being (under man), calling nothing "common or unclean." The very thought is enough to create the jaundice. For one, I consider the present system and practice of eating and drinking as one of the greatest sins of the age. And fearful are the penalties apparent, for Nature never forgives a violation of her hygienic laws, any more than her moral and spiritual. Each and every man and woman whose reason sits undismayed upon its throne, should be a law unto himself or herself. What is law to me in eating and drinking might not suit my next neighbor, a fact which should keep us from following any and all crazes upon every problem of life. Still, sometimes experience is a good school-master. So we might light up the beacon fires of thought, resulting in more wisdom and amended life. Hence we will write from our book of experience that life is sweeter, health more perfect, hope brighter, mind clearer, etc., since we gave up animal food. Eight years is long enough to test the accuracy of the principles involved. At 65 we scarcely feel the approach of age. We once suffered as a chronic dyspeptic, but by self-denial we have conquered the rascal. No more greasy food—no more animal eating for me. You of the orthodox faith may slay and eat, drink the warm blood of bulls and goats—grand food surely for the young heirs of immortal life and "tabernacle for the living God."

This question of diet is only in its infancy. Experience and suffering will bring it to the front as being the most important factor in religion; and until religion is made a matter of daily life very little good will be accomplished by profession. The world is full of blood-thirsty cranks by living so much on blood and grease. Appetite, we know, is a hard task-master; but they who would enjoy good health and a long lease of life should conform to the laws of temperance so far as to keep within the sphere of health and happiness. By animal food our passions are inflamed, gaining a mastery over the spiritual or better nature, which should be "God-like" in all its manifold relations to life in this sublunary scene, and with spirits pure, ready for the companionship of angels in the life to come.

O! leave your brandy, your rosy-hued wine, your greasy pork steaks, from the *purest* of swine. The cow and the calf, and the innocent sheep, for the milk and the fleece, they *may* do to keep. John Taylor.

Mt. Pleasant, March 15, 1882.

Mabel's Prayer.

[Written for the PRESS by E. FREMONT WOOD.]

It must be conceded that there is something beautiful in the complacent trust of an innocent little child. Surely parents cannot be too careful in the culture of their little ones while they are young and impressionable. A peculiar, but nevertheless true instance of childish trust in Providence came under the writer's notice a few days ago.

Mabel C——, a bright little girl aged five years, lives with her parents, in Oakland, Cal. Mabel, it appears, is very fond of visiting the home of a lady friend a few blocks away. One day during the recent rains, Mabel and her mother got ready to pay this friend a visit. When they were about to start it began to rain, and Mabel, with a countenance expressive of great disappointment, turned to her mother, saying: "Oh, mamma, why does Dod let it rain when he knows we want to go to Nellie's?"

"But God does not know we want to go to Nellie's," replied her mother.

"Why don't you hollo to Him then, and tell Him we do?"

"But that is not the way to ask favors of God, Mabel. You should get down upon your knees, like you do when saying your prayers."

Thus saying, the mother left the room on an errand. Upon returning she found her child kneeling by the window, her chubby little hands clasped in an attitude of prayer, and her sweet eyes turned heavenward. This is what she said: "Now I lay me—please, dear Dod, make it stop raining, so mamma and I can go to Nellie's!"

And strange to say, it did cease raining shortly after Mabel's prayer, and she and her mamma made their visit in the sunshine.

Oakland, Cal.

Always in a Hurry.

Reposeful women are a delight to their friends; one can almost forgive slovenliness when it is accompanied by an air of complete ease from care; an air which says: "I am always ready to talk with you or listen to your list of joys or sorrows." On the contrary, the woman who is continually "on the go" is extremely tiresome. We have before our eyes a girl who is a fair representative of the latter type. She is wasting her nervous force and her life in a lamentable manner. She expends enough force and energy in a day to last one so slim of stature for a week. Nothing she does is done slowly or deliberately. Always in the hottest possible hurry, her life seems to be wound up to the highest possible pitch. She dashes about the house, slams doors, and bolts her food in half the time that more sober people take to eat theirs. With her trifles are momentous; her tongue seems to be incapable of uttering a soft sound; her temper is all afire at a moment's notice; her adjectives are all superlatives; and sometimes she is ready to weep because she has no bigger and more expressive superlatives to use. Her energy, if properly engineered, would almost stem Niagara; she never moves except as if she were a Maud S. and going for a wager. Fervidness and rapture are daily food. Where will all this end? We answer—in the madhouse or the grave. It is the pace that kills; it is this pace which renders nervous prostration one of the most prolific diseases of the day. Let those of our women who are always intense take a thought for the next generation, in whom the seeds of this abnormal haste are being sown with fatal effect.

THE RIGHT KIND OF A MAN.—The man who can stand in the breach of universal public censure, with all the fashions of opinion disgracing him in the thoughts of the lookers on—with the tide of obloquy beating against his breast, and the fingers of the mighty, combined many pointing him to scorn—nay, with the fury of a drunken rabble threatening him with instant death—and worse than all, having no present friend to whisper a word of defense or palliation in his behalf to his revilers—but bravely giving his naked head to the storm, because he knows himself to be virtuous in his purpose; that man shall come forth from the fiery ordeal like tried gold; philosophy shall embalm his name in her richest unction, history shall give him a place on her brightest page, and old, yes, hoary, far-off posterity shall remember him as of yesterday.

SOME REPRESENTATIVE AMERICANS.—The theory that the human race will not be able to maintain a high order of physical development on this continent did not receive much encouragement at a recent social gathering of "tall men" in New York city. The "Titans," a society to which only gentlemen of position and of a stature not below 6 ft. 2 inches are eligible, now numbers about 100 members, largely representative of our oldest and best known American families. Seventy-three Titans sat down together at the recent annual dinner of the society. The tallest measured 6 ft. 6 inches. There were a dozen generals and colonels among them, as many prominent physicians, and a long list of distinguished lawyers and business men.

TWENTY-SIX members of the Petaluma Sportsman's Club recently spread out over all the hunting-ground within 20 miles of town, and at night they had the following game: Forty-three hares, 174 quail, 134 larks, 184 robins, 29 squirrels, 15 bluejays, 15 hawks, 8 owls, 25 ducks, 1 coon, 6 honkers and 20 snipe.

YOUNG FOLKS' COLUMN.

Science Club.—No. 6.

All communications for this department should be addressed "RURAL PRESS Science Club," Berkeley, Cal.]

The Nature and Use of Shells.

[By PROF. KEEP, Author of "Common Sea Shells of California."]

Few objects are more universally known and admired than sea shells. A few of them are found in almost every home; children use them for playthings, and older people treasure them as curiosities or use them as decorations. They are the blossoms of the sea, bright, graceful and cheering, ever teaching lessons of wisdom and beauty. But, leaving for the present all other questions, let us examine the nature and use of shells.

The mollusks are soft-bodied animals, as the name implies. The body, however, is not made up of joints or rings, like that of a worm, but is covered with a skin, called the mantle. This mantle secretes a hard outer coat, which is the shell. It continues to grow with the rest of the mollusk, and is never separated from the soft parts as long as life lasts. A few mollusks do not secrete shells, and the sight of these naked crawlers has made some people believe that snails have power to leave their shells; but that is a mistake. Some mollusks live on the land; they obtain the lime for their shells from the food which they eat; most mollusks, however, live in water, and take for their shells the limestone which is dissolved in the water of rivers and the ocean. Thus, the numerous species of clams which are found in our great Western rivers act as so many filters, to take away the lime which makes the water hard. So in the ocean, the mollusks take up the lime which is brought down by the rivers, and change it back into stony shells. Corals do the same, and islands are made and great numbers of shells are washed ashore. So the mollusks tend to keep the ocean water free from too much lime and restore it to the land. When a mollusk dies, its shell is usually buried in the mud at the bottom of the lake or ocean where it lived. In process of time, this mud may harden into rock and be thrown upward by earthquakes.

Then comes the geologist with his hammer and breaks the rock; he finds the shell, and now he knows what kind of creatures lived when that rock was nothing but mud at the bottom of a lake or sea. It is easy to tell fresh-water shells from those which grew in the sea, so he can tell whether these rocks were covered by fresh water or salt. Then too, it is found that the older the rocks are the more their shells differ from those of the present day; so by examining the fossil shells of a rock, the geologist can tell whether they lived long, long ago, or in more recent times. So we see that shells are the markings which tell how old the leaves of the book of nature are, and we notice that a study of shells is a very important introduction to the study of geology. In many places on this coast there are fossil shells in the rocks; specimens of these should be collected and preserved for study or exchanged for other specimens.

Correspondence.

A collector in San Luis Obispo county writes: "Not long ago I sent to Dr. A. E. Foote, a natural history dealer in Philadelphia, a small box of sample shells. The box contained *Purpura saxicola, Nassa fossata, Olivella biplicata, Cerithidea sacrata, Chlorostoma funebrale, Lottia gigantea*, and sea urchins. I am just in receipt of a letter from him, in which he says the names I give are only *synonyms* in Tryon's latest work on shells. Is this so? I want very much to print my names *correctly* when I do so." We have answered by letter, giving a general synopsis of the 13 parts at present issued of Tryon's costly work; but as some of our readers may be interested, we will say that in the list above mentioned we noticed none classified except the *Purpura*, and we did not notice that the names were changed of either the *Purpura saxicola* or *P. caniculata*. Tryon has not written about the bivalve shells yet, and it will be some time before he is through with the univalves. In answer to another of our readers we will state that next to this standard work on shells, we would recommend S. P. Woodward's "Manual of the Mollusca." It has been of great assistance to us in studying geology, as the different formations are largely determined by the fossil shells they contain.

M. A. Mitchell, box 96, Waldo, Florida, writes as follows: "I have over 50 species of Florida shells, mostly marine, star fish, sea urchins, sea beans, corals, sharks' eggs and southern tree moss. I desire, in return, land, fresh-water and marine shells. Send list of duplicates, or send box containing two or three shells of each species, not more than 40 or 45 species, and will send an equal number of shells and species by return mail. Give correct names if you know them."

W. Coon, Milo Center, Yates county, N. Y., will exchange a large quantity of Hamilton fossils for shells in good condition. We have received one box from Mr. Coon which we prize very much.

Joe. F. James, Custodian of the Cincinnati Section of Natural History, 108 Broadway, Cincinnati, offers in exchange Eastern plants and soft-water shells. Correspondence solicited.

These three gentlemen are first-class collectors, and we hope you will find time to correspond with them.

GOOD HEALTH.

"Cold Catching."

It is noteworthy as a curious yet easily explicable fact that few persons take cold who are not either self-consciously careful, or fearful of the consequences of exposure. If the attention be wholly diverted from the existence of danger by some supreme concentration of thought, as, for example, when escaping from a house on fire or plunging into cold water to save life—the effects of "chill" are seldom experienced. This alone should serve to suggest that the influence exerted by cold falls on the nervous system. The immediate effects of a displacement of blood from the surface, and its determination to the internal organs, are not, as was once supposed, sufficient to produce the sort of congestion that issues in inflammation. If it were so, an inflammatory condition would be the common characteristic of our bodily state. When the vascular system is healthy, and that part of the nervous apparatus by which the caliber of the vessels is controlled performs its proper functions normally, any disturbance of equilibrium in the circulatory system which may have been produced by external cold, will be quickly adjusted. It is, therefore, on the state of the nervous system that everything depends, and it is, as we have said, on the nervous system the stress of a "chill" falls. Consciousness is *one* element in the production of a *cold*, and when that is wanting the phenomenon is not very likely to ensue.

It is in this way that persons who do not cultivate the fear of cold-catching are not, as a rule, subject to this infliction. This is one reason why the habit of wrapping up tends to create a morbid susceptibility. The mind, by its fear-begetting precaution, keeps the nervous system on the alert for impressions of cold, and the centers are, so to say, panic-stricken when even a slight sensation occurs. Cold applied to the surface, even in the form of a gentle current of air somewhat lower in temperature than the skin, will produce the "feeling" of "chill." Conversely a thought will often give rise to the "feeling" of cold applied to the surface—for example, of "cold water running down the back." Many of the sensations of cold or heat which are experienced by the hypersensitive have no external cause. They are purely ideational in their mode of origination, and ideal in fact.—*Lancet.*

Ventilation and Fresh Air.

Fireside comforts are almost inseparable from the idea of an open fireplace, and from a hygienic standpoint, too, the old-fashioned chimney, or an open grate, is far superior to a closed stove. But it should not be forgotten, writes Dr. Oswald in the *Popular Science Monthly*, that the operation of the chimney-draft alone is insufficient to correct the vitiated air of a small room; it merely creates an outward current. An open window completes the renovating process; in cold weather a few minutes are sufficient to revitalize the indoor atmosphere for a couple of hours. Only the blindest prejudice can deny the pleasant effect of such an influx of life-air; it revives the azotized lungs as a draft of cool water refreshes the parched palate. Colds are never caught in that way. The very name is a misleading misnomer; inflection or influenza would be the right word. Long exposure to a freezing storm, in certain cases, induces a pure pleuritic fever—a very rare affection, and entirely different from the only too familiar catarrh.

What we call a cold is caused by the influence of impure air, or dust, on the sensitive tissue of our respiratory organs; subsequent exposure to the open air merely intimates the crisis of the disorder—the discharge of the accumulated mucous through the nose or throat. Fresh air is here only the proximate cause, as in toothache, or in those paroxysms of retching following upon the first respiration of a half drowned person. If we postpone the crisis by persistently avoiding the open air, the unrespirable matter, instead of being discharged, will be deposited in the tissue of the lungs in the form of tubercles.

STOMACH DIGESTION.—After thorough mastication, each mouthful of food is in turn swallowed, being drawn down into the stomach by the muscles of the œsophagus, not simply dropping into that organ through the open tube, as many people suppose, the œsophagus being always closed, except that portion which is occupied by the food in its passage to the stomach. Shortly after the food has reached that organ, its mucous membrane assumes a rosy appearance, and then may be seen, oozing from its surface, the gastric juice in tiny drops, like perspiration on the skin. The secretion increases rapidly, and begins at once its specific action on the albuminous elements in the food. It may occur that the gastric secretion has been excited before the food has been swallowed, in which case there is no delay whatever in the commencement of gastric digestion. All this has been learned from observations in the curious and well known case of St. Martin, whose stomach, by a wound, was opened to view, and was continued in that condition for a number of years. If the stomach contains a large amount of fluid, that must first be absorbed before the digestive process begins. Hence the propriety of using but little liquid while eating.

IMPORTANT MEDICAL GAIN.—The one great medical discovery that will serve to distinguish the year 1881, is that of Pasteur, the great French chemist, of a method of mitigating the malignity of the virus of certain fatal contagious diseases among domestic animals, which diseases have hitherto defied all curative treatment. Pasteur has demonstrated by these brilliant and convincing experiments that he has succeeded in effectually controlling these virulent diseases. He has been able, by subjecting the virus of the disease to certain processes, to so modify it, that when introduced into the bodies of healthy animals—as in vaccinating the human subject—it produces but a temporary indisposition, and thereafter renders the inoculated animal effectively proof against the disease. The enormous money value of this great discovery to the agriculturists of Europe, who have been great losers by the ravages of disease among their flocks and herds, is admitted. But still more valuable results may, and probably will, flow from it by the extension of the discoverer's method to the protection of the human subject against many malignant and fatal diseases that afflict the human kind.

DOMESTIC ECONOMY.

Raisin Jam.

EDITORS PRESS:—I would suggest to the parties who want to make raisin jam to purchase a few of the quartz mills of Virginia City. Now that the mines are giving out, they can probably be purchased cheap. So many grapes are being raised, their value as food ought to be better appreciated and the different ways of preparing them known. I believe one pound of them contains more nutriment than one pound of beef; hence, they can be afforded by poor people. The idea that they are a costly luxury will soon be dispelled. When this is the case, I imagine the children of this State would take off a portion of the mill custom. Out of curiosity I experimented with jam—pounded the raisins in a dripping-pan, on a flat stone, with hammer, flatirons, axe, etc.; daubed up most of the dishes in the house with the sticky stuff, and finally found that by slowly feeding on the anvil under a little trip-hammer, so arranged that it has a drawing stroke, there is no trouble whatever; and for a sauce for bread, or mixed with oatmeal or cracked wheat, the stuff is decidedly good. But, oh my! the idea of making a meal of it! I would as soon think of dining on molasses candy. It is a good thing and deserves a place in the culinary department, and ought to be an article of commerce.

St. Helena, Cal. R. E. W.

ANTI FAT DIET.—Dr. George Johnson, in the *Practitioner*, proposes the following as an anti-fat diet: May eat—Lean mutton and beef, veal and lamb, soups not thickened, beef tea and broth, poultry, game, fish and eggs, bread in moderation, greens, cresses, lettuce, etc., green peas, cabbage, cauliflower, onions, fresh fruit without sugar. May not eat—Fat meat, bacon or ham, butter, cream, sugar, potatoes, carrots, parsnips, rice, sago, tapioca, macaroni, custard, pastry and puddings, sweet cakes. May drink—Tea, coffee, cocoa from nibs, with milk but no sugar, dry wines in moderation, brandy, whisky and gin in moderation without sugar, light bitter beer, soda and seltzer water. May not drink—Milk, except sparingly, porter and stout, sweet ales, sweet wines. As a rule alcoholic liquors should be taken sparingly and never without food.

APPLE FRITTERS.—Take one cupful of sour cream (or its equivalent, sour milk and melted butter), and stir into it one small spoonful of soda, dissolved in a little boiling water. If sweet cream is used, add one teaspoonful of cream of tartar to the flour, and half a teaspoonful of soda to the cream. Put in a pinch of salt. Beat two eggs very lightly (one will do); stir in two small cupfuls of sifted flour; slice half a dozen sour apples very thin, and mix into the batter. Drop it by large spoonfuls into boiling lard. Serve with maple syrup, or sprinkle over with powdered sugar while boiling hot.

BLUE MILK.—The blue appearance which milk sometimes presents after standing a few days is due to an organism which is allied to bacteria, and can be transplanted into other samples of milk and various solutions. It thrives according to the proportion of acid present and the condition of the casein; it appears after a certain degree of acidification has taken place, and prevents the further formation of acid. The casein must also be unchanged; it is then held in solution during the bluing process. The blueing occurs only in presence of oxygen, and is attended with evolution of carbonic anhydride.—*F. Neelson, in Bied. Centr.*

CHOCOLATE PUDDING.—One pint of grated bread crumbs, one quart of scalded milk, seven tablespoonfuls of grated chocolate, the yelks of five eggs added to the bread and milk, butter the size of a walnut, sweeten to the taste, bake 35 minutes. Whites of five eggs beaten, one teacupful of sugar. Mix and spread on the pudding. Bake a few minutes.

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SAN FRANCISCO:

Saturday, April 1, 1882.

TABLE OF CONTENTS.

EDITORIALS.—Guernsey Cattle; The Citrus Fair, 233 Notices of Recent Patents, 237 The Week; A New Law of Color; U. S. Engineering in California, 240 Stages of Nutrition in Growing Grain; Crossing the Plains; Sugar Cultivating Machinery, 241.
ILLUSTRATIONS.—A Winter Scene in Summer Land, 233. The Old Overland Route Its Privations and Peril, 241.
HORTICULTURE.—Notes on Vine and Tree Planting, 234.
SHEEP AND WOOL.—The Mohair Industry, 234
THE SWINE YARD.—Breeds and Management of Hogs; Dressing Swine, 235.
THE APIARY.—Uniting in March, 235.
FLORICULTURE.—What are You Doing in Your Garden, 235.
ARBORICULTURE—Use of Bamboos in Tree Culture, 235.
PATRONS OF HUSBANDRY.—Neighborhood Insurance, 236.
AGRICULTURAL NOTES, from the various counties of California, 236-7.
NEWS IN BRIEF on page 237 and other pages.
HOME CIRCLE.—Saving Mother (poetry); "Out of the Common;" The Question of Diet, 238. Mabel's Prayer; Always in a Hurry; The Right Kind of a Man; Some Representative Americans, 239
YOUNG FOLKS' COLUMN.—Science Club.—No. 6, 239.
GOOD HEALTH.—"Cold Catching;" Ventilation and Fresh Air; Stomach Digestion; Important Medical Gain, 239.
DOMESTIC ECONOMY.—Raisin Jam; Anti-Fat Diet; Apple Fritters; Blue Milk; Chocolate Pudding, 239
QUERIES AND REPLIES.—Broom Corn; Jersey Values; Scaley-Legged Fowls; Pearling Abalone Shells; Liming Eggs; Experience in Grubbing Wanted, 241.
CORRESPONDENCE.—Northern Notes, 234 Squirrel Killing, 237. Horse Breeding in California.—No. 7, 240
MISCELLANEOUS.—California for Immigrants, 243 and 245. Railways as Civilizers, 245. Chinese Immigration, A Princeton Reunion; Curious Acoustic Phenomenon; A School for Brakemen, 247.

Business Announcements.

Averill Mixed Paint, O. S. Orrick, S. F.
Harvesting Machinery—Geo. A. Davis, S. F.
Fresno Colony Lands—Thomas E. Hughes & Sons, S. F.
Riverside Colony Lands—S. C. Evans, Riverside, Cal.
Premium Colony—J. W. North, Oleander, Fresno Co., Cal.
Plow Works—H. C. Shaw, Stockton, Cal.
The Tiger Rake—Baker & Hamilton, S. F.
"Abel Stearns Ranchos," Los Angeles Co., Cal
Squirrel Poison—A. R. Booth, San Luis Obispo, Cal.
Riverside House—W. B Wood, Riverside, Cal.
Berry & Place Machine Company—Parke & Lacy, S. F.
Windmills and Pumps—Woodin & Little, S. F.
Wool Commission Merchants—Moody & Farish.
Eggs—E. B. Weaver, Wheaton, Ill
Cook Book—Craigin & Co., Philadelphia.

The Week.

Barring a hot norther which has dried the ground and exhausted much valuable moisture in some grain fields, the week has been a succession of delightful, sunny days, such as we have not seen for months. Growth has been extremely rapid, and plants seem impelled with a determination to make up for lost time. More showers will soon be called for to carry on this growth, and there is no reason to think that they will be denied.

The prevailing topic of conversation is the Chinese bill, which has passed both Houses and now lies with the President for his approval. We print this bill in full on another page, as it is a matter of great importance and should be kept for reference. Rumors have been thick that the President will veto the bill on the ground that the period of exclusion, 20 years, is too great to conform with the spirit of the recent treaty with China. We trust this may not prove true, for the sentiment of the Pacific coast has been pronounced overwhelmingly in favor of restriction upon Chinese immigration, and recognition of such prevailing sentiment is due us from the Executive.

A New Law of Color.

Eastern legislatures are still laboring at the problem of how to rescue the butter makers from competition with counterfeit butter. New York passed a law last year, which met with a governmental veto, as we showed in a recent issue. The present winter another act is being contemplated, and has passed the lower house.

It is an interesting fact in the history of legislation on this subject that the law-maker in this case hangs his prohibition solely on the color of the product, and aims to make it illegal to add to the tallow mixture any substance which will give it a yellow color, which the proposed law aims to reserve for the genuine article. This, it strikes us, is rather an original way of attacking the evil, and for this reason we introduce herewith the main sections of the act:

Sec. 1. No person, persons, firm or corporation manufacturing with intent to sell any article or substance in semblance of natural butter or natural cheese not the legitimate product of the dairy, and not made exclusively from milk or cream, or both, with salt or rennet, or both, and with or without coloring matter or sage, but into which any animal, intestinal or offal fats, or any oils or fats of any kind whatsoever not produced from milk or cream or into which melted butter, lard or tallow shall be introduced, shall add thereto or combine therewith any annatto or compounds of the same, or any other substance or substances whatever, for the purpose or with the effect of imparting thereto a color resembling that of yellow (or any shade of the same) butter or cheese; nor shall they introduce said coloring matter into any of the articles of which the same is composed.

Sec. 2. No person, persons, firm or corporation shall deal in, sell, expose for sale or give away any article or substance in semblance of natural butter or natural cheese described in the first section of this act, and known as oleomargarine or imitation butter and lard or imitation cheese; and no keeper of any hotel, restaurant, boarding-house or other place of public entertainment shall keep, use or serve either as food for their guests or for cooking purposes any such imitation butter or cheese which shall contain any of the coloring matter therein prohibited, or be colored contrary to the provisions of this act.

Sec. 3. No person, persons, firm or corporation shall manufacture, with intent to sell, deal in, sell or expose for sale any article, or substance in semblance of natural cheese, not the legitimate product of the dairy, and not made exclusively of milk or cream, or both, but into which any animal, intestinal or offal fats or oils of any kind whatsoever not produced from milk or cream shall be introduced, unless the words, "improved process," "skimmed cheese," "imitation cheese," shall be plainly stenciled in plain Roman letters at least one half inch in length, with durable paint, upon the sides of each and every cheese, and also upon the outside of top and opposite sides of each and every box containing the same, in letters and with paint as before mentioned and described.

Other clauses follow, fixing penalties, etc. We are not possessed of legal lore to determine whether you can prevent a man from dyeing his grease-compound any color he chooses or not, but we should think the point in the bill was rather microscopic. The New Yorkers seem to have learned wisdom in one respect, however, for they have inserted a clause that one-half of the fine imposed shall be paid to the informant. The omission of this feature has been the mistake hitherto, in that it was not made an inducement for anyone to undertake the unpleasant task of detecting the fraud and making formal complaint thereof. The new law also provides for the appointment of an officer who shall operate against oleomargarine in the interest of the public health, the inference being that the tallow compounds are unwholesome.

U. S. Engineering in California.

The telegraph from Washington announces that Colonel G. H. Mendell's final report upon his project to protect the navigable waters of California against the effects of hydraulic mining has been printed with unusual promptness, and advance copies were received by the House Committee on Commerce, to-day, in accordance with an arrangement made by the chairman (Mr. Page), who intends to bring the subject up for consideration at the earliest possible period, with a view to having an appropriation for this purpose inserted in the annual River and Harbor Appropriation bill. Mr. Page is confident that the committee will act upon the proposition favorably, and that an adequate appropriation for beginning the work will be provided by Congress during the present session. Colonel Mendell's recommendations in regard to California rivers contemplate the construction of a dam on Yuba river, at the narrows, of a height of 75 ft., to cost $204,779; and for repairing brush dams, $80,000. He recommends that $113 500 be expended the first year on the works. He recommends the erection of a dam along Bear river of a hight of 34 ft., to cost $24,600, of which $15,000 should be expended the first year. On the American river he recommends the building of a north fork dam, to cost $24,600, and a middle fork dam, to cost $81,900, of which $22,150 should be expended during the first year. The whole recommendation involves an outlay of $511,600, which is to be expended in 10 years.

THE San Bernardino *Times* says: The San Jacinto river is dry and the lake is in a fair condition to become likewise. Its waters have receded, and there is a belt of alkali about 30 ft. wide and some 6 inches deep surrounding it. Governor Downey is a large owner in this lake, and it is suggested that it would be an excellent point for a soap factory.

Horse Breeding in California.—No. 7.

[Written for the PRESS by JOSEPH CAIRN SIMPSON.]

Roadsters and Fast Trotters.

The Vermont Black Hawks gained high celebrity about forty years ago. The founder of the family was foaled in 1833, and though bred and reared in New Hampshire, and owned from 1837 until 1844 in Massachusetts, his location from that time until his death, in 1856, in Vermont, gave him the title which is most commonly used. This is necessary in order to distinguish the stock from the Long Island Black Hawks. They were contemporaries in the stud, and, notwithstanding there was a great dissimilarity in the appearance of the two strains, there has been more or less confusion owing to the nomenclature being alike. Vermont Black Hawk was a very showy horse—his form, style, action and color being of the kind to attract attention in any assemblage. Though rather below the medium size, his "toppy" demeanor took away the idea of smallness; and he was so highly finished, so symmetrical in all of his proportions, his glossy coat, black as raven's wing, his round, bold action, ease and grace of motion, completely carried away the spectators, and horses as equally meritorious were overshadowed for many years. He was quite a trotter for his day, capable of making a mile in about 2:40, and a better roadster than a track trotter. Though of Morgan origin on the side of his sire, he had more quality than belonged to that family, which was due to the breeding of his dam, which, without doubt, had a good share of thoroughbred blood. His most noted son was Ethan Allen, who was fully as good-looking, and with as perfect trotting action as could be imagined. The son of Ethan Allen, Daniel Lambert, has well sustained the reputation of the family, and takes rank close to the head of the column. Black Hawk has three in the 2:30 list, Ethan Allen eight, and Daniel Lambert 22. Taking this as a guide (and it has now become the accepted standard), the breeding of Daniel Lambert is worthy of consideration. The blood of the dam of his sire, Ethan Allen, is unknown. His dam was by Abdallah, the sire of Rysdyk's Hambletonian; his grandam by Stockholm's American Star, a son of Duroc. Thus there is as much Abdallah as Black Hawk in Daniel Lambert—a quarter of each; and to both belongs the glory of the grandson. It shows, however, that these two noted strains combined to produce the type of animal sought for; and as this has been further made manifest by other sons of Ethan Allen—Dixon's, from an Abdallah mare, is the sire of Sensation, record, 2:22¼, and Woodward's, the Dam of which was Fanny Cook, by Abdallah, has four in the 2:30 list—it may be taken as a good mixture. Many illustrations might be added to strengthen the position, as the dam of Gloster, 2:17, was by Stockbridge Chief, a son of Vermont Black Hawk. Though the head of the clan and very many of his descendants were smaller horses than it is desirable for a farmer to breed, the mingling of other blood, better feeding, and the influences of a more favorable climate than the Eastern States, have done away with this feature in many which are still termed Black Hawks. As a rule, those of the blood which have been brought to California have been of good size, and, of course, with a tendency to still more bulk and substance in those of California breeding. The early importations to this State were generally of the best class, as the inferior would not pay the large cost attending the journey, and among the advertisements I find the following: Comet, a grandson of Black Hawk, as 15¼ hands, and weighing 1,000 lbs.; Benicia Boy, a son, 16 hands, and weight 1,260 lbs.; Stockbridge Chief, grandson, 15¾ hands, weight 1131 lbs.; Black Hawk, son, 15½ hands, 1080 lbs.; Vermont, grandson, 16 hands, 1,100 lbs.; Glencoe, grandson, 16 hands, 1,150 lbs., and Keokuk, son, 15¾ hands, 1,080 lbs. There are others of the strain advertised, without giving the hight or weight, but those which are given are enough to show that the California representatives were considerably above the average, and with size enough to make good "business horses." The breeding of the dams was very good in most instances, so that a strain of any of those old timers will not be out of place. The Morgans, from which the paternal side of the Vermont Black Hawks sprung, have gained a good deal of celebrity through other lines. The most noted of any of the tribe which came here was General McLellan. He was a double Morgan, being by North Star, a son of Bulrush Morgan, his dam by Brown's Bellfounder, grandam by Sherman Morgan. He has three in the 2:30 list, viz.: Dan Voorhees, 2:23½; St. Helena, 2:27½, and Flora Shepherd, 2:30. There was another General McLellan brought to California in 1868 (the former came in 1861), by the Drew Horse, though he is generally called "Stockton McLellan," and the Drews are highly valued in Maine where this horse was bred. There have been three sons of Biggart's Rattler brought to this State. Werner's Rattler, the sire of Mary Davis, 2:26¼, Black Leg and Mambrino Rattler. The latter is the sire of Maud, the dam of Magdallah, 2:24, and of Reliance, 2:25. This alone would be sufficient to show the value of the blood as a trotting adjunct in a pedigree, though they have done well in the East, and are generally of fine size and appearance. General Taylor is the only son of the Morse Horse which has been brought to this State, so far as my knowledge extends. He was the sire of Captain Hanford (Paddy McGee), the sire of May Howard, 2:24, and of Eugene Casserly, the sire of Sweetbriar, 2:26. General Taylor was also the sire of Nerea's dam, and Nerea trotted in 2:23½, so that the California record is a very good one. The Morse Horse was the sire of Alexander's Norman, the sire of Lulu, 2:15, May Queen, 2:20, and of Blackwood, the sire of Proteine, 2:18; Blackwood Jr., 2:22¼; Ravenswood, 2:26, and others in the 2:30 list. The Bellfounder best known on this coast is called Milliman's, and he was a grandson of the Morse Horse. He is the sire of Gus, 2:26¼, and Bellflower, 2:28¼, and his stock is highly prized by those who are acquainted with its merits. Although the description of the various strains available in California has been necessarily brief, even the short account will show that there is abundant material for any combination the breeder may fancy. There is not a State in the Union which has a greater variety, and scarcely one that can equal this in that respect. Then the blood has been disseminated so widely that there are specimens in nearly every neighborhood, and hence within the reach of everyone. The wealthy breeder can select from those at a distance, and add to the mares in his stud those which have been tested and proven to possess the desired qualities. Were the situation different, the smaller breeder could not cope with him, and he would have the field entirely to himself.

Blood is the grand desideratum in the racehorse. A proportion of other than that which is recognized as the true sort, so small that to those who are not familiar with this branch of horse breeding it appears incredible there can be such an influence, renders the other of no value; and a sire or dam with a sixteenth or thirty-second of a cold strain is rejected. The pure thoroughbred, uncontaminated with alloy, is alone admissible in the studs of those who intelligently breed for the race-course, and the field is comparatively narrow from which to choose. Though the field is broad and the opportunities for selection increased a hundred fold when trotters and roadsters are the aim, the breeding of the very fast trotter is becoming something analogous to that of producing the flying galloper. As was stated in the opening of these articles, the study of genealogy is well worthy the attention of those who are engaged in the business, and to be successful, or moderately so, even, families and characteristics must be regarded. Notwithstanding many of the mysteries of breeding are beyond the scope of human intelligence, the breeder who endeavors to eliminate "chance," as much as lies within his power, will find the pursuit to return profits, while in a vast majority of instances the man who depends on haphazard will fail. The foundation must be well laid or the superstructure, costly though it may be, will not stand. Blood, form, size, mental qualifications must be combined—the stones and cement to lay the first courses—and then the future work is comparatively easy. There must be as little chance for "reversion" to inferior qualities as possible, and the remote ancestry studied as well as the parentage. The farmer who begins right has taken the first step towards success, and a proper commencement is apt to lead to an intelligent continuation.

DEATH OF LONGFELLOW.—The death of H. W. Longfellow, the best known and beloved of American poets, occurred at his home in Cambridge, Mass., on Friday last, March 24th. Longfellow was born in Portland, Maine, on the 27th of February, 1807. His father, Stephen Longfellow, was for many years an eminent member of the bar of that city. The poet entered Bowdoin college at the early age of 14, and graduated at 18. During his academic course he gave such evidence of literary ability that no other profession was urged upon him. He was appointed professor of modern languages and literature, shortly after leaving college, with the privilege of residing abroad for several years for observation and study. He passed a year each in France, Spain, Germany and Italy, returning to the United States in 1830. From this time his literary labor was commenced in earnest. In 1835 he accepted a similar position in Harvard college to that he has filled in Bowdoin, and his residence has been near Harvard since that time.

THE STATE OF WASHINGTON.—A dispatch from Washington says: Mr. Aldrich, of Illinois, was instructed to-day by the Committee on Territories to report favorably the bill for the admission of Washington Territory as a State. Aldrich's report contains an elaborate statement of the resources of the Territory. Its population, according to the census of 1880, was 75,116. The vote in 1880 was 15,823. The taxable property in 1881 was $23,708,000. It is free from debt. The present taxation is but 2½ mills on the dollar. The amount of poll-tax for 1881 was $108,971. Its agricultural, horticultural, manufacturing, mining, fishing, and commercial resources are unexcelled. Its wool crop in 1881 was worth $4,000,000. Its manufactures for 1881 were worth $6 000,000. The tonnage of its shipping is put at 38,018 for 1881. Its financial ability is rated as equal to that of any of its predecessors.

Stages of Nutrition in Growing Grain.

As California hay is for the most part grain cut before maturity, it becomes of the greatest importance to determine at what point the plant is in the highest nutritive condition. Practically, this has been determined by the years of experience here in growing and curing our "cereal hay," and the fixing upon some point of development in the kernel between the "milk" and the "dough" is generally accepted as the best time to drive in with the mower. Opinions differ somewhat as to just the proper consistency to require in the forming seed, but no one thinks of cutting grain for hay until the kernel is fully formed, though not matured. Dr. Lawes, the eminent English experimenter, in a recent note to the *Rural New Yorker*, notes the difference between the ordinary "grasses," which make the Eastern and English hay, and the green cereals used here. He shows that it is a mistake to suppose that because the Eastern grasses show the highest stage of nutritiveness when in blossom, the same is true of the *grain* plants. He says he accepts the fact as regards grass; but does not think it follows as a necessary consequence that the same is true as regards the ordinary grain crops. The main function in the life of a plant is to provide seed for its reproduction. The seeds of most of the grasses are exceedingly light, and form but a very small portion of the weight of the whole plant; at the time of blooming, therefore, all the sugar and starch required to perfect the seed is already stored up in the stem and leaves, and the crop, if allowed to ripen its seed, will produce woody matter instead of more starch and sugar. In the cereal grains the seed bears a considerable proportion to the whole crop. In some the seed and straw are of the same weight; in others—as, for example, in wheat—the proportion may be 60 or 70 lbs. of grain to 100 lbs. of straw, and in all cases the seed forms an important item in the whole weight of the plant. There is evidence also to show that a considerable portion of the starch found in the seed is not to be found in the leaves and stem at the time when the plant is in full bloom.

At Rothamsted, in 1847, says Dr. Lawes, we selected a very level acre of wheat, which was divided into five portions and cut at five separate periods, commencing with June 21st, when the plant was in bloom, and ending when the wheat was ripe. During this period the dry weight of the crop had doubled itself.

A large addition is made to the solid matter of the crop in the interim between the two periods; the sugar in the stem is converted into starch, more woody matter is formed in the stem, and it would appear quite certain that a considerable proportion of the starch, which is deposited in the seed, did not exist in the stem in any form at the time of blooming. We have no means of knowing how much was stored up in the roots and how much was derived from the atmosphere; it would, therefore, be a mistake to say that at the time of blooming a corn crop contains as much nutritious matter as when it is ripe. In the former stage the nutritious matter is more soluble and more equally diffused throughout the whole of the plant, but the total amount is less than when the corn is ripe.

These observations are of especial interest in this State, because we are relying so much on grain hay, and it is well to have a clear scientific description of the reason which underlies our practical judgment in the selection of a fully-formed kernel when cutting hay.

DOUBLE HYBRID WORM-PROOF COTTON.—Mr. L. C. White, of Jasper, Jasper county, Texas, claims that after 20 years of study and experiment he has fully succeeded in producing a worm-proof cotton. Not only is the plant worm-proof, but it produces, he says, more and larger bolls to the stalk than any other cotton, matures earlier and has a better staple and finer lint than any other cotton grown. He wants the Government to pay him $1,000,000 for the seed and for his theory. If his "double-hybrid," absolutely worm-proof cotton is all he claims for it, he should be able to make $1,000,000 selling seed to planters much quicker than he is likely to get such a sum from the Department of Agriculture.

QUERIES AND REPLIES.

Broom Corn.

EDITORS PRESS:—I notice an inquiry about this plant, and having grown it more or less for the past 25 years in this State, I believe I am authority on the subject.

The gentleman who wants to grow it in Alameda county will probably not succeed in growing a very good quality. It will grow almost anywhere, but there is comparatively little land in the State that will produce a good, straight, fine brush. The soil must be a light, mellow loam, through which the roots can run easily. Well fertilized sand, even, is better than a rich, heavy soil. It must be so situated that it will retain moisture. The climate should be warm as possible, both night and day. Every foggy day and every cold night will put a kink in the brush. The best is raised in the Sacramento valley, south of the Marysville Buttes, on land that might be termed high tule, and is overflowed with water a foot or two deep in winter. It can never dry out, is very soft and mellow and rich. The weather is so hot that I once blistered my hand with the pump handle, getting water for my team to drink. The nights are splendid for mosquitos, and fog is seldom known. It should be planted about the last week in April. When done on a large scale use a wheat drill, with the holes stopped, and plows held up so as to leave the rows about three ft. apart; when two inches high cultivate and hoe, thinning out so as to leave probably six stalks to every foot. Some experience and judgment is needed here. There is great difference in the seed, also. If your correspondent wishes some that is very nice, he can have a pound or two by calling or sending stamps to cover postage. No person should plant much until he has tested his ground by raising a little.—R. E. WOOD, St. Helena.

Jersey Values.

EDITORS PRESS:—The following prices obtained for Jersey and Guernsey cattle at the association in New York and Philadelphia last December, and this month of March shows that prices are increasing. One hundred and twenty-seven head of Jersey cows averaged each $502; 49 head of Guernsey cows averaged $390; 12 Guernsey and Jersey calves averaged each $190. Several cows went as high as $1,200. They have Jersey bulls at the East which they value at $10,000. Some have sold for $5,000, and there are many cows that could not be bought for less than the above sums. Dairymen here are getting to appreciate Jerseys as butter cows. With good selection of bulls, Jersey half-breeds will make 10 lbs. of butter per week, on an average, but the bulls must be from good butter cows.—SUBSCRIBER, San Francisco.

Scaley Legged Fowls.

EDITORS PRESS:—I have a troublesome disease among my chickens. Their legs first look dry and scaley and then it gets to look more like a dry hard scab, and they seem to get sore and stiff, not knowing what to do. I have only tried kerosene; that seems to relieve, but not cure. If any of your readers have ever had anything like it among their chickens and know what will make a permanent cure, I would very much like to know.—MRS. S. A. SHELLEY, Colfax, March 8, 1882.

Kerosene oil is commonly used for this disease. A wash of carbolic acid, one part of acid to five parts of water is also good. In severe cases several applications are necessary. Does anyone know anything better?

Pearling Abalone Shells.

EDITORS PRESS.—Will some of the many readers of the RURAL PRESS tell me how to clean and polish abalone shells.—READER, Santa Cruz.

Some time ago D. H. Trout, of Santa Cruz county gave us the following instructions:

Use muriatic acid, putting it in an earthen or glass vessel, and drop the shells in, being careful not to leave them but a moment if very small. Take them out with a small stick and drop them into a basin of fresh water, and then you can handle them; and by rubbing them with a rag you can tell if they are pearled. If not, return them to the acid. Shells larger than the hand will be expensive; from that down to the size of the thumb-nail can be pearled at an average cost of about a cent apiece. Considerable experience will be required to succeed well. Some grind them. but the process is a laborious one and slow.

Liming Eggs.

EDITORS PRESS:—Can you give a subscriber the proper proportions of lime and water to make a pickle to preserve eggs in for winter use.—G. M., San Jose.

Wm. Niles, in his "Pacific Coast Poultry Book," says: "To four gallons of boiling water add half a peck of new lime, stirring well for a while; when cold, run through a coarse sieve to remove the hard lumps; add 10 ounces of salt and three ounces of cream of tartar, and mix the whole thoroughly. The mixture should stand two weeks before using. The eggs should be packed as closely as possible, and be kept closely covered in pickle. Every egg should be perfectly fresh before pickling. This will preserve them from one to two years."

Experience in Grubbing Wanted.

EDITORS PRESS:—Will you please tell me how to get stumps of trees and young oak trees and manzanita bushes, and the like, out of the ground the cheapest and best way?—W., Colusa county.

There has been a great deal of this work done during the last few years, and many of our readers can speak on the subject in the light of recent experience. Let us have a discussion on land clearing. It will be profitable to all who have the work in hand or in mind.

THE OLD OVERLAND ROUTE—ITS PRIVATIONS AND PERILS.

Crossing the Plains.

As apropos to the subject of immigration, concerning which we present much matter in this issue, we give a picture of the hardships endured by the immigrants of the early times. Now that the new-comer lolls in a palace sleeping-car, or is carried comfortably in the new style of railway carriage introduced on this coast, and styled the immigrants' sleeping car, he can but contrast his pleasant annihilation of distance with the weary and perilous plain-crossing of the early days.

The engraving shows a party of resolute immigrants overtaken by thirst, dragging themselves along in the hope of reaching sweet water. It was an undertaking which tried men's souls, the old crossing, and many never survived the journey. Now everything is changed. A few days of comfortable riding and the immigrant is transferred, almost before he is aware, from the rigor of the Atlantic winter to the flower-decked fields and sunshine of California.

Steam Cultivating Machinery.

The trial of steam plowing machinery has been deferred from year to year by the fact that an outfit brought here from England for experimental purposes was caught in the meshes of the Customs laws, and the duty was so high that the importer saw fit to leave the machinery in the hands of the Government. Bills have been introduced at each session of Congress to admit this set of plowing tackle duty free, as it was designed for experimental tests, and its value here was still an unsolved problem. It always struck us as eminently fitting that the Government should grant this request of the enterprising importer, because if the system should prove well adapted to California conditions, our own mechanics would soon begin the manufacture of steam plows, etc., and thus the trial might result to the advantage of all classes. So long as the experiment is untried, neither farmer nor manufacturer will care to invest in steam apparatus. The bill to admit free of duty has progressed further at this session of Congress than it has before, and it may be that the tackle which has been so long held idle in this city may at last be brought into the field. We hope it may be so.

But while the outfit has lain in the hands of the Customs authorities, there are various new things being brought out abroad which promise to supersede the steam plow. One is known as the "steam digger," which is described as a digging attachment connected with an ordinary traction engine, and the additional apparatus works on a bent shaft, their arms carrying a set of tines, which are thrust into the ground that is next turned over at the rate of 45 spits to each minute. The engine works directly backward, weighing about six tons, narrow enough to enter through ordinary field gateways, and costing about $2,500. The implement is as manageable as a common traction engine, and the digging apparatus can be quickly thrown out of gear for traveling over roads, or, being detached, give liberty to the engine to perform other agricultural work. Eight or ten horse-power is sufficient to work the digger over an acre per hour, and the cost of cultivating ten acres is reckoned at about $5. A man and a boy can efficiently work this new iron team, which, with an easily-made improvement in the steering gear, so as to allow better turning, can scarcely fail to find a place on most farms of the future. As a composite engine, many purposes can be fulfilled—digging, traction, thrashing, hoisting, etc., and those who already possess engines can have the special digging attachment for about $1,000.

This machine had a public trial in England last month, and its working was witnessed by a large number of interested persons. One of our London exchanges says: "Our general and definite conclusion is that this, and even a much lighter machine, will rapidly gain agricultural approval and use, as a handy, easily-worked digger, weighing only as much as four plough-horses, could scarcely fail to displace other modes of cultivation. Before, however, this end is gained, a further advance has to be made in the weight and control of the machine; already its effectiveness is proved. The invention will be well tested in the present season."

The attachment of a digger to a thrashing engine may give our thrashermen a chance to put in their late fall and winter months in turning over the soil.

A STONE BRIDGE, to be built at Minneapolis, Minn., bids fair to become one of the notable structures of the world. According to an exchange it will consist of 16 80-foot spans and four 100-foot spans, and, including the shore pieces, will have a total length of 1,900 ft. It will support two railway tracks at a height of 60 ft. above the water, and will run diagonally across the river below St. Anthony's Falls. The cost is estimated at nearly $500,000. This will be a remarkable bridge, truly; but so far as length of span is concerned, the Cabin John bridge, or Union Arch, near Washington, D. C., exceeds it, being a granite arch of 220 ft. span, the longest stone arch in existence. The bridge is 101 ft. high and 20 ft. wide.

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The cut presented here is a genuine representation of the new Deering Mower. It is emphatically a light Mower, weighing only 575 lbs., when ready for the field. It is emphatically an iron Mower, as there is not a single piece of wood used in its construction, excepting the pole levers, being made of iron. The Gearing is completely inclosed, so that no dirt or dust can mix with the oil to wear it out, and so that it cannot catch the reins or the fingers. The gearing is wonderfully perfect in its working, causing the Deering Mower to run with great ease, and almost without noise. The bearings are made with great care, and can easily be replaced if they become worn. The draft of the Deering Mower is very light, which is caused by its very light weight, draft connections, etc. The lifting lever is remarkably easy and efficient in its operation. The drag bar is hinged to the cutter-bar in such a manner that when it is desired to fold the cutter bar, it is tilted back on the drag-bar, throwing all its weight on the latter. The end of the track clearer rod is then fastened to the frame, holding the cutter-bar very securely. This is the most convenient, simple and secure method yet invented. The tilting-lever is so connected with the cutter-bar as to allow the latter to have an easy rolling movement, which enables it easily to pass over knolls and stones, and other obstructions.

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NOTICE!

To Farmers and Stockmen!

You well know the virtue of our H. H. H. Horse Liniment. It has been used for years throughout the entire Pacific Coast, and has been found without an equal as a Liniment for man and beast. We have now added to our list of medicines "The H. H. H. Hoof and Healing Ointment," and the "H. H. H. Condition Powders." No stock-raiser, once having used our medicines will ever be without them in the house. For sale everywhere.

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Hoof and Healing Ointment	Horse Liniment	Condition Powders.
For Brittle Hoofs,	The most effectual	For Inward Strains,
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Contracted Hoofs,	Spavin,	Yellow Water,
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Quarter Cracks,	Callous Lumps,	Scratches,
Collar Galls,	Old Sores,	Mange,
Harness Galls,	Sprains,	Rheumatism,
Scratches,	Stiff Joints,	Epizootic,
Mud Fever,	Bruises,	Coughs,
Etc., Etc.	Windgalls, Etc.	Colds, Etc.
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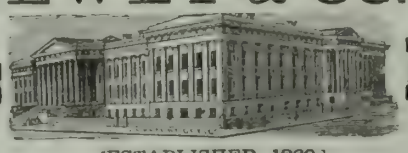
Scientific Press  **Patent Agency.**

[ESTABLISHED 1860.]

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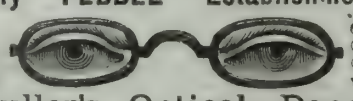
1863  1882

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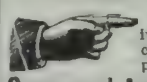

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California for Immigrants.

A Description of the State by the Immigration Association of California.

[The following description of California and the inducements offered to immigrants is prepared by the Immigration Association, and is published for that Society].

THE IMMIGRATION ASSOCIATION.

This Association is supported by and is under the control of the business men of San Francisco.

It is organized for the purpose of furnishing *free* information concerning California, and to assist immigrants in finding employment and permanent homes in the State.

All possible care will be taken to have the information given by the Association clear and *reliable*.

The Association is endorsed by the Governor of the State and by the Board of Trade of San Francisco, as follows:

INDORSEMENTS.

[From Governor Perkins].

SACRAMENTO, Dec. 17, 1881.

Arthur R. Briggs, Esq., President Immigration Association of California—DEAR SIR:—I notice with pleasure the formation of an Immigration Association in San Francisco; and it is gratifying to me, both as a citizen and as Governor of our honored State, that it should have fallen into such worthy hands. I congratulate the members thereof in their selection of its officers, and beg to add my endorsement thereto. Their names will give it strength and confidence in the community, stamp it with character, honesty and integrity, and result in advancing the best interests of the State. Very respectfully,

GEO. C. PERKINS, Governor.

[BY THE BOARD OF TRADE.]

At a meeting of the Board of Trade of San Francisco, held at the rooms of the Board, Dec. 9, 1881, the President, Jacob S. Taber, in the chair, the following resolutions were read and adopted:

Whereas, The question of Immigration is one of vast importance to the business men of this city, and we believe the time has come when it should receive intelligent consideration at their hands; and

Whereas, This Board of Trade has, through its action, directed public attention to the subject, and been instrumental in bringing about an organization calculated to do much good to the State; therefore be it

Resolved, That the IMMIGRATION ASSOCIATION OF CALIFORNIA, organized under the laws of this State, has the fullest approval of the Board of Trade of San Francisco; that the known character of the gentlemen composing the Association entitles them to the confidence and support of the business men and capitalists of the State.

Resolved, That, in the opinion of this Board, any information distributed by the IMMIGRATION ASSOCIATION OF CALIFORNIA will be wholly free from personal motives; and from its reliability and character will be worthy the confidence of all persons seeking knowledge of the State.

OFFICERS OF THE ASSOCIATION.

The Directory of the Association is as follows:

OFFICERS:

Arthur R. Briggs,.....President
W. Steinhart,.....Treasurer
W. L. Merry,.....Vice-President
A. W. Preston,.....Secretary
C. H. Street,.....Land Officer

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James R. Kelly, T. L. Barker,
J. V. Webster, Wm. Blanding,
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MEMBERS OF THE ASSOCIATION:

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W. W. Dodge, W. N. Hawley,
Wm. L. Merry, W. Steinhart,
Jules Cerf, Henry Casanova,
Henry Payot, Geo. K. Porter,
M. Ehrman, Jas. Duffy,
T. L. Barker, Wm. Blanding,
Arthur R. Briggs, C. W. Whitney,
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C. F. Bassett, A. A. Wheeler.

GEOGRAPHY OF CALIFORNIA.

It has been truly said that "California has a peculiar topography. No other State comprises within so small a space such various, so many, and such strongly marked natural divisions, isolated volcanic peaks, vast domes of granite, steep and rugged mountain ridges, fertile and beautiful valleys, bare deserts, spacious bays, magnificent rivers, unparalleled waterfalls, picturesque lakes, extensive marshes, broad prairies and dense forests—all these are hers." The State extends in a northwesterly and southeasterly course about 750 miles, with an average breadth north of Monterey of 200 miles, and south of that point of 300 miles, and comprises within its limits an area of about 155,000 square miles or 99,000,000 acres, and is the second largest in the Union.

POPULATION.

It has a population of only 850,000, much scattered, yet the total annual productions of the mines, farms and manufactories amounts to over $150,000,000. The people have nearly $150,000,000 in the savings and other banks, and are generally enterprising and prosperous.

TOPOGRAPHY.

There are two great mountain ranges running northwest and southeast, namely: the Sierra Nevada and the Coast Range. The former is from 5,000 to 8,000 feet high, and the latter from 2,000 to 6,000 feet. The two ranges are connected in the southern part of the State at Tehachapi and again at Mount San Bernardino. The Sierra Nevada extends along the eastern border of the State, and the Coast Range along the coast to the north and south boundaries of the State. The Sierra Nevada is about 450 miles long and connects with the Coast Range again by a latitudinal range running across the northern portion of the State. The base of the Sierra Nevada Range north of Fresno has an average width of about 80 miles. The Coast Range averages about 65 miles in width.

Between the two ranges are the great Sacramento and San Joaquin valleys, which are about 450 miles long, by 55 miles wide, and may be termed the heart of the State.

In the northern part of the State and north of the junction of the two great mountain ranges is the Klamath basin, through which runs the Klamath river in a southwesterly course, between steep hills and mountains and rocky cañons, for a distance of about 225 miles to the ocean.

The whole basin of the Klamath is very rugged for a distance of forty miles from the coast, and along the main river there is very little valley or bottom land. Near the lakes are large bodies of land. The largest tributaries to the Klamath, the Trinity and Salmon rivers, run through a country almost as rugged as that bordering on the lower main stream. Scott and Shasta rivers—smaller tributaries—have fertile valleys of bottom land about five miles wide and forty long. Pine, cedar and fir forests cover the mountains, and there are other valuable trees both on the mountains and in the valleys.

In the extreme southeastern portion of the State is the Colorado Desert, which is about 140 miles long by 70 miles wide.

Another great basin, called the Mojave Basin, extends into the middle eastern border of the State, the surface of which is cut up by many irregular ridges of barren rocky mountains.

There are many rivers. In the central portions are the Sacramento and San Joaquin, each about 350 miles long in their meanderings, which are the only navigable streams in the State. There flows from the Sierra Range westward into the Sacramento, the Pitt, Feather, Yuba, American, Cosumnes and Mokelumne rivers. Into the San Joaquin, the Calaveras, Stanislaus, Tuolumne, Merced, Chowchilla and Fresno. Into Tulare lake, the Kings, Tule and White rivers, and into Kern lake, the Kern river. All of these are considerable streams, with an average length of about 120 miles. The upper half of each is in the steep and rugged mountains, where they are torrents. After reaching the plain their currents are gentle and the banks low, fringed with oak, sycamore, cottonwood and willow.

But few streams flow eastward from the Coast Range, and these are not all permanent. The rivers of this range flowing westward into the ocean, are necessarily short. Those south of San Francisco are the San Lorenzo, Pajaro, Salinas, Cuyama, Santa Inez, Santa Maria, San Buenaventura, Santa Clara, Los Angeles, San Gabriel, Santa Ana, Santa Margarita, San Luis Rey and San Diego, many of which are constant streams to within ten or fifteen miles of their mouths, and all of them passing through rich valleys. North of San Francisco the main streams of the Coast Range which empty into the ocean are the Russian, Eel, Elk, Mad, Klamath and Smith rivers, besides many others of less importance, all of which are permanent streams, bordered with narrow valleys at the foot of the mountains.

To all the rivers of the State there are many tributaries along which are good agricultural lands.

The Coast Range is composed of a multitude of ridges, and is intersected by numerous long, fertile and narrow valleys, such as the Los Angeles, Salinas, Santa Clara, Sonoma, Napa and Russian River. These are among the most fertile valleys in the State.

The Sonoma and Napa valleys are particularly noted for the production of grapes and wines.

There are many important lakes—the Tulare, Owens, Kern, Clear, Klamath, Goose, Fall, Honey, Elizabeth, Tahoe, Mono and Dry lakes. There are also many smaller ones.

Along the coast of 900 miles there are numerous good harbors, the most important of which are those of San Francisco, Wilmington and San Diego. The former is one of the finest land-locked harbors in the world, and the latter is not excelled by many.

THE FOOTHILLS.

The western base of the Sierra Nevada mountains, for a width of about twenty miles, and bordering the Sacramento and San Joaquin valleys is known as the foothill region, and is included in the estimate heretofore given as the width of the Sierra range. The "foothills" extend from the northern to the southern extremity of these valleys. The temperature, up to a hight of about 1,500 feet, is similar to places in the same latitude in the valley. In the latitude of Sacramento there is a slight increase of rainfall graduated by the increase in elevation. South of Sacramento the increase diminishes.

Throughout the whole of this region living springs are numerous. Every agricultural product that can be grown in the valleys may be produced with equal facility in these foothills. Ordinarily the land has to be cleared of trees. Fruit trees and vines thrive better than in the valleys. Wood is everywhere to be found.

There are more than 3,000,000 acres of these lands open to settlement under the homestead and pre-emption laws.

CLIMATE.

One of the chief advantages of California is its admirable climate. It is much varied, differing greatly in different localities. In many counties thirty miles travel takes one from the region of oranges to where only the hardy fruits thrive.

In the valleys the winters are mild. In summer the nights are cool, and cloudy days are few. Violent wind storms, thunder, lightning, hail, snow and ice are very rare.

On the foothills of the Sierra, after a hight of about 1,500 feet is reached, also northward, in the Coast Range, the climate as we ascend approaches more and more that of the north Atlantic States.

At San Francisco ice is rarely seen, and the thermometer never stays at the freezing point twenty-four hours. Snow has not been seen, except a few flakes, for twenty-five years.

In the Sacramento and San Joaquin valleys the winters are about four degrees colder, and the mean temperature in the summer is from sixteen to twenty degrees warmer than that of San Francisco. The weather at mid-day is very warm during the dry season. In the southern part of the State the winters are milder and summers warmer. A temperature of 100 degrees in the southern and interior part of California, owing to the dry atmosphere, is more endurable than 80 degrees in the States east of the Rocky Mountains. Sunstroke is unknown.

The following table gives the results of observations at various points on the Southern Pacific Railroad, as compared with some of the world's noted climates:

MEAN TEMPERATURE.

PLACE.	JAN.	JULY	DIF	LAT.
	Deg.	Deg.	Deg.	° ′
Austin, Texas	36	84	48	30.36
Borden, Cal	42	89	47	36.00
Cincinnati, O	21	77	56	39.06
Chicago, Ill	10	63	53	41.00
City of Mexico	52	63	11	19.26
Caliente, Cal	46	92	46	35.00
Delano, Cal	47	86	39	35.00
Dijon, France	33	70	37	47.00
Fort Yuma, Arizona	56	92	36	32.43
Genoa, Italy	46	77	31	44.24
Gilroy, Cal	41	78	37	37.00
Goshen, Cal	51	91	40	36.00
Honolulu, S. I	71	78	7	21.16
Hollister, Cal	48	73	25	36.00
Jacksonville, Florida	58	80	22	30.50
Los Angeles, Cal	55	67	12	34.04
Monterey, Cal	52	58	6	36.36
Milan, Italy	33	74	41	45.00
New York	31	77	46	40.37
New Orleans, Louisiana	55	82	27	29.57
Naples, Italy	46	76	30	40.52
Nice, France	47	75	28	43.00
Pajaro, Cal	49	58	9	36.00
Richmond, Virginia	73	77	44	37.00
San Francisco, Cal	48	58	10	36.36
Santa Barbara, Cal	56	66	10	34.24
San Diego, Cal	57	65	8	32.41
Sacramento, Cal	45	73	28	38.34
Stockton, Cal	49	72	23	37.56
San Mateo, Cal	46	59	13	37.00
San Jose, Cal	46	69	23	37.00
Salinas, Cal	47	65	18	36.00
Soledad, Cal	43	70	27	36.00
Savannah, Georgia	39	82	43	32.00
St. Augustine, Florida	59	77	18	30.05
Vallejo, Cal	48	67	19	38.05

The climate in the extreme northern part of the State is cold in winter and warm in summer, and is similar to that of the Eastern States.

The temperature of the coast is generally mild and pleasant in summer, but north of Santa Barbara is subject to chilly northwest winds. In winter the weather is chilly but not cold. The coast counties are subject to regular trade-winds and fogs for a distance of from six to ten miles inland. The fog at times is thick and wet, and is little less than a fine drizzly rain, beneficial to crops of nearly all kinds. These usually disappear about ten o'clock in the morning.

SEASONS.

The year is divided into two seasons, the wet and the dry. The wet season generally begins about the middle of November, sometimes a little earlier or later, and continues until April or May. There is occasionally a light shower in June or July. Between harvest and threshing time there is little danger of rain. Grain is often left lying in sacks upon the field for months, or until sold.

The wet season is much the pleasanter time of the year. It is called the rainy season, not because the rain falls continuously, but because it does not fall at any other time.

Plowing and seeding commence with the first heavy rains.

The average rainfall of the State is less than that of Liverpool and Rome, or of Chicago and St. Louis, and about the same as at Paris. In some localities, however, in the northern part of the State it is greater than in any of the places named.

The following table gives the average yearly rainfall by localities:

CITY OR TOWN.	COUNTY.	INCH'S.
Crescent City	Del Norte	34
Humboldt Bay	Humboldt	32
San Francisco	San Francisco	23
Monterey	Monterey	15
Santa Barbara	Santa Barbara	14
Los Angeles	Los Angeles	12
San Diego	San Diego	10
Bakersfield	Kern	5
Fresno	Fresno	7½
Sacramento	Sacramento	19
Redding	Shasta	30
San Jose	Santa Clara	15

While it is raining in the valleys the snow is usually falling in the mountains. It is probable that as much snow falls on the mountains in the eastern and northern parts of the State as in any part of the United States. From the north part of Sonoma, Napa and Solano counties northward, light snows fall on the low lands every winter.

IRRIGATION.

If the rainfall is less than ten inches during any season irrigation is necessary. Although there are few localities in the State where the average rainfall for a long series of years does not exceed ten inches, yet, in nearly all the counties south of Sacramento and San Francisco, there are often years when it is less. In the San Joaquin Valley and further south in the State, irrigation is general. It is always beneficial, and when provided, adds much to the value of the land, and causes it to produce astonishing crops.

Artesian water, which is found at various depths in the valleys, varying from 50 to 350 feet, is largely used for irrigation purposes. Ordinary wells are sunk to a depth of from 10 to 50 feet almost anywhere in the State and abundant water is found.

HEALTHFULNESS.

The climate of California is generally considered conducive to health. The hills and mountains and their valleys are considered very healthy. In the low lands, where overflowed, there are at certain seasons some miasmatic diseases. But there are no diseases peculiar to California alone.

Portions of the State have long been visited as health resorts, particularly in the winter seasons.

Among the many places most noted as health and pleasure resorts, may be mentioned Los Angeles, San Diego, San Bernardino, Santa Barbara, Monterey, Santa Cruz, Napa, San Rafael, Santa Rosa and St. Helena. In the mountains, in different parts of the State, are many valuable mineral springs. These are much visited for pleasure and health.

TIMBER.

California produces many varieties of valuable trees which grow both on the mountains and in the valleys. The greater portion of the Sierra Nevada mountains is covered with timber. The oak, manzanita, nut-pine, and other varieties, grow to an elevation of about 2,500 feet above the sea, and dense forests of cone-bearing trees are found at an altitude of 6,000 feet. The redwood is the second tree in size in the State, and the first in commercial value. It is used for lumber, fencing, ties and fuel, and for all kinds of rough and fancy building. It grows on the coast from one to thirty miles inland, and the forests extend from the north boundary of the State to the south boundary of Monte-

(CONTINUED ON PAGE 245.)

THE FRESNO COLONY.

VINEYARD AND FRUIT LANDS.

A GRAND EXCURSION

Will leave San Francisco, Oakland, San Jose, Sacramento, Napa, Stockton and Lathrop, for Fresno, April 20th, 1882.
Round Trip, good for five days, only $8.50,

To see those colonies, now famous for beautiful and profitable homes, where floods or drouths never come. A perpetual and never-failing supply of water deeded along with all land sold by us. Send for circulars or call on us. Tickets for sale after April 5th at all places named above, and at our office. Dear reader, we extend to you and your friends a cordial invitation to be with us. A pleasant and a prosperous people will welcome you. A glorious spring ride down through the broad, beautiful San Joaquin valley.

FRESNO COUNTY

Is acknowledged to be the Garden Spot of California. Its numerous Irrigated Colonies have proved that every kind of Tree, Vine or Plant that can be grown anywhere else in California can be successfully grown on its Irrigated Lands.

THE FRESNO COLONY,

Being located close to the thriving town of Fresno, the most prosperous town in the great San Joaquin Valley, offers superior inducements to people in search of homes. With a small capital and energy and prudence, any person can make a fortune in a few years on 20 acres of land in the Fresno Colony.

Fresno County has been proved to be the home of the Grape, Fig, Peach, Apricot and Prune; a land of Raisins and of Wine.

Title to land and water absolutely perfect. The title to the land is by U. S. patent, and the water has been purchased from the Fresno Canal and Irrigation Company.

TERMS—$1,000; $300 payable on purchase of lot; the balance in three years, with interest at 10 per cent. per annum.

For further particulars, circulars, or any information regarding lands in Fresno County, call on or address

THOMAS E. HUGHES & SONS,

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THE

STILLWATER ENGINES.

Return flue fire box boilers. Twelve, sixteen and twenty horse-power. Straw, wood or coal burners, with patent independent steam pump. Are the best finished and most perfect Engine manufactured for the field.

THE

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ENGINE.

Straw Burner with patent independent Steam Pump. Is a perfect Engine and a fit companion for our matchless CHIEF.

THE IMPROVED ELWARD'S

Equalizing Horse-Power.

Has no equal for lightness of draft, simplicity, durability and power.

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Makes to order Gents' Fine French Calf Boots from $6 to $10; Gaiters from $3 to $6; Alexis from $3.50 to $5; Mens' Heavy Kip Boots, $6; Oxford Ties, French Calf, $4; California Leather, $3 50; Men's Working Shoes from $2.50 to $3; Children's Shoes made to order. Persons in the country ordering to the amount of $12, I pay the express charges. I sell nothing but my own manufacture.

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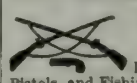

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California for Immigrants.

(CONTINUED FROM PAGE 243.)

rey county. The redwood tree is never found outside this State. The white oak grows to a considerable size, but it is of little value except for fuel. Laurel is one of the most beautiful trees of the coast, madrona the most striking. There are other valuable and beautiful trees in the State, such as the juniper, yew, walnut, cypress, poplar, willow, live oak, sycamore, buckeye, cottonwood, etc. The eucalyptus tree, or Australian gum, as it is sometimes called, when set out, grows in all the coast counties of the State most rapidly, and a grove of these in a few years becomes a forest. This wood is valuable for fuel.

SOIL.

The soil is much varied. In some of the valleys it is a loose, rich loam. In others it is an adobe soil which produces excellent crops when once under cultivation. The soil on the hills and mountains is rich and mellow, and is very easily worked.

The prairies are not covered with sod, and the first plowing is nearly as easy as the subsequent ones. The severe task of breaking prairie is not known in this State. The soil of the timber lands is similar to that of the timber lands in the Western States.

PRODUCTIONS.

The agricultural productions of California are more varied than those of any other State in the Union. The soil produces, with equal facility in the peculiar climates which are found here, the vines of continental Europe, the hardier cereals of North America, and the luxuriant fruits and flowers of the semi-tropics.

California is noted the world over for the excellent quality and size of her fruits.

The blooming of flowers in winter is the admiration of visitors.

Wheat, barley, oats, rye, buckwheat, Indian corn, broom corn and hops are extensively raised in nearly all parts of the State. California is the third largest exporter of wheat of all the United States. In quality California wheat is harder, dryer and stronger in gluten than that grown elsewhere in the United States. Fruits, barley, honey, wool and hides are exported in large quantities.

The State is also noted for its rich gold, silver and quicksilver mines, and is well supplied with coal, iron, copper, stone, and marble.

Garden produce of all kinds is easily raised everywhere. Peas, beans, onions, potatoes, pumpkins, squashes, melons, tomatoes, beets, carrots, radishes, cabbages, celery, sweet potatoes, etc.

The apple, pear, quince, peach, plum, prune, cherry, apricot, nectarine, olive and other fruits, and the English walnut, almond, chestnut and peanut thrive exceedingly well.

Blackberries, strawberries, raspberries, gooseberries, currants and other small fruits do well in very many parts of the State. The grape, both for wine and raisins, does exceptionally well, and raisins are competing successfully with the best brands of Malaga. France is also yielding the palm to California for the excellence of her wines.

The orange, lemon, lime, fig, pomegranate, etc., grow luxuriantly in the southern gardens and orchards. The fig does well as far north as Sacramento.

Tobacco and cotton are grown in the southern part of the State, and both promise to become important productions.

It has been demonstrated beyond question that California is well adapted to the raising of silk. Its equable climate and the rapid growth of the mulberry tree have proved in various parts of the State that the rearing of the silkworm will become an important branch of industry. It requires little or no capital, and can be carried on by the women and children of the family as an addition to other farm work. None of the diseases which have affected the worm in Europe have ever appeared in this State. Samples of the silk raised here have been sent to England, France and Italy, and the manufacturers have expressed the opinion that it is equal to that produced in the most noted districts of Japan and Asia Minor.

Alfalfa often produces three and even four crops of hay in a single season, and is considered invaluable for stock.

The climate is so mild that all vegetable life in ordinary seasons is almost as active in January as in July. Trees and shrubs have nearly twice as much time to grow and mature as in the Atlantic States.

DOMESTIC ANIMALS.

Horses, mules, cattle, sheep, goats and hogs are raised in every part of the State, and south of San Francisco can live through the winter months without shelter and without cultivated food. Fine blooded stock of all kinds has been introduced, and many farms are devoted specially to raising blooded animals. There are blooded stock farms in California unsurpassed in the world. Nutritious grasses grow voluntarily in abundance in the valleys and on the foothills and mountains during the wet season, and retain their nutritious qualities when dried by the summer sun; these make excellent feed for horses, cattle, sheep and hogs during the dry season. The late fall and early winter in California is the feeding season for stock when feeding is necessary.

MARKETS.

Good markets are to be found for all productions in the State. The mining districts furnish markets for farmers and fruit raisers situated within easy reach by wagon. Farming is generally profitable in this State, as elsewhere. Wheat, barley and various other crops can usually be sold on the land where produced, to the agents of millmen and shippers, who traverse the country making purchases. Wheat is shipped to Europe by sailing vessels. Fruits, honey, wool and hides are shipped to the Eastern States and cities by the overland railroads. The Southern Pacific railroad has also commenced carrying wheat, flour and other productions to New Orleans and the Southern States.

RAILROADS.

Although it is but thirty-five years since the discovery of gold in California, at which period the State was a vast wilderness, yet in that short time the progress of civilization has been rapid and permanent. Railroads have kept pace with the increase in population, and there are now twenty-three railroads in operation, including the main trunk lines and their branches, and many others are contemplated. Those in operation are the Central Pacific, main line; Central Pacific, Oregon division; Central Pacific, Western division; Central Pacific and Amador Branch railroad; Southern Pacific, Northern division; Southern Pacific, Tulare, Los Angeles, Yuma and Wilmington divisions; Los Angeles and Independence; California Northern; California Pacific and Northern Railway; Nevada County Narrow Gauge; North Pacific Coast; Northern Railway and Berkeley Branch; Northern Railway and San Pablo and Tulare Railroad; Sacramento and Placerville; San Francisco and North Pacific; San Luis Obispo and Santa Maria; Santa Cruz; South Pacific Coast; Stockton and Copperopolis; Vaca Valley and Clear Lake.

SCHOOLS, CHURCHES, AND BENEVOLENT ASSOCIATIONS.

Our common schools are the pride of the State. Free education is provided; so that it is within the reach of all. Wherever fifteen children can be gathered to form a school, it is entitled to support at the public expense.

In the large towns are first-class high schools. There are also a number of academies and colleges, some of them first-class institutions. There are also military, medical and theological schools. San Francisco supports three commercial colleges. Besides these are the State Normal School and the University, both supported by the State.

The leading church denominations are well established.

In all the leading towns the principal benevolent associations have organizations.

LANDS.

Private lands vary in price from two dollars and fifty cents an acre for unimproved lands remote from towns, to ten dollars an acre near towns; and from ten dollars to one hundred dollars an acre for improved land, according to value of improvements and proximity to large or small towns.

The IMMIGRATION ASSOCIATION is searching the United States Land Office records in California, to ascertain the exact location and quality of the millions of acres of vacant Government lands in the State, for the purpose of aiding immigrants to locate on them with the least possible expense and loss of time. There are Government lands in every county in the State, with two or three exceptions, but as to quality and exact location this Association has much yet to learn.

Title to the Government lands may be acquired under the Homestead, Pre-emption, Timber and Timber Culture laws.

HOMESTEAD LAW.

The word homestead, as now applied in the United States, signifies a tract of land given away by the Government as a free gift forever, on the single condition that the person accepting the gift shall live upon the land and cultivate it, and make it his home for five years. Any citizen of the United States, who is the head of a family, or an unmarried person over the age of twenty-one years, is entitled to a homestead of 160 acres. Persons of foreign birth may avail themselves of the benefit of this law by declaring their intention to become citizens; and this they can do immediately after their arrival in this country.

A person wishing to enter a homestead must go to the United States Land Office of the district, or to the Clerk of the county in which the land he wants is located, and file his application and affidavit in accordance with legal forms which will be furnished him by the Land Office. The Land Office fees are from $16 to $22, which must be paid at the time of filing the application. Within six months after filing his application at the Land Office the settler must commence living upon and improving the land, and thereafter, for five years, he must make the tract his actual home. A soldier who served not less than ninety days in the army during the late rebellion is required to live on the land five years, less the time he served in the army. At the expiration of five years, or within two years thereafter, on making proof at the Land Office by two competent witnesses, that he has complied with all the requirements of the law, and paying an additional fee of from $6 to $12, he will receive from the Government a complete and absolute title to the land.

Homesteads, until the issuing of the patents, are *free from taxation*, and cannot be taken away or sold for debt, but are absolutely secure to the settler so long as he *occupies and cultivates the land.*

If at any time after six months the homestead settler should desire to get a full title to his land he can do so by making proof of settlement and cultivation up to date, and paying the Government price of $1.25 or $2.50 per acre for the land, according to location—that is, within or without the boundary lines of railroad grants.

PRE-EMPTION LAW.

Any person qualified to take a homestead is also entitled to 160 acres under the pre-emption law (but not at the same time.) Within ninety days after settlement on the land he must file his application in the District Land Office where the land is located, which will cost $3. At any time after six months' settlement and up to thirty months after filing his application, the settler may pay for the land at the rate of $1.25 or $2.50 an acre, according to location.

TIMBER CULTURE LAW.

Under the timber culture act an applicant is entitled to 160 acres on any section naturally devoid of timber; the whole section must be devoid of timber. On one section, only one timber claim can be taken. It requires eight years to acquire a title. Actual residence is not required. The first year five acres must be broken. Second year must cultivate this five and break five more. Third year must plant the first five acres in trees and cultivate the second five acres. Fourth year plant the second five acres in trees, which make the ten acres. On the day of final proof 675 trees must be living and in a thrifty condition on each acre.

CAPITAL NECESSARY FOR NEW COMERS.

The question arises as regards the smallest sum considered necessary for a new comer to start with. An industrious man may come here almost without a dollar, hire out for some years, and work his way up by strict economy. But those who come here to make homes for themselves should have $500 to $1,000 to start with on even the cheapest foothill lands. There will be some years of close effort. Poultry must be kept, vegetables raised, odd jobs of work done for the neighbors. But thus, on even this small capital, a valuable property can be developed in the course of eight or ten years. A small piece of good land is better than a large piece of poor land. It is best to purchase only as much land as can certainly be paid for. Develop this thoroughly, and make it profitable, and more land can be had at some future time. Many failures have arisen from attempting too much. The new settler who deserves success, begins at bed-rock, keeps out of debt, buys as little as he can, wears his old clothes, works early and late, plants trees and vines for the future, leaves whisky alone, and has a definite aim and plan in life. Such a man can come to California with a small capital and find it a "good State for the poor man." Those who are content to work and be patient here will find the reward sure and ample. Is it not worth while to have a home in a land where there are no violent extremes of heat and cold, and where the farmer can work in comfort every month in the year?

WAGES.

Wages for ordinary day laborers range from $1.50 to $2.00 per day; good labor, requiring familiarity with the work in hand, brings $2.50, and skilled workmen, such as machinists, jewellers, etc., receive $3 and $4, and even more per day. Masons, carpenters, stone-cutters, etc., $3.50 to $4.00 per day. Harvest hands (with board), $2 and upwards. Regular farm hands, with board, per month, $20 to $30.

Wearing apparel is about as cheap as in the Atlantic States.

The following is a list of prices of some of the most important articles of immediate use to immigrants:

HOUSEHOLD GOODS.

Cooking stoves, furniture complete, $15 and upwards.
Tinware, about the same as Eastern prices.
Queensware, same as Eastern prices.
Tables, $2 and upwards.
Chairs, 60 cents and upwards.
Bedsteads, $3 and upwards.
Common carpet, two-ply, 75c to $1.25.
Common carpet, three-ply, $1.25 to $1.50.

FARMING APPLIANCES.

Wagons, $100 to $175.
Harness, $10 to $40.
Plows, $7.50 to $22.
Mowers, $100 to $250.

STOCK.

American farm horses, $75 to $150.
Half-breed and Mexican horses, $25 to $75.
Milch cows, $25 to $75.
Hogs, $5 to $9.
Sheep—Ewes, $1.50 to $5.
Rams, $10 to $50.

FRUIT TREES AND PLANTS.

Apple—1 and 2 years old, per 100, $12.50 to $20.
Pears—1 and 2 years old, per 100, $25 to $35.
Cherries—1 and 2 years old, per 100, $25 to $35.
Peach—1 year old, per 100, $20.
Plum and prune—1 and 2 years old, per 100, $20 to $35.
Apricots—1 and 2 years old, per 100, $25 to $35.
Nectarines—1 and 2 years old, per 100, $25 to $30.
Quinces—1 and 2 years old, per 100, $20 to $35.
Figs—1 and 2 years old, per 100, $20.
Oranges and lemons—1 and 2 years, from graft, each 75c to $1.50.
Persimmon—1 and 2 years, from graft, each 75c to $1.50.
Olives—each 50c to 75c.
Pecan—each 50c.
Almond—per 100, $20 to $25.
Filberts—each 50c.
Chestnut—each 50c to 75c.
English Walnut—each 25c to 50c.
Grapes—Foreign, per 100, $6.
Grapes—Raisin, per 100, $10.
Currants—per 100, $6.
Gooseberries—per 100 $5 to $6.
Blackberries—per 100, $3.
Raspberries—per 100, $3.
Strawberries—per 100, $2, (and special rates for greater number.)

OTHER TREES.

Blue Gum—per 100, $2 to $5.
Mulberry—each 75c.

FRUIT TREE STOCKS.

Pear—grafting size, per 1,000, $10 to $12,
Apple—grafting size, per 1,000, $12.
Cherry—grafting size, per 1,000, $12.
Plum—grafting size, per 1,000, $30.
Scions—pear, apple, plum and cherry, per 1,000, $5.

Railways as Civilizers.

It would be an impossible thing for a newspaper article to give even a faint conception of the results of the building of railroads. The last four decades have marked an era in human progress in this country in this respect equaled by nothing except the discovery of the art of printing.

Bring to the front the strongest emphasis every argument that can be urged against railroads, and yet the inestimable benefits to the country and to mankind outweigh them all. As a civilizer the railroad has no equal. Wildernesses disappear as if by magic, and the long lines of towns and villages stretching across the continent are the results of railroads. They advertise their lands, give accurate descriptions of them and distribute millions of circulars all over the old world, thus attracting a hardy immigration hither who convert the savage wilds of the West into blooming gardens. Suppose they do add wealth to their coffers, so does Uncle Sam by this increase of taxable wealth. It has not been many years since the maps, pored over by the school-boy, portrayed, sharply outlined, a vast, arid tract of country in the western plains, known as the Great American desert. Railroads penetrated it, people followed the railroads, irrigation was employed, and the man of to-day looks in vain for the terrible desert of his school days. The vast treasure caves of Colorado, Nevada and the West would still be sealed by the forbidding obstacles nature has interposed to guard her glittering stores, were it not for the magic influence of the railway lines which now rush over the deserts and plains and penetrate the vast and silent canyons of every mountain chain, unlocking the rock-bound caskets and bestowing the hidden treasures upon the hardy and enterprising seekers.

But the story is not yet half told. The limit of development is still far beyond human ken. There are depths yet unsounded, realms yet unexplored, which will in time respond to the shriek of the locomotive, and unfold untold riches to the explorer. So far civilization, development, wealth and refinement have been the results of railway extension into hitherto unknown regions to an extent that must overbalance the evils that many complain of. Every good is mixed somewhat with evil, but our country can well afford to put up with the crookedness of syndicates which have accomplished such wonderful work as the young West to-day presents.—*Exchange.*

TELEGRAPH MILEAGE OF THE WORLD.—A French statistician has calculated that if all the telegraph wires at present laid were tacked on end to end they would reach 46 times round the world. Belgium has a greater telegraph mileage in proportion to its superficial area than any country in Europe. Switzerland comes second and Great Britain third. Russia has the least.

RIVERSIDE COLONY LANDS.

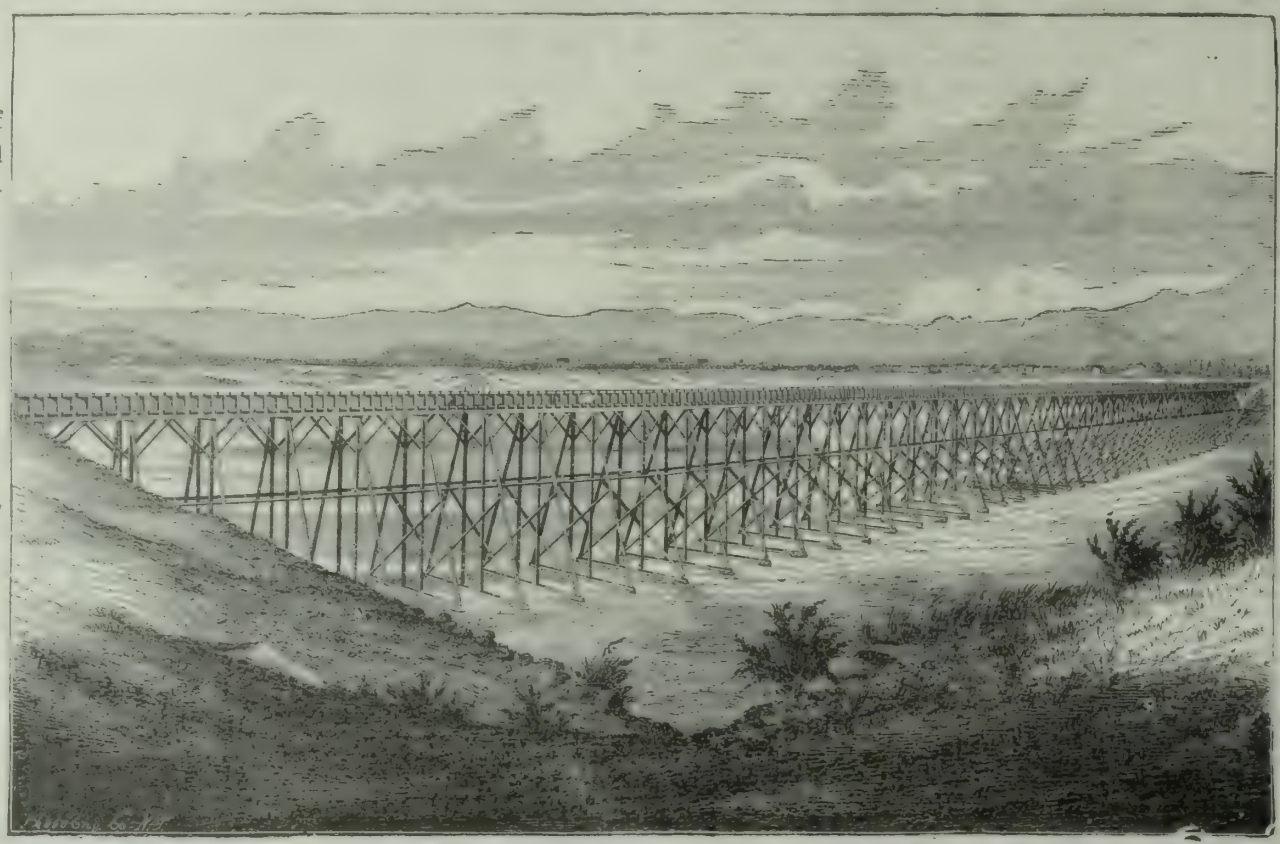
FIVE AND TEN-ACRE TRACTS
IN THE
VILLAGE OF ARLINGTON

Comprising one mile square, on the celebrated Magnolia and other avenues; the choicest locations in the whole Valley.

Also, a quantity of other lands scattered throughout the valley,

IMPROVED AND UNIMPROVED.

STREETS ALL GRADED, AND LAND LINES Planted to CYPRESS.



IRRIGATING FLUME, OR ACQUEDUCT, AT RIVERSIDE, CAL

All these lands are surrounded by

Valuable Improvements,

Many of the residences costing from $5,000 to $15,000 each.

PRICES FROM **$150 to $250** PER ACRE,

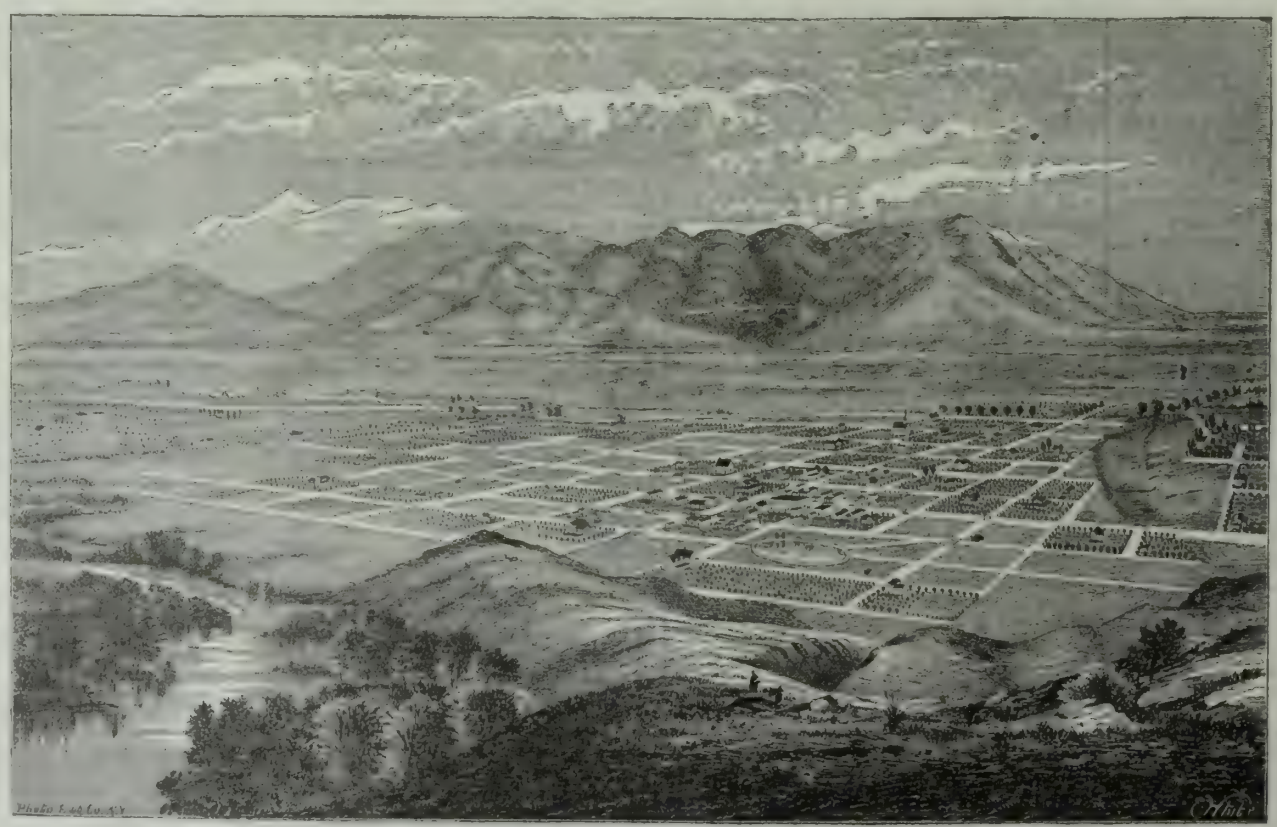
With one share of canal stock attached to each acre, giving perpetual water right (with water delivered to lands), and ownership in canals in pro rata proportion to lands that can be irrigated.

Terms to suit Purchasers, from One to Five Years.

POPULATION ABOUT 2,000.

CHURCHES AND SCHOOLS Well established.

Railroad Facilities EQUAL To any in the State.



VIEW OF RIVERSIDE AND THE MOUNTAINS LYING TO THE EASTWARD.

CLIMATE As Near Perfect AS MAY BE.

THE SOIL IS UNEQUALED, WITH UNQUESTIONED Water Supply.

The Quality of Citrus Fruits and Raisins Universally Acknowledged as Superior.

COME AND SEE FOR YOURSELVES, OR ADDRESS

S. C. EVANS, President, · · Riverside, Cal.

Chinese Immigration.

Full Text of the Bill as Passed by both Houses.

Following is the full text of the bill regulating Chinese immigration as it passed the House. No amendments were made in the latter body, it being accepted precisely as it came from the Senate. The only changes made by the Senate were in the enacting clause, extending the time of going into effect from 60 to 90 days, and the addition of sections 16 and 17, the former prohibiting the naturalization of Chinese, and the latter defining the words "Chinese laborers."

WHEREAS, In the opinion of the Government of the United States the coming of Chinese laborers to this country endangers the good order of certain localities within the territory thereof; therefore,

Be it enacted, etc., That from and after the expiration of 90 days next after the passage of this act, and until the expiration of 20 years next after the passage of this act, the coming of Chinese laborers to the United States be, and the same is hereby suspended; and during such suspension it shall not be lawful for any Chinese laborer to come, or, having so come after the expiration of said 90 days, to remain within the United States.

Sec. 2. That any master of any vessel of whatever nationality, who shall on such vessel bring within the jurisdiction of the United States any Chinese laborer from any foreign port or place, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of $500 for each and every such Chinese laborer so brought, and may be also imprisoned for a term not exceeding one year.

Sec. 3. That the two foregoing sections shall not apply to Chinese laborers who were in the United States on the 17th day of November, 1880, or who shall have come into the same before the expiration of ninety days next after the passage of this act, and who shall produce to such master before going on board such vessel, and shall produce to the Collector of the Port in the United States at which such vessel shall arrive, the evidence hereinafter in this act required of his being one of the laborers in this section mentioned; nor shall the two foregoing sections apply to the case of any master whose vessel, being bound to a port not within the United States, shall come within the jurisdiction of the United States by reason of being in distress or in stress of weather.

Sec. 4. That in order to the faithful execution of Articles I and II of the treaty between the United States and the Empire of China, ratified July 19, 1881, in case any Chinese residing in the United States on the 17th day of November, 1880, or who shall have come into the same before the expiration of ninety days next after the passage of this act, shall depart therefrom, they shall, before such departure, cause themselves to be duly registered at a custom house in the United States, and produce to the Collector of the district at which they shall seek to re-enter the United States the certificate of such registration and the Consular certificate in this act provided for.

Sec. 5. That, in order to the faithful execution of Articles I and II of the treaty before in this act mentioned, every Chinese, of any class or occupation whatever, who may be entitled by said treaty and this act to come within the United States, except such as resided in the United States on the 17th day of November, 1880, or who shall have come within the United States within 90 days next after the passage of this act, shall obtain the permission of the Chinese government in each case, to be evidenced by a passport issued by said government, which passport shall be in the English language, or accompanied by a translation into English, showing such permission, with the name of the permitted person in his proper signature, and which passport shall state the name, title, or official rank, if any, the age, hight and all physical peculiarities, former or present occupation or profession, and place of residence in China of the person to whom the passport is issued, and that such person is entitled by the treaty in this act mentioned to come within the United States. This passport and the identity of the person named in it shall, before such person goes on board any vessel, to proceed to the United States, be *vised* by the indorsement of the diplomatic representative of the United States in the empire of China, or of the consular representative of the United States at the port or place from which the person named in the passport is about to depart. Such passport shall be *prima facie* evidence of the facts set forth therein, and shall be produced to the Collector of Customs of the port in the district in the United States at which the person named therein shall arrive, and afterward produced to the proper authorities of the United States whenever lawfully demanded.

Sec. 6. That the Secretary of the Treasury shall forthwith cause to be prepared and kept at the custom houses of the United States proper books, in such form as he shall prescribe, for the registration of Chinese who shall be entitled, under the provisions of this act, to the privilege of entering and residing in the United States. Entry shall be made in such books of the name of every such Chinese, and his proper signature; his place of birth—giving town or district—date of birth, last place of residence before coming to the United States, place of residence in the United States, if any, names and residences of his parents, if any, date and place of arrival in the United States, employment or business, hight, and physical marks or peculiarities by which he may be identified. Every applicant for registration shall make oath to the facts stated in his registry, which oath shall be recorded in the book of registry. Collectors of Customs and their deputies shall have power to administer and certify to all oaths under this act.

Sec. 7. That it shall be the duty of the Collector of Customs to issue to every Chinese entitled to registry, and registered by him, at the time of registration, a certificate, in such form as the Secretary of the Treasury may prescribe, setting forth all the facts contained in such registration, and the data of identification prescribed in Section 6 of this act, which certificate shall be signed by the Collector of Customs of the district, or his deputy, and attested by his seal of office, dated the day of its issue, and upon which shall be written the proper signature of the person registered. A minute of the issuance of such certificate and date of issue shall be made in the book of registry on the margin of the registration. The certificate so issued to a Chinese shall be *prima facie* evidence of the facts therein stated.

Sec. 8. That any person who shall knowingly make a false statement under oath in the registration of any Chinese under the provisions of this act shall be deemed guilty of perjury; and any person who shall register at more than one custom house in the United States, or procure more than one certificate of registration, or alter or substitute any name for the name written on such certificate, or forge any such certificate, or utter any forged or fraudulent certificate, or falsely personate any person named in any such certificate, shall be deemed guilty of a misdemeanor; and upon conviction of any offense mentioned in this section, the guilty person shall be fined in a sum not exceeding $1,000, and imprisoned in a penitentiary for a term not more than five years.

Sec. 9. That the master of any vessel arriving in the United States from any foreign place hall, at the same time he delivers a manifest of his cargo, and if there be no cargo, then at the time of making a report of the entry of the vessel pursuant to law, in addition to the other matters required to be reported, and before landing, or permitting to land, any Chinese passengers, deliver and report to the Collector of Customs of the district in which such vessel shall have arrived a separate list of all Chinese passengers taken on board his vessel at any foreign port or place, and all such passengers on board the vessel at that time. Such list shall show the name of such passengers (and if accredited officers of the Chinese government traveling on the business of that government, with a note of such fact), and the names and other particulars, as shown by the respective passports and certificates, by the master in the manner required by law in relation to the manifest of the cargo. Any refusal or neglect of the master to comply with the provisions of this section shall incur the same penalties and forfeitures as are provided for a refusal or neglect to report and deliver a manifest of the cargo.

Sec. 10. That before any Chinese passengers are landed from any such vessel, the Collector, or his deputy, shall proceed to examine such passengers, comparing the passports and certificates, as the case may be, with the list and with the passengers, and no passenger shall be allowed to land in the United States from such vessel in violation of law.

Sec. 11. That every vessel whose master shall knowingly violate any of the provisions of this act shall be deemed forfeited to the United States, and shall be liable to seizure and condemnation in any district of the United States into which such vessel may enter or in which she may be found.

Sec. 12. That if any consular officer, on examination of the claims and identity of any Chinese proposing to depart to the United States, shall be satisfied that such person seeks so to do in violation of this act, he shall refuse to certify to the right of such person to so depart; and every Collector of Customs shall refuse to allow any Chinese to enter the United States if he shall discover that such entry is unlawful under this act.

Sec. 13. That any person who shall knowingly bring into, or cause to be brought into, or shall aid or abet the bringing or coming into the United States by land, or who shall land, or aid or abet the landing in the United States from any vessel of any Chinese not authorized by law to enter the United States, shall be deemed guilty of a misdemeanor, and shall, for each person so brought or aided to come into the United States, or so landed, be fined in the sum of $100, and imprisoned for a term not exceeding one year.

Sec. 14. That no Chinese shall be permitted to enter the United States by land without producing to the proper officer of customs the certificate herein required of Chinese seeking to land from a vessel; and any Chinese who shall knowingly come into the United States contrary to the provisions of this act, shall be deemed guilty of a misdemeanor, and on conviction thereof, shall be punished by a fine not exceeding $100, or by imprisonment not exceeding one year, or both said punishments, in the discretion of the court; and any Chinese unlawfully entering within the United States, or who shall have unlawfully entered the United States in any way, either by land or by water, shall be removed therefrom by the Collector of Customs of any collection district in which such Chinese may be found, at the cost of the United States, under such regulations as the Secretary of the Treasury may prescribe.

Sec. 15. That this act shall not apply to diplomatic and other officers of the Chinese government traveling upon the business of that government, whose credentials in the usual form shall be taken as equivalent to the passport in this act mentioned, and shall exempt them and their body and household servants from the provisions of this act as to other Chinese.

Sec. 16. That hereafter no State court or court of the United States shall admit Chinese to citizenship, and all laws in conflict with this act are hereby repealed.

Sec. 17. The words "Chinese laborers," wherever used in this act, shall be construed to mean both skilled and unskilled laborers, and Chinese employed in mining.

A Princeton Reunion.

The second reunion of the Princeton College Association of the Pacific Coast, on the evening of the 15th inst., in San Francisco, was a very happy event to those present, recalling scenes and reminiscences of earlier and maturer years, which all collegians appreciate. This association, including all who spent some time in the college of New Jersey or Nassau Hall, whether graduates or not, now has on its roll 60 names of those scattered throughout the Pacific States and Territories. With regard to this college, one of the oldest and most distinguished in the Union, now in its 136th year, a common error has prevailed among those not intimately acquainted with its history. It is often confounded with the equally-noted Presbyterian Theological seminary, which is also located at Princeton, and to which many graduates of the literary and scientific college go when it is their intention to enter the ministry of some Protestant denomination; for many clergy besides Presbyterians pass through that seminary. At the literary college, so justly celebrated in the annals of our country from anti-revolutionary times to the present, many Catholics as well as Protestants have graduated, though its Faculty is composed of eminent ministers and laymen of the Presbyterian church. Drs. McCosh, Atwater and Cameron are distinguished among the former class, and Profs. Arnold Guyot and Stephen Alexander among the latter. It should be remembered, then, that the college and the theological seminary at Princeton are entirely separate institutions.

More than half the college association for this coast are laymen. Because of the area over which the members of this association are scattered but few can attend these pleasant reunions. Thirteen were present at this reunion, as follows: Rev. Albert Williams, class of 1829; Judge John S. Hager, class of '36; Rev. John Edwards, '48; James F. Foulkes, M. D., '49; Maj. Harry I. Thornton, '54; Judge S. F. Bigelow, '57; J. W. A. Wright, '57; Maj. John B. Mhoon, '59; Rev. F. E. Shearer, '62; S. P. Kelly, '65; Rev. J. P. Egbert, '74; Rev. H. H. Wikoff, '74; D. Wills, Jr., '81. Nearly half the above number are natives of Southern States, many Southern parents, both before and since the war, having sent their sons to Princeton college, or, as it is familiarly known, far and wide, "Nassau Hall"

The features of this reunion were a preliminary business meeting, and an elegant dinner in private rooms of the Palace hotel. Rev. Mr. Williams is president, Major Mhoon was chosen as secretary, and Major Thornton as a member of the executive committee.

In the business meeting a cheering letter was read from Dr. James McCosh, now President of the college, as he has been since 1868, when he was invited from Scotland to accept that position, as Dr. John Witherspoon was just 100 years before. Among other facts he gave the following number of students for the last 14 scholastic years, ending each June: 1868, 264; 1869, 281; 1870, 328; 1871, 364; 1872, 379; 1873, 376; 1874, 417; 1875, 408; 1876, 483; 1877, 472; 1878, 496; 1879, 495; 1880, 473; 1871, 488; 1882, 537.

In 1868 there were 19 instructors, now there are 37. He briefly sums up the course of study as embracing "the more important languages, ancient and modern, classical and continental, including Sanscrit and Anglo-Saxon;" and says that, of the English language and literature there are three professors, and in the sciences thirteen, most of them pursuing, by aid of the students, original researches in astronomy, physics, chemistry, biology, geology and physical geography. He shows that a new chapel, at a cost of $120,000, (the gift of a Mr. Marquard, who formerly presented the college with a gymnasium), will be completed by the next commencement in June. During the last fourteen years, several million dollars, the donations of individuals, have been expended in the erection of first-class stone buildings for various purposes, so that the old college is now as thoroughly equipped in every respect as is any institution of learning.

It is a valuable fact to which Dr. McCosh calls attention in his letter, and which every student of Princeton has realized, that its faculty do not neglect the moral and religious training of the young men entrusted to their care.

At the banquet, from 8 to 11 P. M., came a true "feast of reason and flow of soul." Social converse, friendly chat, recitals of college experiences, interspersed with mirth and jollity, prevailed. All were called on for after-dinner speeches, and almost every one took part in them. For the time the great and vastly changed world of the present was forgotten, and they lived their college days again. The memories of those present, and the information they gave, extended back from last year to more than half a century.

Several special toasts were responded to as follows: "Our Alma Mater," Judge J. S. Hager; "Princeton College, as a National Institution," J. W. A. Wright; "The South, as a Patron of Princeton," Maj. H. I. Thornton; "Dr. McCosh, and the Faculty," Rev. J. P. Egbert; "The Princeton Ministry," Rev. John Edwards; "The Progress of Princeton," Rev. F. E. Shearer.

Space permits us to give only a few historical facts touching upon Princeton and Princetonians from Judge Hager's remarks. The college was first chartered in 1746. It received a second charter in 1748, and that year graduated its first class. In 1783 Congress met in the college buildings. Among the signers of the Declaration of Independence were three Princeton men—Richard Stockton, one of its first graduates, also Benj. Rush and President Witherspoon. Eight Princetonians were signers of the Articles of Confederation, and the following eight were members of the Convention which adopted the Constitution of the United States: Gunning Bedford, Wm. R. Davie, J. Dayton, Wm. C. Houston, Luther Martin, Oliver Ellsworth, James Madison and Wm. Patterson.

Princeton has furnished one President of the United States, James Madison, and two Vice-Presidents, Aaron Burr and George M. Dallas; also to Congress, 48 Senators and 116 Representatives, 27 of its graduates being members of the first National Congress. It has furnished one Chief Justice of the U. S., Oliver Ellsworth, and six Associate Justices, viz.: Patterson, Livingston, Thompson, Johnson, Wayne and Harlan. Of its graduates, 13 have been U. S. District Judges, 27 Governors of States, 42 college Presidents, 18 Cabinet officers and 16 ministers and envoys to foreign powers. To the judiciary of our States it has contributed 10 Chancellors, 64 Associate Justices and 21 Chief Justices; among the latter, Reeve, of Connecticut; Lewis, of New York; Rush, of Pennsylvania; Booth, of Delaware; Archer, of Maryland; Hutchinson, of Virginia; Nash, of North Carolina; Stone, of South Carolina; Lumpkin, of Georgia; Walker, of Alabama, and Bibb, of Kentucky.

Princeton men naturally review with pride the valuable services of their Alma Mater to our country at large, and the solid educational advantages it has afforded to many engaged in the various useful pursuits of life. For the convenience of any youths on the Pacific coast who may wish to enter Princeton, examinations will be held in San Francisco on the 22d and 23d of June next, at a place yet to be designated, and of which timely notice will be given.

J. W. A. W.

CURIOUS ACOUSTIC PHENOMENON.—M. Reulaux reports a singular instance of the production of sound by natural causes. During a hunt upon the Roderbacherthal he passed through a valley, broad upon the eastern side, but narrowing rapidly towards the west, so as to form a kind of defile. The wind was blowing from the southwest, and the observer was marching upon the eastern declivity, when he seemed to hear repeated strokes of a fine deep-toned bell. There was no bell in the neighborhood, and other sounds which he heard soon proved that the phenomenon was meteorological. The sounds increased in intensity, and then diminished after having passed through a maximum. They resembled, at times, those of an organ, and at other times those of a harp or violin. At the entrance of the defile, from which the sounds seemed to come, there arose a strange agitation of the air, when the sounds became confused, and some of the notes suddenly ceased. M. Relaux supposes that currents of air were forced through the gorges, and that the sound was due to a conflict between the exterior and interior air, which produced musical vibrations. There was a very marked difference of temperature between the upper and lower portions of the valley, so that the upper and cold current pressed upon the lower and warmer air, thus closing the gorge so as to make a kind of tube. There appeared to be no wind, except in the lower part of the gorge.—*Les Mondes.*

A SCHOOL FOR BRAKEMEN.—The Erie is fitting up one of the buildings of the new car shops at Hornellsville with an ingenious apparatus, with which their brakemen will be taught the management of the air-brake. The instruction is afforded by a set of air-pipes, equal in length to what is required for a passenger train of 12 cars. This is laid at a hight of about six inches from the floor, and three air-brake cylinders are connected with the pipes. The air-pump is fastened against the wall, and is operated by steam, which is carried through a pipe from a locomotive in the round-house. The model is perfect in all points, and its workings can be illustrated as clearly as if the brakes were attached to a train. It is believed that by familiarizing the brakemen with the air-brake, many accidents, due to the ignorance of its workings, may be averted.—*Buffalo Express.*

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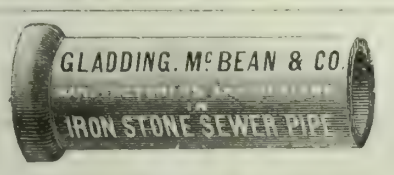

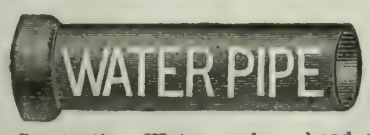

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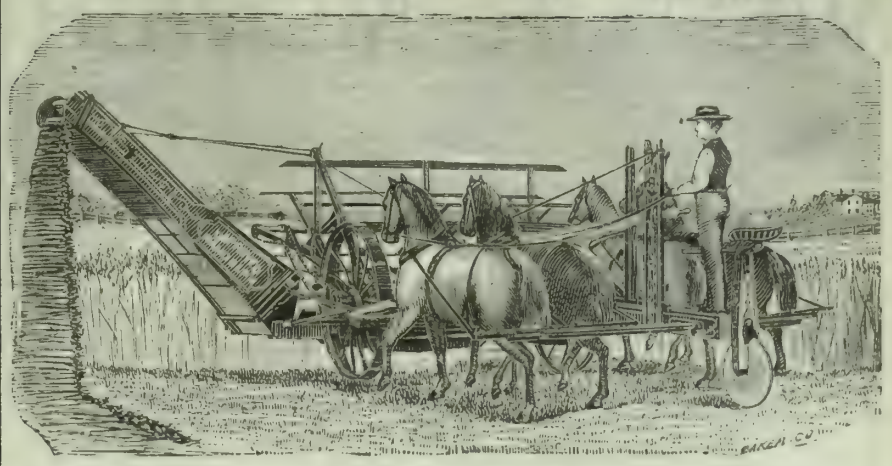

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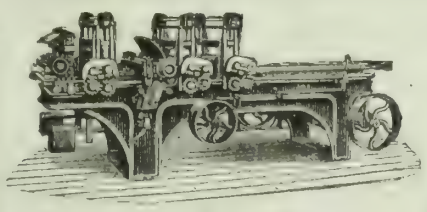

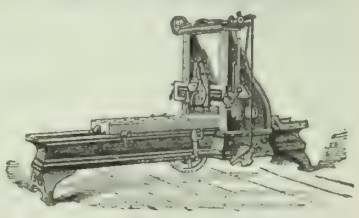

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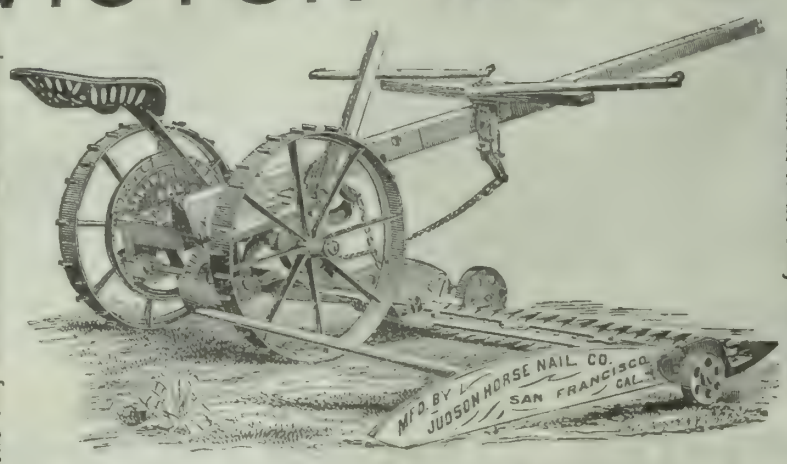

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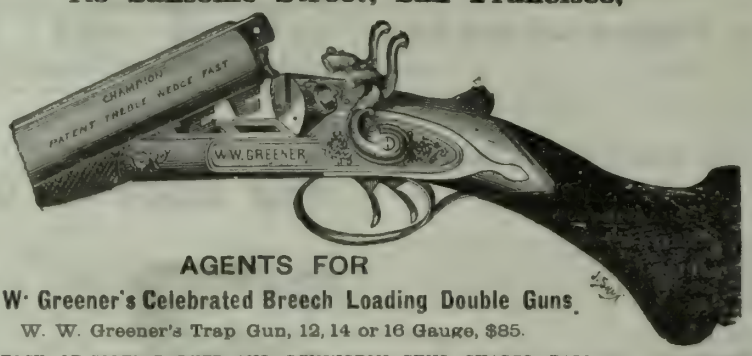

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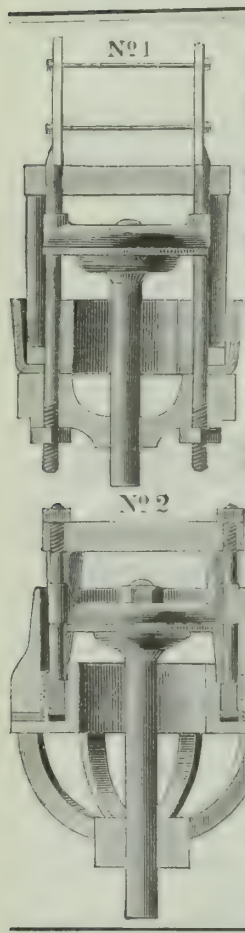

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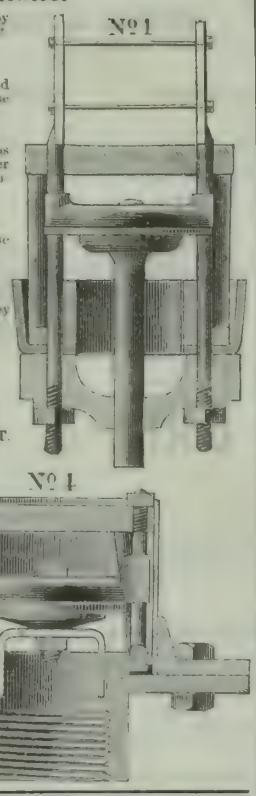
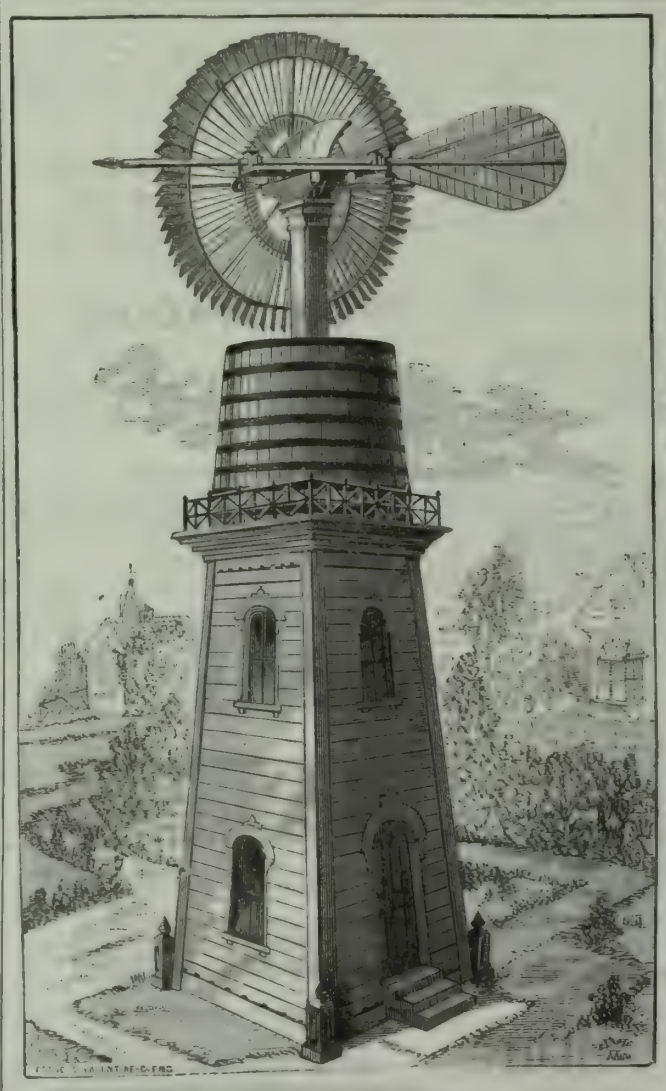




"EUREKA" LATEST IMPROVED SELF-REGULATING WINDMILL.

The STRONGEST, MOST DURABLE, LESS COMPLICATED and LIGHTEST RUNNING WINDMILL known. Can be set on a Tank House single post, or skeleton frame, as required. ☞ Before giving your orders, send for our Circular and Lowest Prices.

WINDMILLS HORSE-POWERS, TANKS, PUMPS and all kinds of Pumping Machinery built to Order.

F. W. KROCH & CO., 51 Beale Street, S. F.

IMPERIAL EGG FOOD.

Will make your Hens Lay, keep them in the best possible condition and ward off disease. When fed according to directions, sick and drooping fowls are never seen. It furnishes the needed material for forming bone, muscle and feathers, and is Invaluable for Young Chicks and Moulting Fowls. It comes packed in various sized packages, and being a powder, is easily mixed with the customary feed. Give it a trial. Send Stamp for Circular and Testimonials.

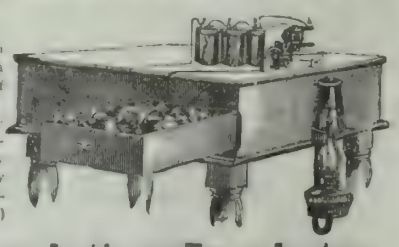
Price.—Single pound, 50 cents; Two and a half pounds, $1.00; Six pounds, $2.00; 25 pound keg $6.25. Address,

G. G. WICKSON,
General Pacific Coast Agt.
No. 319 Market St.,
San Francisco,
California.

MONEY IN CHICKENS AND EGGS.

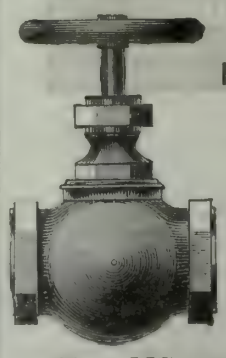
—The Eclipse Self-Regulating Incubators are now in actual use in most parts of this State, and giving general satisfaction. They are a success and being such are invaluable to all who attempt to raise chickens; are easy to manage, and cost merely a trifle to keep in operation, and will do much better work than can be done with hens, with a small portion of the labor and risk.

☞ The "ECLIPSE" is the only entirely self-regulating incubator known; is the only one that will bear investigating, so it is the only safe one to purchase. Send stamp for Circular of California Testimonials (not Eastern.)



The Eclipse Self-Regulating Incubator.

W. R. ALLEN & CO.,



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Iron Pipe and Fittings,

Lift and Force Pumps,

Brass Cocks and Valves,
For Steam, Water and Gas,

Sheet Zinc, Iron Sinks,

Plumbers' Goods.

Nos. 327 and 329 Market Street, Cor. Fremont, S. F.

CYPRESS TREES, $4 PER 1,000.

I will send to any address 1,000 Monterey Cypress trees, 2 to 8 inches high, upon receipt of $4; 4 to 10 inches high $5 per 1,000; 8 to 15 inches high $7 per 1,000; 10 to 20 inches, $10. Fresh Monterey Cypress Seed, postpaid by mail, $2 per lb. GEO. R. BAILEY, Berkeley, Cal.

MERRILL'S PATENT REIN HOLDER.

This is a sure and certain preventative to keep horses from running away. **Price $2.50.** Address W. P. MERRILL, Florin, Sacramento Co., Cal.

NEW ROCHELLE AND LAWTON

BLACKBERRIES

(Rooted), 50c per dozen, $2.50 per hundred. By mail, 50c per hundred extra. J. D. ENOS, Napa, Cal.

REMOVED DEWEY & CO.

Patent Agency and Newspaper Offices, to 252 Market St., cor. of Front. Take elevator. 12 Front St.
S. F. NOV. 1st, 1881

BREEDERS' DIRECTORY.

Six lines or less in this Directory at 50 cts a line per month.

CATTLE.

COL. C. YOUNGER, Forest Home Herd, San Jose, Cal. Breeder of Short-Horn Durhams, and pure bred Cotswold Sheep. Young Bulls and Bucks always for sale. Herd took Gold Medal, 1881.

WILLIAM NILES, Los Angeles, Cal. Thoroughbred Poultry, Cattle and Hogs. Write for circular.

PETER SAXE & SON, Lick House, S. F. Importers and Breeders for past *eleven* years. Berkshires, "Jerseys," "Short Horns," and all varieties of Sheep, and their grades.

COTATE RANCH BREEDING FARM, Page's Station, S. F. & N. P. R. R., Sonoma County. Wilfred Page, Manager. P. O. address, Petaluma, Cal. Short Horn Bulls and Cows, Spanish Merino Bucks and Ewes, for sale at reasonable figures.

MRS. M. E. BRADLEY, San Jose, Cal. Breeder of recorded thoroughbred Short Horn cattle and Berkshire hogs. A choice lot of young stock for sale.

J. ALEXANDER, Stockton, Cal. Breeder of first-class Dairy Stock and Berkshire Swine. Half and three-quarters Jersey cow and heifer for sale.

R. J. MERKELEY, Sacramento, Cal. Breeder of Short-Horn Durhams and Norman-Percheron horses.

ROBT. BECK, San Francisco. Breeder of Thoroughbred Jersey cattle. Herd took Six Premiums of the eleven offered at State Fair, 1881.

GEO. BEMENT, Redwood City, San Mateo Co., Cal. Breeder of Ayrshire Cattle. Several fine young Bulls, Yearlings and Calves For Sale.

SYLVESTER SCOTT, Cloverdale, Sonoma county. Breeder of Thoroughbred Durham Cattle. A few choice young bulls for sale.

R. NOELL, Grass Valley, Nevada Co., Cal. Breeder and Importer of Thoroughbred Jerseys.

R. McENESPY, Chico, Butte Co., Cal. Breeder of Thoroughbred Devons.

HENRY PIERCE, 728 Montgomery Street, S. F. Breeder of Jersey, Guernsey and Ayrshire Cattle.

B. F. FISH, Santa Clara, Cal. Breeder of thoroughbred Jersey Cattle and Black Hawk Comet horses

HORSES.

J. R. ROSE, Lakeville, Sonoma Co., Cal. Breeder of Thoroughbred Devons, roadster horses and Percheron draft horses.

E. A. SACKRIDER, 325 Eleventh St., Oakland, Cal. Importer of Norman-Percheron horses. Horses on hand and for sale at reasonable terms.

WM. FARRINGTON, Santa Clara, Cal. Breeder of Norman horses; owner of the horse "Cunard," of stock of Perry's importation.

W. A. MUNNION, Dixon, Solano Co., Cal. Owner and Breeder of the celebrated Jack, "John Henry." Took First Premium State Fair, 1881, also Percheron Half-breeds.

JAS. A. PERRY, of River View Stock Farm, Wilmington, Ill., has in Petaluma, Sonoma county, several fine Norman stallions of his last importation direct from France. Catalogues on application to Jas. A. Perry, Fashion Stables, Petaluma Cal.

SHEEP AND GOATS.

L. U. SHIPPEE, Stockton, Cal. Importer and Breeder of Spanish Merino Sheep. Durham Cattle, Essex and Berkshire Swine. High Graded Rams for sale.

J. B. HOYT, Bird's Landing, Solano Co., Cal. Breeder and Importer of Shropshire Sheep. Rams and Ewes for sale. Also, cross-bred Merino and Shropshire.

E. W. WOOLSEY & SON, Fulton, Sonoma Co., Cal. Importers and Breeders of choice Thoroughbred Spanish Merino Sheep. City office, No. 418 California St., S. F.

POULTRY.

THE PACIFIC COAST THOROUGHBRED POULTRY ASSOCIATION. 1011 Broadway, Oakland, Cal., J. M. Halsted, Manager. All the leading varieties of land and water fowl for sale. Eggs from Plymouth Rocks, Buff and Partridge Cochins, Light and Dark Brahmas, Brown Leghorn, Black Spanish, Houdans, etc., $2 per dozen. Langshans, $3. Bronze Turkeys, $4. Dealers in Incubators, Brooders, Egg Testers, etc. Send stamp for circular.

T. D. MORRIS, Sonoma, Cal. Importer and Breeder of Thoroughbred Poultry. Brahmas, Cochins, Langshans, Plymouth Rocks, Polands, Hamburgs, Leghorns, Dorkings, Black Spanish, White Holland and Bronze Turkeys, Toulouse and Embden Geese, White Guineas, etc. Eggs and Fowls for sale. Send for price list.

TOULOUSE GEESE at $15 per pair; $20 per trio; Eggs, $8 per dozen. Bronze Turkeys, $10 per pair; Eggs, $4 per dozen. Address T. D. Morris, Sonoma, Cal., breeder and importer of all kinds of thoroughbred poultry.

H. S. SARGENT, Stockton, Cal. Importer, Breeder and Shipper of Poland China Pigs, and Bronze Turkeys.

MRS. L. J. WATKINS, San Jose, Cal. Premium Fowls, White and Brown Leghorns, Plymouth Rocks, Pekin Ducks, etc.

A. O. RIX, Washington, Alameda County, California. Breeder of Thoroughbred Poultry. Send for Circular.

MRS. M. E. NEWHALL, San Jose, Cal. Bronze Turkeys, Brown and White Leghorns, Plymouth Rock, Pekin Ducks.

L. C. BYCE, Petaluma, Cal. Breeder of Thoroughbred Poultry. Illustrated circular free.

J. M. HALSTED'S NEW INCUBATOR. Price $20. No. 1011 Broadway, Oakland. Send for circular

SWINE.

T. WAITE, Brighton, Sacramento Co. Breeder of Thoroughbred Berkshire Hogs and choice Imported Poultry. Took Premium State Fair, 1880 and 1881 of Leghorns (brown and white), Speckled Hamburgs, Plymouth Rocks and Pekin Ducks.

JOHN RIDER, Sacramento, Cal. Breeder of Thoroughbred Berkshire Swine. My stock of Hogs are all recorded in the American Berkshire Record.

TYLER BEACH, San Jose, Cal. Breeder of thoroughbred Berkshires of stock imported by Gov. Stanford

BEES.

J. D. ENAS, Sunnyside, Napa, Cal., Breeds Pure Italian Queen Bees. Comb Foundation.

IMPROVED

EGG FOOD

To Keep Hens Healthy

AND MAKE THEM LAY.

The IMPROVED EGG FOOD is composed of more than twenty-five different articles. Every article tested by chemical analysis and thereby shown to possess the desired qualities to keep hens healthy and make them lay, as well as to promote the health and cure every disease of young chickens, ducks, turkeys, geese and every kind of fowl.

The IMPROVED EGG FOOD is now fully decided (by hundreds who have tried it), to be indispensable to all who keep poultry and would make them profitable. To those who have not tried it, I would say, GIVE IT A TRIAL. I am manufacturing this in large quantities, and have reduced the price accordingly.

1-lb. Boxes, 40 Cts. 3-lb. Boxes, $1.
10-lb. Boxes, $2.50. 25-lb. Boxes, $5.

B. F. WELLINGTON, Prop'r.

Also, Importer and Dealer in Seeds.

425 Washington St., San Francisco.

GEO. TREFZER, Napa City, Cal.

Breeder and shipper of the following varieties, will sell after this day at greatly reduced prices, as sickness in the family compels me to reduce my stock. My breeding yard of Black Cochins (1 cock and 7 fine hens), all good birds, including my imported trio for which I paid $25 in the East—eggs, $2 per setting. My breeding yard of Brown Leghorns, consisting of 1 fine imported cockerel and 10 fine hens for $20; eggs, $2 per setting, or 2 settings for $3. White Leghorn eggs, $2 per setting or 2 settings for $3. Have as fine a White Leghorn cockerel in my breeding yard as can be found in America. Plymouth Rocks, $6 per pair or $8 per trio; eggs, $2 per setting, or 2 settings for $3. My Plymouth Rocks breeding yard consists of 1 very fine imported cockerel from James E. White, and 8 fine hens and pullets. Langshan eggs, $4 per setting; no fowls of this variety for sale this season. Pekin Ducks, $2 each; eggs, 11 for $2. Toulouse Geese eggs, $4 per setting of 6. Anybody that wants to buy fine Fowls for little money have an opportunity to do so now. Please address as above.

MAKE HENS LAY.

An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable. Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

PETALUMA INCUBATOR.

[Illustrated in RURAL PRESS, Dec. 3, 1881.]

Awarded the first premium over the Axford or National and others at the Petaluma fair of 1881.

Furnishing ample heat, easily managed and nothing to get out of order.

PRICES.

200 Egg capacity	$60.00
360 Egg capacity	75.00
600 Egg capacity	90.00

I. L. DIAS,
Manufacturer and Proprietor,
Box 242, Petaluma, Cal.
WIESTER & CO., 17 New Montgomery St., S. F., Agt's

LAUREL RANCH!

Thoroughbred

Spanish Merino SHEEP.

We offer for sale 400 HEAD OF YOUNG EWES AND RAMS. Prices always reasonable and terms liberal. Quality and condition superior to any flock in this State.

J. H. STROBRIDGE, Haywards, Alameda Co.
E. W. PEET, Agent.

CARP FISH

FOR SALE.

Can be forwarded by express, or rail or water, with safety. Inquire of LEVI DAVIS,
Forestville, Sonoma County, Cal.

BERKSHIRES A SPECIALTY.

My Berkshires are Thoroughbred, and selected with great care from the best herds of imported stock in the United States and Canada, and for individual merit cane not be excelled. My breeding stock are recorded in the "American Berkshire Record," where none but pure bred Hogs are admitted. Pigs sold at reasonable rates. Correspondence solicited.

JOHN RIDER,
18th and A Streets, Sacramento City, Cal.

YOUR NAME on 50 fine Chromos, or 40 Comic transparent cards, 10c. Wise & Co., Clintonville, Ct.

CHEAP CASH GROCERIES

— AT —

NEUMAN'S.

All kinds of Fancy and Staple Groceries, wholesale and Retail, at their Stores,

323 to 331 Sixth St., 1307 Polk St.,

— AND —

1144 AND 1146 FOLSOM ST., S. F.

Goods delivered to any part of the city, or to any railroad, steamer or vessel, free of charge.

Country Orders Specially Solicited.

All such orders must be accompanied by a check or cash. All goods promptly delivered and warranted as to quality.

☞Orders most respectfully solicited.

SHORT HORNS FOR SALE.

I have for sale at my ranch, near Oroville, Butte county,

12 Young Short Horn Bulls,

From one to two years old. Price from $100 to $200 each.

ALSO

50 Short Horn Cows and Heifers.

All these cattle are red Durham—all thoroughbred. They are offered at private sale to those wishing to secure good stock. MOSES WICK.

Oroville, Butte Co., Cal.

Short Horn Bulls For Sale.

The undersigned now have for sale a few choice Thoroughbred and high grade bulls from the best milk strains Our herd consists of "Young Marys," "Daisies," "Imp Britannias," etc. Prices Reasonable.

HYDE & MOORE, Visalia, Cal.

We have for sale at our farm at Mountain View, thoroughbred

BERKSHIRE PIGS

From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880. Pigs from Imported Boar and Sow, $25 each. From Imported Boar and Thoroughbred Sow, $10 to $20. Our Imported Pigs are as nice Pigs as there are in the State. Address JACKSON & TRUMAN, S. F.

Duroc, or Red Hogs.

The undersigned are making a specialty of raising this celebrated breed of hogs for breeding purposes. They are gentle, thrifty and of very rapid growth, and better adapted to this climate than any other breed of hogs. We have hogs of this breed now upon our ranch, 11 months old, weighing over 400 lbs. each N. W. Spaulding, U. S. sub-Treasurer, San Francisco, killed one of these hogs Dec 14, 1881, at the age of 16 months, that weighed 583 lbs gross, and 584 lbs dressed.

On Dec. 22, 1881, Messrs. Zimmerman, Strouse & Co., of the Bay City market, S. F., killed one weighing 1018 lbs. net when dressed, 3 years and 3 months old. We are prepared now to ship to any part of this State these pigs 6 to 12 weeks of age For prices and circulars address,

HINCKLEY & GETCHELL,
Laurelles Ranch, Monterey, Cal.

POULTRY.

Hogs & Cattle.

Langshans, Brahmas, Cochins, Leghorns, Houdans, Plymouth Rocks, W. F. Black Spanish, Guinea Fowls, Aylesbury, Rouen and Pekin DUCKS. Bronze and White Holland TURKEYS. Peacocks, Etc. Also, Eggs for Hatching.

Dish-Faced Berkshire Pigs, Poland China Pigs, Jersey Cattle, etc.

PACIFIC COAST POULTRY AND STOCK BOOK.

New Edition, over 100 pages, Handsomely Illustrated Price by mail, 50 cents.

Stock or Eggs for Hatching guaranteed true to name, and to arrive safely. For further information please write, enclosing stamp. Circular and price list sent on application. Address

WILLIAM NILES,
Los Angeles, Cal.

LITTLE'S SHEEP DIP.

Price Reduced

TO $1.25 PER GALLON.

Twenty gallons of fluid mixed with cold water will make 1,200 gallons Dip.

Apply to FALKNER, BELL & CO., San Francisco

To Fish Raisers.

I am now ready to sell Carp which were imported from Germany in 1872, in lots to suit. Address

J. A. POPPE, Sonoma, Cal

GRANGERS' BANK

Of California,

SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,000,

In 10,000 Shares of $100 each.

Capital Paid up in Gold Coin, $531,200.

Reserve Fund and Paid up Stock, 21,178.

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CURRENT ACCOUNTS are opened and conducted in the usual way, bank books balanced up and statements of accounts rendered every month

LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

GOLD and SILVER deposits received

CERTIFICATES of DEPOSIT issued payable on mand.

TERM DEPOSITS are received and interest allowed as follows: 4% per annum if left for 6 months; 5% per annum if left for 12 months.

BILLS OF EXCHANGE of the Atlantic States bought and sold.

ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1882.

Oakland Poultry Yards.

Cor. 17th and Castro Sts., Oakland, Cal.

GEORGE B. BAYLEY,

Importer and Breeder of all the best known and most profitable varieties of Land and Water Fowls.

Brahmas, Cochins, Houdans, Langshans, Leghorns, Polish Hamburgs, Bronze Turkeys,

And the new fowl, AMERICAN SEBRIGHT or EUREKA.

Agent for the PACIFIC INCUBATOR; capacity, 500 eggs. Guaranteed to hatch NINETY PER CENT. of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season Price, $90. For further particulars send stamp for illustrated circular to **GEO. B. BAYLEY,** Box 1771, San Francisco.

PRICES REDUCED

TO SUIT THE TIMES.

In order to make room for young growing stock, I offer for sale 600 fine thoroughbred fowls, none over one year old. White and Brown Leghorns and P. Rocks, $2 each, or $20 per doz n. Eggs from above varieties $1 50 per setting of 13, or two settings for $2 50 Pekin duck eggs, $1 for 9. Langshans, Brahmas, Black Leghorns and Rouen Duck eggs, $3 per setting

My Birds are raised on large farms, where they have unlimited range, giving them a

VIGOROUS CONSTITUTION,

Which is very desirable in any Breeding Stock.

For further information send 3-cent stamp for new circular and price list, to

R. G. HEAD, Napa, Cal.

ITALIAN SHEEP WASH.

EXTRACT OF TOBACCO

Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

SCAB OF THE SHEEP.

The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

For particulars apply to CHAS. DUISENBERG & CO. Sole Agents, 314 Sacramento St., San Francisco.

B. STEACEY,

Lockeford, San Joaquin Co., Cal.,

MANUFACTURER OF ALL KINDS OF

FARMERS' WAGONS,

Buckboards, Family Buggies

Of all kinds and sizes.

Keeps a good supply of well seasoned wood on hand. Blacksmithing and painting departments in connection.

AMERICAN

MACHINE AND MODEL WORKS.

All kinds of Light Iron and Wood Work, including Patterns, Gear Cutting, Planing. Engine, Musical Instruments and other repairing. Dies, Taps, Reamers, etc., a specialty

HEALD & BANKS, Proprietors.

Try the Rural Press for 25 Cts. a Month.

Tell your friends that they can have the PACIFIC RURAL PRESS mailed to them one month on trial for 25 cents. Four back Nos. will be added on receipt of 10 cents additional—making eight copies for 35 cents. It is a handsomely printed and illustrated home journal. Mail it to friends abroad.

Cylinder Printing Press for Sale.

A large cylinder Hoe printing press, for country newspaper work, can be bought cheap by addressing

Press, Box 2361, S. F.

Attend to This.

Our subscribers will find the date they have paid to printed on the label of their paper. If it is not correct or if the paper should ever come beyond the time desired), be sure to notify the publishers by letter or postal card. If we are not notified within a reasonable time we cannot be responsible for the errors or omission of agents.

OUR attention has been called to the remarkable curative properties of Burnham's Abictene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

POSTMASTERS having their attention directed to this notice by the publishers, are requested to act as agent for this paper (whenever they can do so without interference with our published list of solicitors), and we will allow them a favorable commission on subscriptions, as per terms published elsewhere.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances. The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

HOW TO STOP THIS PAPER.—It is not a difficult task to stop this paper. Notify the publishers by letter. If it comes beyond the time desired you can depend upon it we do not know that the subscriber wants it stopped. So be sure and send us notice by *letter*.

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

A TURNED LEAF will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

ANNUAL STATISTICIAN of 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 502 Taylor st. Price, $4.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.

SEND name and address to Cragin & Co., Philadelphia, Pa., for cook book free.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, Mar. 29, 1882.

Trade is light and there is little disposition to do anything except for present use. The call business on the Produce Exchange has languished so that its suspension is agitated. There has been a cheapening of all kinds of fresh products and the staple grains are weak or reduced. It is betwixt winter and spring and a sort of a *laissez faire* season.

The latest from abroad is the following.

LIVERPOOL, March 28.—Wheat: California spot lots are quiet and steady, at 9s 9d@10s. Cargo lots are 45s 6d for just shipped, 47s 6d for nearly due and 47s 6d@48s for off coast. Receipts of Wheat the past three days, 145,000 ctls, of which 83,000 were American.

Eastern Grain and Provision Markets.

NEW YORK, March 25.—Wheat is fairly active and higher. Speculation is controlling the supply of Wheat in this market, and for the present dictates the scale of prices, which is seriously militating against purchases for foreign account. It is known that exporters have orders on hand for quantities of American Winter Wheat, but at figures that are fixed at too low a point for execution on the present market. The low rate of freight has enabled exporters to meet some of their orders, but at the close, with less favorable advices from foreign markets they have retired. Barley is quiet and unchanged. Provisions are quiet, but higher.

CHICAGO, March 25.—The increased receipts do not keep pace with the enhanced values. A year ago Wheat was selling at 99¾, to day at $1.35; Corn sold at 38½, to-day 63; Oats sold at 32 and to-day at 42½.

Provisions are slow and there is a less marked difference between then and now, being only $1.65 ℔ barrel on Pork and 30c on Lard. The straits are open, but carriers fear to tempt the possibility of a change and no shipments have been made yet, though charters have been taken at 2@3c for Corn to Buffalo.

The Foreign Review.

LONDON, March 27.—The Mark Lane *Express* in its review of the British Grain trade for the past week, says: There has been a short spell of wintry weather, and crops continue to look wonderfully well. The provincial markets are sparingly supplied with English Wheat, and the finest samples are generally 6d@1s higher. They are more difficult to sell, and occasionally cheaper. Foreign Wheat closed less buoyant and foreign Flour is cheaper. The quantity afloat is continually increasing, although the large proportion of American Flour is not very salable, and tends to clog the market. Maize is more difficult of sale, although occasionally 3s 3d is paid for mixed American. Wednesday cargoes were very quiet, and Red Winter declined 6d. Of 12 cargoes arrived, four were sold and one was withdrawn. Five California and two Oregon cargoes remain. The trade in forward is very animated. Sales of English Wheat 35,722 quarters at 44s 5d per quarter, against 31,119 quarters at 43s 10d the corresponding week last year.

London Wool Sale.

LONDON, March 27:—Eleven thousand bales of Wool were sold to-day, comprising Adelaide and Port Phillip. Competition was fairly spirited, at previous rates.

London Wool Market.

LONDON, March 28:—At the Wool sales to-day 93,000 were sold, comprising Port Phillip and Sydney. Prices generally were unchanged.

Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive according to the latest advices:

In port.	1882.	1881.
Engaged, tons	61,919	49,520
Disengaged, tons	17,223	4,687
To arrive, tons	247,373	236,913
Total supply, tons	326,515	291,120
Increase for 1882, tons		35,396

The freight market continued dull yesterday, exporters still holding off. The news from Liverpool being unfavorable, they show the more caution, as the tonnage in port is likely to be increased at any moment by a large fleet of new arrivals. The market is nominally quotable at 60s Iron to Cork.

Eastern Wool Markets.

BOSTON, March 28:—There is no change in Wool. The demand from manufacturers is fair, but in order to effect sales holders have to shade prices. Ohio and Pennsylvania fleeces have been selling at 42@44 for X and XX, and choice selections at an advance on these prices. Michigan and Wisconsin X 40@41, with small sales; choice at 42 and No. 1 fleeces 45@47 ℔ lb. In Michigan and Ohio unwashed Wools, there has been a steady demand at 25@32 for fine and medium grades; choice medium selections, 34@36 ℔ lb. Combing and delaine selections are quiet at 45@50 ℔ lb, for fine delaine, fine and medium combings. California Wool is quiet, and the assortment offering is poor. Pulled Wools remain quiet and steady, and have been selling at 45@52. Choice Eastern and Maine supers at 31@43, common and good supers and choice California pulled at 45@58 ℔ lb. Australian Wool is inquired for and selling on a basis of 90c ℔ lb for scoured. Other foreign Wools have been quiet and remain unchanged.

NEW YORK, March 25.—Wool is fairly active, but prices do not respond. Sales of California, 25 bales and 68 000 lbs., Spring at 21@31; 6,000 lbs. Fall, 15,000 lbs. and 1,650 bales Spring and Fall, and 6 000 lbs. lambs', all private, and 22,000 lbs. scoured, at 62@75.

BAGS—The following sales are reported: 50,000 Standard Calcutta, 22x36, June del, $9.27½; 50,000 do, $9.27½.

BARLEY—Barley has dropped off considerably and but little is selling, except future deliveries of the coming crop. Futures on call were reported as follows: 100 tons No. 1 dark brewing Barley, Sept. del, at $1.05 ℔ ctl; 50 tons do, $1.05 ℔ ctl; 50 tons No. 1 feed, July del, $1.27 ℔ ctl; 50 tons do, $1.26 ℔ ctl; 50 tons do, $1.26 ℔ ctl; 50 tons do, August del, $1.08 ℔ ctl; 200 ctls No. 1 feed Barley, spot, $1.42½ ℔ ctl; 100 tons No. 2 feed Barley, seller, 1882, 93c ℔ ctl; 100 tons do, 94c ℔ ctl; 100 tons No. 1 feed Barley, Sept. del, $1.07½ ℔ ctl.

BEANS—There is no change.

CORN—Corn is sluggish and sales absent. Nebraska Corn is new and offered at $1.50, with bids of $1.45.

DAIRY PRODUCE—Butter has fallen below the quarter, nothing but fancy lots now reaching 25c ℔ lb. Receipts are large, and the butter is of fine quality. Cheese is also coming in more freely and some sells at 15c.

EGGS—Eggs are well down and quiet, with ample supplies.

FEED—The coming on of green feed and the prospects of a hay crop have demoralized Feed of all kinds. Bran, Middlings, Cornmeal, etc., are reduced considerably. In Bran bids and offers were: Spot, $12.60 bid, $13 asked; March, $12.60 bid; April, $12.25 bid, $13 asked; June, $12.05 bid, $13.35 asked; August, $11.50 bid, $12.75 asked; September, $12 75 asked; October and November, $12.50 bid; seller 1882, $11 bid, $12 asked.

FRESH MEAT—Beef, Mutton and Lamb are lower again, and the retailers are more hopeful. They have had a hard row during the high prices this winter.

FRUIT—California Oranges continue to sell well at last week's prices. Limes and Lemons are unchanged.

HOPS—Hops are dull and sales few. Prices are nominal.

OATS—Oats are lower. Call sale of 100 tons No. 1, July, $1.50. Bids and offers were: Extra choice, $1.70 bid, $1.72½ asked; June, $1.55 bid, $1 60 asked; No. 1, May, $1.60 bid, $1.65 asked; August, $1.35 bid, $1.42½ asked; September, $1 36½ bid, $1.37½ asked; No 2, May, $1.50 bid, $1.55 asked; August, $1.22½ bid, $1.32½ asked; September, $1.22½ bid, $1.32 asked.

ONIONS—Large supplies have forced values down to low figures, the best not going above 75c ℔ ctl.

POTATOES—Potatoes have been discovered in Oregon, and the rule of high rates seems broken. Prices of all kinds have dropped off from 15c to 25c ℔ ctl.

PROVISIONS—Provisions are quiet, and prices unchanged.

POULTRY AND GAME—The hot weather has brought much stock in in poor condition, and has sickened the demand somewhat. Fowls, Ducks and Turkeys are lower. Only good lots of Game are salable at all.

RYE—Rye has weakened, and has been offered at $2.15.

VEGETABLES—Garden stuff is more abundant and lower, as seen in our price list. Asparagus is now becoming quite plenty, 170 boxes arriving on Tuesday.

WHEAT—Prices are about the same. We note sales of 80 tons extra choice white, $1.62½; 104 tons No. 1 amber, alongside, $1.60; 500 sks No. 2 Sonora, $1.55; 35 tons fair No. 2, $1.50.

WOOL—Nothing of interest is transpiring. It is reported that only about 800 bales of fall Wool are now left, and they are defective lots.

Domestic Produce.

WHOLESALE.

WEDNESDAY M., March 29, 1882.

BEANS & PEAS.		Pecans	13 @ 15
Bayo, ctl	3 00 @3 25	Peanuts	6 @ 6½
Butter	3 75 @4 25	Filberts	14 @ 15
Castor	3 50 @4 00	**ONIONS.**	
Pea	4 60 @4 75	Red	— @ —
Red	2 50 @3 00	Silverskin	35 @ 75
Pink	2 50 @3 00	Oregon	— @ —
Large White	3 00 @3 25	**POTATOES.**	
Small White	4 60 @4 75	Early Rose	— @2 00
Lima	— @6 00	Petaluma, ctl	2 00 @2 05
Field Peas, b'k eyed	5 @1 75	Tomales	1 90 @2 05
do, green	2 50 @2 25	Humboldt	— @ —
BROOM CORN.		" Kidney	— @ —
Southern	3 @ 3½	" Peachblow	— @ —
Northern	4 @ 6	Jersey Blue	— @ —
CHICCORY.		Cuffey Cove	— @ —
California	4 @ 4½	River, red	1 90 @2 00
German	6½@ 7	Chile	1 50 @1 65
DAIRY PRODUCE, ETC.		do, Oregon	— @ —
BUTTER.		Oregon Peerless	1 65 @1 75
Cal. Fresh Roll, lb	22½@ 24	Sweet	1 00 @1 25
do Fancy Brands	— @ 25	**POULTRY & GAME.**	
Pickle Roll	— @ —	Hens, doz	5 00 @ 6 00
Firkin, new	24 @ 25	Roosters	5 00 @ 9 00
Eastern	18 @ 20	Broilers	6 00 @ 7 50
New York	— @ —	Ducks, tame, doz	6 00 @ 7 00
CHEESE.		Mallard	2 00 @ 2 50
Cheese, Cal., lb	15 @ 17	Sprig	1 50 @ 1 75
EGGS.		Teal	75 @ 90
Cal. Fresh, doz	18½@ 19	Widgeon	1 00 @1 12½
Ducks	— @ —	Geese, pair	1 75 @2 25
Oregon	— @ —	Wild Gray, doz	1 75 @2 00
Eastern, by exp'ss	— @ —	White do	50 @1 00
Pickled here	— @ —	Turkeys	13 @ 15
Utah	— @ —	do, Dressed	12½@ 14
FEED.		Turkey Feathers, tail and wing, lb	10 @ 20
Bran, ton	12 50 @13 00	Snipe, Eng	2 00 @2 25
Corn Meal	36 00 @37 00	do, Common	50 @ 75
Hay	10 00 @14 00	Quail, doz	75 @ 80
Middlings	18 00 @19 00	Rabbits	1 00 @1 25
Oil Cake Meal	— @27 50	Hare	1 50 @1 75
Straw, bale	— 62½@— 70	Venison	5 @ 7
FLOUR.		**PROVISIONS.**	
Extra, City Mills	5 25 @5 50	Cal. Bacon, extra clear, lb	13½@ 14
do, Co'ntry Mills	4 75 @5 00	Medium	13½@ 14
do, Oregon	4 75 @5 12½	Light	14 @ 15
do, Walla Walla	4 50 @5 00	Lard	13 @ 14
Superfine	3 50 @4 25	Cal. Smoked Beef	11½@ 12½
FRESH MEAT.		Shoulders	9½@ 10½
Beef, 1st qual'y, lb	7½@ 8	Hams, Cal	12½@ 13½
Second	5½@ 6½	do, Eastern	15½@ 16½
Third	4 @ 4½	**SEEDS.**	
Mutton	5 @ 7	Alfalfa	12 @ 13
Spring Lamb	8 @ 12½	do Chile	— @ —
Pork, undressed	5½@ 7	Canary	3½@ 4
Dressed	8½@ 9½	Clover, Red	14 @ 15
Veal	7½@ 8	White	45 @ 50
Milk Calves	7½@ 8	Cotton	— @ 20
do, choice	— @ 10	Flaxseed	3½@ 3½
GRAIN, ETC.		Hemp	— @ 5
Barley, feed, ctl	1 45 @1 50	Italian Rye Grass	25 @ —
do, Brewing	1 70 @1 75	Perennial	25 @ —
Chevalier	1 60 @1 67½	Millet, German	10 @ 12
Buckwheat	1 50 @1 75	do, Common	7 @ 10
Corn, White	— @ —	Mustard, White	1½@ 2
Yellow	1 50 @1 55	Brown	2½@ 3
Small Round	— @ —	Rape	2½@ 2
Oats	1 30 @1 67½	Ky Blue Grass	20 @ 25½
Milling	1 70 @1 72½	2d quality	15 @ 18
Rye	— @2 15	Sweet V Grass	— @ 75
Wheat, No. 1	— @1 62½	Orchard	20 @ 25
do, No. 2	1 57½@1 60	Red Top	— @ 15½
do, No. 3	1 45 @1 50	Hungarian	8 @ 10
Choice Milling	— @1 65	Lawn	30 @ 40
HIDES.		Mesquit	10 @ 12
Hides, dry	18 @ 19	Timothy	9 @ 10
Wet salted	9½@ 11	**TALLOW.**	
HONEY, ETC.		Crude, lb	6½@ 7
Beeswax, lb	23 @ 25	Refined	9½@ 10
Honey in comb	14 @ 18	**WOOL, ETC.** FALL—1881.	
Extracted, light	9 @ 10	San Joaquin	10 @ 13
do, dark	7½@ 9	do, Lamb	13 @ 15
HOPS.		Southern Fall	10 @ 12½
Oregon	20 @ 21	do lambs'	13 @ 14
California, new	22 @ 25	Northern, free	16 @ 20
Wash. Ter	19 @ 20	do, defective	14 @ 16
Old Hops	— @ —	Mountain, free	16 @ 18
NUTS—Jobbing.		do, slightly seedy	13 @ 15
Walnuts, Cal	10 @ 11	Humboldt & Mendocino	20 @ 21
do, Chile	7½@ 8		
Almonds, hd shl lb	8 @ 10		
Soft shell	14 @ 15		
Brazil	10 @ 11		

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., March 29, 1882.

FRUIT MARKET.		Pears, sliced	— @— 9½
Apples, bx	1 00 @ 3 00	do whole	7 @— 8
Bananas, bunch	2 50 @ 4 00	Plums	— @— 6
Cocoanuts, 100	6 00 @ 7 00	Pitted	— 13 @— 14
Cranberries, bbl	12 50 @14 00	Prunes	— 9 @— 12½
Limes, Mex	12 00 @15 00	Raisins, Cal, bx	— @ 2 50
do, Cal, box	2 00 @10 00	do, Halves	— @ 2 75
Lemons, Cal, bx	2 00 @ 3 50	do, Quarters	— @ 3 00
Sicily, box	6 50 @ 7 50	Eighths	— @ 3 25
Australian	— @— —	Zante Currants	— 8 @— 10
Oranges, Cal, bx	3 00 @ 4 50	**VEGETABLES.**	
do, Tahiti M	— @— —	Artichokes, doz	— @— 50
do, Mexican	15 00 @17 00	Asparagus, lb	— 6 @ 8½
do, Loreto	— @— —	Beets, ctl	— @— 65
Pears, bx	— @ —	Cabbage, 100 lbs	— 75 @ 1 00
Pineapples, doz	8 00 @ 9 00	Carrots, sk	— 75 @— 90
DRIED FRUIT.		Cauliflower, doz	— 90 @ 1 00
Apples, sliced, lb	— 6 @— 6½	Garlic, lb	— @— 1½
do, evaporated	— 10 @— 11	Lettuce, doz	— 10 @— —
do, quartered	— 5 @— 5½	Mushrooms, lb	— 4 @— 8
Apricots	— 15 @ — 17	Okra, lb	— 5 @— 8
Blackberries	— 14 @— 16	Peas, green, lb	— 8 @— 10
Citron	— 28 @— 30	Parsnips, lb	— @— 8
Dates	— 9 @— 10	Rhubarb	— 6 @— 10
Figs, pressed	— 4 @— 6	Squash, Marrow fat, ton	18 00 @20 00
do, loose	— 3½@— 5	Tomatoes	— 15 @— 18
Nectarines	— 14 @— 15	Turnips, ctl	— @— 75
Peaches	— 11 @— 11½		
do pared	— 14 @— 18		

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., March 29, 1882.

Eng Standrd Wheat	8½@ 9	45 inch	9½@ 9½
Cal Manufacture		40 inch	8½@ 8½
Hand Sewed, 22x36	8¾@ 9	Wool Sks Hand Sewd	
20x36	8½@ 8¾	3½ lb	— @47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	— @48½
Machine Swd 22x36	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10½	Bean Bags	6½@ 7
Quarters	6 @ 6½	Twine, Detrick's A	32½@35
Eighths	4½@ 4½	" " AA	35 @37
Hessian, 60 inch	— @12		

Retail Groceries, Etc.

WEDNESDAY M. March 22, 1882.

Butter, California Choice, lb	45 @ 55	Rice	8 @ 10
Cheese	17 @ 25	Yeast Powdr, doz	1 50 @2 00
Eastern	25 @ 30	Can Oysters, doz	2 00 @3 00
Lard, Cal	— @ 18	Syrup, S F & old'n	75 @1 10
Eastern	20 @ 25	Dried Apples, lb	10 @ 15
Flour, ex fm, bbl	8 00 @9 00	Ger. Prunes	12½@ 20
Corn Meal, lb	2½@ 3	Figs, Cal	9 @ 10
Sugar, wh. crushd	12½@ 13½	Peaches	15 @ 25
Light Brown	8 @ 9½	Oils, Kerosene	50 @ 60
Coffee, Green	23 @ 35	Wines, Old Port	3 50 @5 00
Tea, Fine Black	50 @1 00	French Claret	1 00 @2 50
Finest Japan	55 @1 00	Cal. doz bot	2 00 @4 50
Candles, Adm'te	15 @ 25	Whisky, O K, gal	3 50 @5 00
Soap, Cal	7 @ 10	French Brandy	4 00 @8 00

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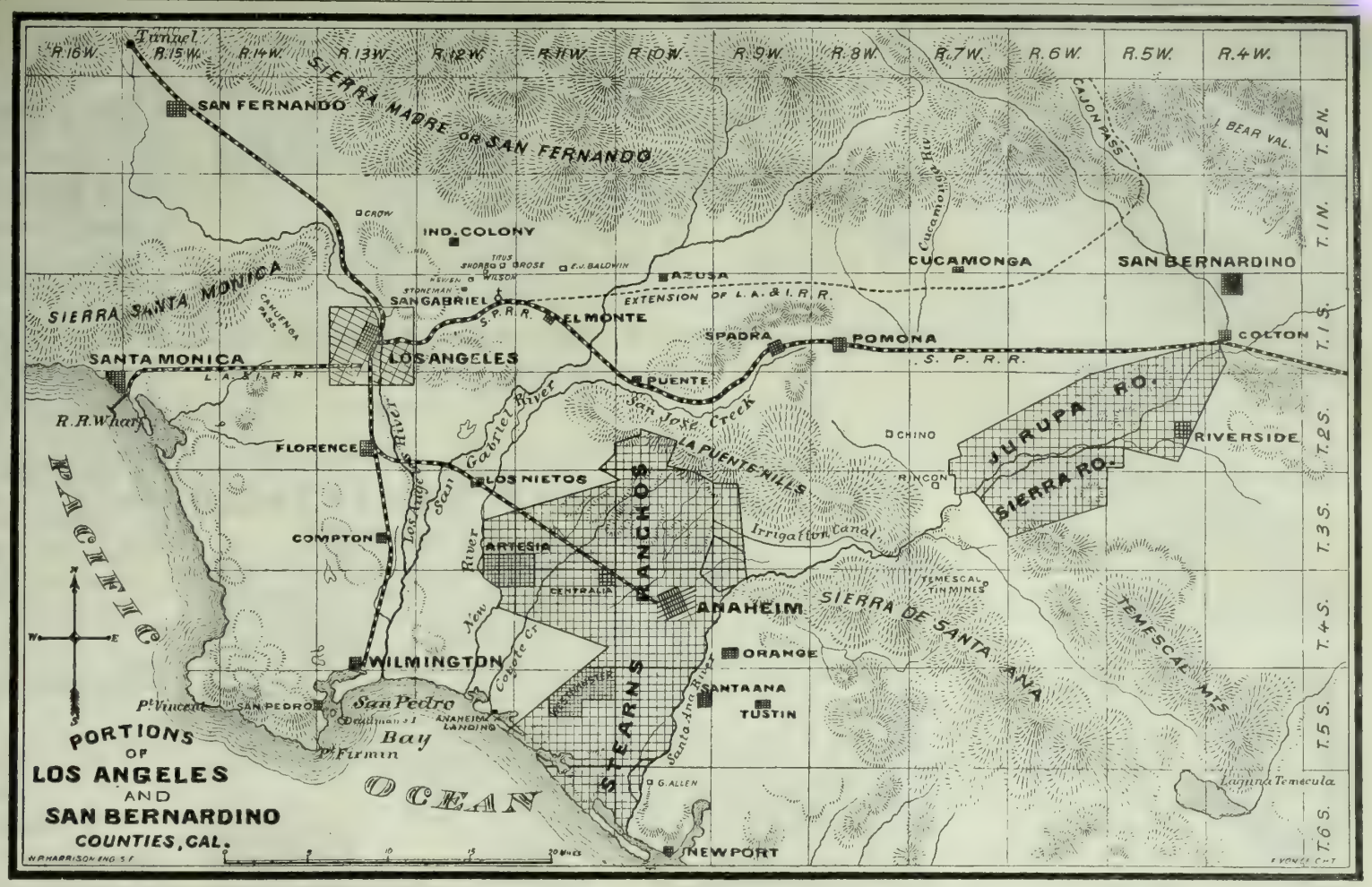

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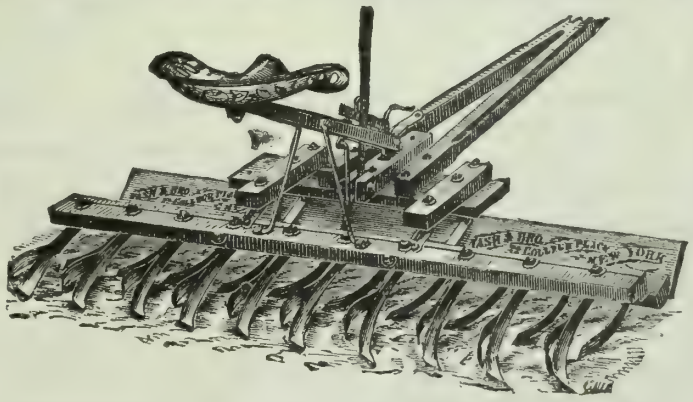

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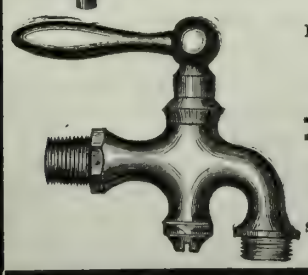

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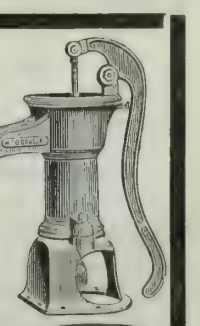

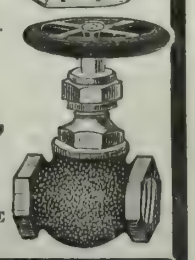

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Besides I have 5 kinds each of Broomcorn, Sugar Cane, Durra, and well-tested Potatoes; also, Artichokes, Hop roots, Cotton seed, BAMBOOS, Peanuts, Bald Barley, the most valuable forage plants, and many other useful and profitable seeds for the farm. Also a pond of Carp, 20 to 50 cents each. ☞CATALOGUES FREE.

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The teeth are of the best quality of steel and warranted to stand the severest usage.

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28 Teeth, Weight, 64 Pounds.....Price, $14.00

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CITRUS FAIR EXTRA — TWENTY-FOUR PAGES.

Volume XXIII.] SAN FRANCISCO, SATURDAY, APRIL 8, 1882. Number 14

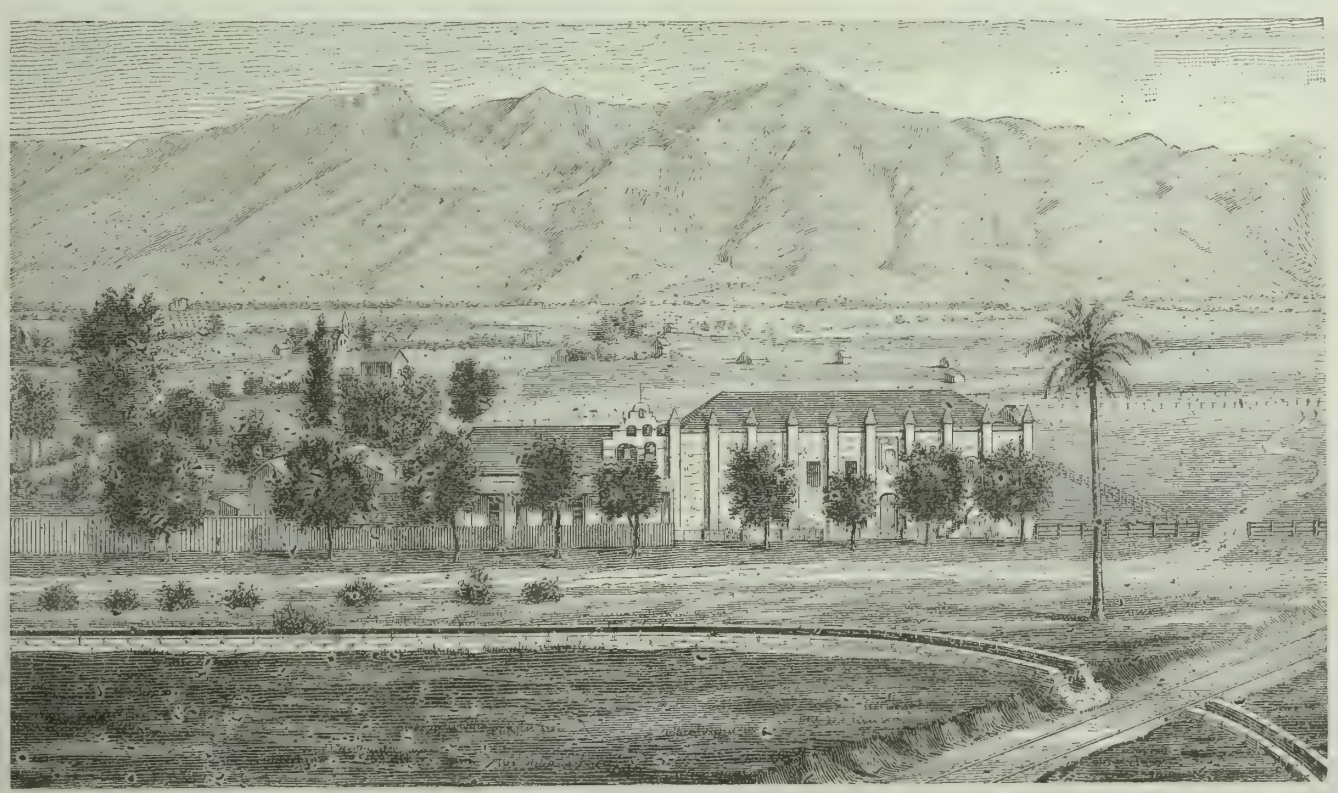
San Gabriel Mission.

As apropos to the present edition, which is largely devoted to the horticulture of southern California, we give a handsome engraving of San Gabriel Mission, one of the land-marks of the southern country. It is one of the best preserved of the old missions, and is well worth a visit from all who come into its vicinity:

Between San Diego, where the cross was first erected, and Monterey, their objective seat of empire, the fathers found no country so fertile and inviting as the San Gabriel valley. The forests were filled with game, wild foods of every kind were plentiful. The increase of live stock introduced by them was beyond all precedent. The olive and the vine flourished. Remains of the Vina Madre or Mother vineyard of San Gabriel may still be seen. With an eye to beauty as well as utility, these vineyards were intersected with walks shaded by fruit trees of every description, adorned with roses and flowering shrubs, and made pleasant by the sound of flowing waters brought from the surrounding hills.

When the Mission Viego was abandoned for the more eligible site of which the church at San Gabriel is a monument, Father Salvadea reigned in supreme authority over some 15,000 souls. He believed in education by work, and his converts were no sooner baptised than they in turn were set to convert chaparral into pastures for the Lord's flocks; he built the mill and dam at the Kewen place, enclosed many miles of the domain with hedges of tuna, laid out a beautiful square around the church with a sun-dial in the center, planted the first orange orchard, and brought the date palm, it is said, from the city of Mexico, to whisper at vesper time of the triumphs of the redeemed. How dream-like and unreal all this seems as the train goes whirling past the lonely palm tree and the old sanctuary, and is lost in the distance.

The old ground of the *padres* it now the site of some of the most famous orchards and vineyards of the State, as our readers are aware, from the sketches of the valley which have heretofore appeared in the RURAL. For the engraving we are indebted to Mr. N. C. Carter, whose beautiful San Gabriel home, "Willow Dale," is known far and wide.



SAN GABRIEL MISSION, THE VALLEY AND THE SIERRA MADRE MOUNTAINS.

STEAMING WHEAT AROUND THE HORN.—The opening of the new route for wheat via New Orleans seems to be stimulating the ocean carriers to new ventures. It is telegraphed from New York that, speaking of the deep interest now being taken in the development of the wheat prospects of the Pacific coast, a prominent steamship agent stated to-day that he knew of three steamships which would soon sail from England for the Pacific coast, around Cape Horn, carrying coal and iron, and returning with wheat. This is altogether a new development of California trade, inasmuch as sailing vessels carry on the transportation of wheat from the Pacific coast to England. The principal obstacle to steamer service is the necessity of carrying enough coal to last for the trip to San Francisco, or else the establishment of one or two coaling stations on the west coast of South America.

The Citrus Fairs.

We give full space this week to the southern California Citrus fairs of 1882. These are great horticultural events in our southland, and are the mile-stones of progress in fruit production. There has been a steady growth in extent and excellence since these fairs were organized, and it is difficult to imagine the beauty and wealth of the material which will be collected at these occasions a few years hence. Already they find places in the time cards of tourists, and certainly they will ere long be looked upon as the occasions when sight seers and home seekers can best learn of southern California's out-door industries. We fully appreciate the importance of these fairs, and consequently put forth extra effort to inform our readers of their character and extent. On page 260 will be found a sketch of the San Diego county Citrus fair. The report of the larger display at Riverside begins on page 265, and occupies several pages. We have not found room to print one half the interesting and valuable statements which might be made, but there is a limit to all things. We hope what we do give may prove, as it is intended, an honest tribute to the growth of southern California, which shall cheer and encourage all who now count the lovely land their home, and shall serve also to make the country better and more widely known. It is a region which those who know best love best.

THE PAVILION ENDANGERED.—About 11 o'clock Friday evening, after the close of the fair, the alarm of fire rang through the air, and a bright glare showed that the new pavilion was threatened with immediate destruction. A little hut containing shavings, etc., left by the builders in close proximity had been fired (probably accidentally, by tramps), was completely enveloped in flames, which would quickly have communicated with the pavilion but for the strenuous and self-sacrificing efforts of individuals who stood their ground in protecting the latter.

THE Tombstone *Nugget* reports that the wool clip in northern Arizona will be unusually large this season.

Borax Injection for Meat Preservation.

We have given from time to time the latest means adopted for preserving fresh meat for long shipment in the hope that when the perfect way is secured it may be of benefit to this coast in some way, by reducing cost of carriage on flesh which grows at a distance from the market. The last which comes to our notice is different from those which have been described. Instead of steeping the dead meat in an antiseptic, the preservative chemical is introduced into the live animal, and by the action of the heart is sent through the blood-vessels and capillaries into every part of the body. The sheep, which was first stunned by a smart blow on the head, given by a wooden mallet, showed no signs of consciousness or sensibility throughout the operation. A veterinary surgeon laid bare the left jugular vein, and using an ordinary surgical trocar and canula drew off about a pint of blood. The preservative chemical, dissolved in warm water and kept at blood heat by a hot water-jacket surrounding the tin can in which it was held, was then allowed to flow through an india-rubber tube, placed to the orifice of the canula into the vein, about two pints being thus injected. As soon as the charge had run into the animal the canula was plugged, and about two minutes were allowed for the injected fluid to pass through the whole vascular system. The sheep was then stuck by the butcher in the ordinary way. The antiseptic used is boracic acid, which, it is said, does not in the slightest degree affect the flavor or quality of the meat, while the results of experiments show that meat thus treated will, in this country, keep perfectly good, without ice or refrigerators, for five or six weeks in summer and two or three months in cold weather. The cost of the chemical, it is stated, would be, at the outside, eight or ten cents per sheep, and the only apparatus required would be a tank in which, by means of a sand bath, the boracic acid could be kept at blood heat, ready for use when killing was going on.

IT is estimated that from 27,000 to 28,000 acres are planted to wheat in San Diego county this season, and a yield is expected of 500,000 or 600,000 centals. The outlook for crops of all kinds was never brighter.

Trying to Steal our Climate

We object to spreading the climate of the Pacific coast all over North America. Climate is one of our peculiar "resources," and if ethereal mildness is made too common, its value will no doubt greatly depreciate. And yet, if we understand reports aright, an eastern meteorologist, with a taste for the vast in engineering, proposes a plan which will distribute the warmth of a California winter all over the continent, and perhaps rob us of what will not enrich him, while it may make us poor indeed. This is the plan to accomplish it: Professor Shaler, of Harvard University, has a dazzling scheme in his head which he has only to realize to give the entire American continent a brand new cosmopolitan climate. Professor Shaler's invention is explained in brief by a contemporary as follows: "Once on a time the Japanese current flowed through Behring's Straits into the Arctic ocean. Then the Straits were wider than they are now, because forces no longer existing caused the coast to gradually rise. The result of the narrowing process was the interruption of the warm current. The thing to do is to make an artificial channel through the Straits, so that the warm current may pass toward the Pole again. Such an achievement would reclaim a vast stretch of land, giving North America a delightful climate, dispelling the rough winters and tempering the fierce heats of the summer."

All that has to be done is to widen Behring's Straits — perhaps lop off Alaska, or half of it, if the Russians could be persuaded to give enough of Siberia to make the project a joint one between the two countries. Thus set in the flow of the warm current, thaw the ice off the Pole, put it under bonds not to disappear, so that no more Arctic expeditions may be called for, and at the same time secure a climate which will lead to planting orange groves around Hudson's Bay. This will be fine enough if the change in the Pacific currents does not set the glaciers at work again in California. It is a beautiful scheme, but dangerous.

MR. SLOSSON, Station Agent at San Gabriel, has repeatedly favored the readers of the RURAL with valuable fruit shipping statements. Appreciating his kindness, our representative recently jumped from the overland train for a hand-shake with the painstaking statistician, and quicker than thought found the train out of reach. This gave us an enjoyable ride to the Sierra Madre Villa and one of Rhoads' excellent lunches. Returning for the evening train for Colton, we were thrown into the good company of Mr. Mathes, the genial and rising editor of the Los Angeles *Daily Times*. So far as heard from, Rhoads is the only victim of the mishap.

AT THE FAIR.—Gen. Geo. Stoneman and wife were in attendance during the fair. Many other well-known representative men and women from abroad paid their respects to Riverside during the fair. In fact, the hotel registers show a favoritism to the place at all seasons of the year, by the leading names recorded.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Snow Perils of the Upper Sierras.

A Week of Suspense in the Snow-Blocked Town of Lundy.

EDITORS PRESS:—The village is situated in Mill Creek canyon, surrounded on all sides, except the east and a small opening to the west, by precipitous mountains of granite, rising at an angle of 50° to 70° to the hight of 2,000 to 3,000 ft. The site of the town is a gentle declivity towards the south, covering about 250 acres. On the north the mountains are fully 2,000 ft. high, and at a distance of 200 or 300 ft. from Main street they rise at an angle of 50°. On the south side Mt. Gilcrest towers to the hight of 3,100 ft. above the town, at an angle of 50°, the base terminating at Mill creek in the south margin of the town, about one-fourth mile from Main street, with only a few buildings along its base. On the southwest side frowns Mt. Scowden from a hight of 2,300 ft., its upper half nearly perpendicular and its lower half at an angle of 60°. The storm began on Thursday night, 9th of March; on that night and the following Friday snow fell to the depth of 15 inches. Saturday was clear, but on Sunday the snow fell lightly all day, and on that night the terrible storm began in earnest and raged almost continuously until Friday, the 17th, on which day the sun rose clear and bright, and the storm was again renewed on Saturday and Sunday, accompanied by a terrific gale, probably bringing the greater part of the snow that lodged in the canyon from the high peaks in the vicinity. By Wednesday evening (the 15th) the village was snow-blocked and all communication with the outside cut off. The Sierra telegraph line kept up till about 5 P. M. At that hour came the

First Alarm from an Avalanche.

Starting near the summit of Mt. Scowden, its velocity was something fearful and indescribable. Dropping from the almost perpendicular face of the mountain, at a hight of 2,000 ft. above the town, it came with such tremendous force, causing it to leave the ground long before reaching the base, shooting with lightning speed as far east as Chicago avenue, 1,500 ft. from the base of the mountain. The first unfortunate people residing in its track were the family of Mr. Mayes, consisting of himself, wife and three children. The house (a frail one) was swept away, and the entire family covered four ft. deep. It next struck the large canvas house on the north side of Chicago avenue, occupied by Mr. Winter and wife. This was completely demolished, and both occupants buried to the depth of six ft. Fortunately none of the seven persons in these buildings were seriously injured, as they were quickly uncovered by a number of citizens going to their assistance. Before striking these houses the avalanche shot entirely over a cabin occupied at the time by Jos. Carron, Gus Duval, George Chagnon and one other man. It was buried by snow falling on it, but none of the men were harmed. The track of this avalanche was a little east of the May Lundy mill, barely missing it, if, indeed, its force was not high enough in the air to have cleared the roof of the mill altogether. An hour later the next

Avalanche Came from the North Side,

Directly back of the most densely built portion of Main street. Its force was broken by striking on a level bench or bluff 200 feet back from Main street, almost overhanging the May Lundy hotel. The whole mass of the slide seemed to be instantly dashed into spray, and dispersed in every direction, doing no damage beyond filling the center of town with flying snow, and blinding for the time those in the streets, and plastering the house-fronts on the opposite side with the hardened snow. Although there had been no damage from this, it was terrifying enough to thoroughly alarm every person in the town. It had become quite dark by that time, and the storm was raging with a fury to appal the bravest. No one knew where to look for safety. It soon became evident that this part of the town was comparatively safe, and many women and children in exposed locations collected there, and the citizens who had no families to protect, collected at several points of rendezvous, prepared with shovels to go at the first call of alarm, and it is fortunate that they did so. Avalanches were now coming from all sides. Every few moments through the blinding storm came the roar of the rocket slide, followed by a rush of wind and flying spray, and occasionally the crashing and thundering of the heavier avalanche, that kept closer to the ground, striking terror to the stoutest hearts, though they may have felt safe themselves. This Wednesday night was one that will never be forgotten by the inhabitants of Lundy, and the poor fellows on the outside in isolated buildings, far

Beyond Help from the Town.

At 11:30 came faint cries for help through the roaring of the storm; they seemed to come from the base of Mt. Gilcrest, nearly one quarter of a mile south of Main St. It was soon found by a large party of rescuers that an avalanche had swept down from that mountain, crossed Mill creek, and carried away the log cabin occupied that night by Abner and J. A. Bagby, and Fulton Isbell, and buried all of them deeply. By good fortune, one of the brothers could work a little, and by great effort managed to dig near enough to the surface to make himself heard. The two Bagby brothers were soon released, but it was an hour before Isbell was rescued. He was held down firmly by the logs of the building, and could not have survived much longer. Their escape was almost miraculous, as the house (a very strong one) was entirely demolished, with everything in it. Another terrific avalanche came just as the rescuers approached the Bagby house. The spray from it blinded and staggered the party, though it came nearly a half mile west of them.

It Shot Down from Mount Scowden,

Taking in its course the May Lundy mill, at the west end of Chicago avenue. It seemed to have shot entirely over the mill, only crushing in the back wall of the blanket and pan rooms, and carrying away the smokestack, jumping the mill and landing tons of snow in the dump yard beyond, and rushing as far as the store, 200 feet further east. On the south side of Mill creek, in the rear of the mill, this avalanche swept away a small house, occupied up to that evening by two men, who just escaped in time. All through the night came the rush of the slides and the roar of the heavy avalanches, which could not be located by the watchers. No further destruction occurred within the town limits, and the light of morning was welcomed by many anxious watchers, while on the outside it was far more disastrous. At 11 o'clock,

The Most Terrible of All the Avalanches

Descended into Lake canyon, two and a half miles south of town. It started near the summit of Mount Discovery, over the north end of the Jackson mine and south end of the May Lundy mine, breaking along the face of the mountain for several hundred feet in width, narrowing again as it descended, gaining force and velocity, and running one and a half miles before stopping. Situated in the center of Lake canyon, on a considerable knoll, was the two-story frame building owned and occupied by Trumble & Monroe, and occupied on that fatal night by Stephen and Robert I. Trumble, Henry Shoemaker, Alex. McKean, Conrad Hoblitzel and D. B. Grant. The house was struck and crushed into fragments, and carried 100 feet on to higher ground. All of the sleeping occupants were buried deeply. Stephen Trumble, however, dug his way out, and reached the cabin of Patrick Ragan, barefooted and nearly naked, through the terrible storm. He was only enabled to do this by fortunately getting hold of two blankets that were cast near him in the wreck. These he threw out before him, and crawled to the vicinity of the cabin, as near as he could guess at it in the storm. He was pretty badly hurt, and also frozen, but at present is able to be about. Mr. Ragan, the only person in the vicinity, went to the wreck and searched till daylight; then, feeling sure that there could be no chance for any of the others to be still living, he came to town for assistance. He arrived at noon, and ten men

Volunteered to Go Up,

Hoping to find some of them living; the constantly threatening avalanches from the nearly perpendicular walls of Lake canyon, rendered their efforts almost hopeless; they, however, reached the scene of the disaster on snow-shoes by 5 o'clock, and soon released Hoblitzell alive; he had just recovered consciousness and made himself heard. He had been buried for 19 hours, six feet deep under the snow, and his sufferings were horrible; by six P. M. they had recovered the dead bodies of Robt. Trumble, Shoemaker, and McKean, buried about eight feet deep and apparently killed or smothered at the first. Darkness closed in and prevented further search for Grant, and fortunately so, for a second avalanche came shortly after, larger than the one of the previous night, burying the recovered bodies 16 feet deep, and further work had to be suspended until the following Monday, the 20th, when 22 men went up and excavated the three bodies a second time, and found that of Grant, who had been killed outright in the first avalanche and carried 100 feet to near the place where S. E. Trumble had extricated himself. Other slides occurred in Lake canyon, one sweeping away the stable at the toll-house. Friday morning was clear and bright, and by 4 P. M., H. P. Medlecott, Jos. Plant, Jas. McCollum, and William Miller came into town from the Gorrilla mine, one mile up Mill creek; their escape from death was almost a miracle. The house was situated under a perpendicular bluff 200 feet high. On either side of the bluff was a sharp canyon reaching to the summit, down which thundered avalanches at short intervals all through the early part of Wednesday night, until the canyons on either side were piled with snow to a great depth. At about midnight a slide broke off laterally from the west canyon and crushed the house, burying them all 10 feet deep. Fortunately one of them was in a position to work a little and

By Great Labor Dug to the Surface,

And after hours of labor released another. Judge Medlecott and Plant were in the wreck four hours; the former under the weight of 10 ft. of snow, with the heavy boards of a sleeping bunk pressing so heavily on him that he could not move a limb. His sufferings were fearful, and he could not have lived much longer. Their severest trials were to come yet. All in bare feet and only their underclothing, they nearly perished before all were dug out. The storm was raging furiously, and nothing to shelter them. Added to this, slides were thundering past and over them; and their only chance to live now was to drift through the snow a long distance to the mouth of the tunnel, at which the blacksmith shop was situated, and both were buried deeply out of sight, and their locality guesswork. This they

Succeeded in Reaching by Daylight,

And were obliged to remain all of Thursday and Thursday night without either fire or dry clothing. On Friday they started down to the town, Medlecott barely able to drag along with the assistance of the others. An hour later news came of the destruction of the buildings at the Great Sierra tunnel, Tioga district, eight miles south of Lundy. Twenty-two men were buried in the wreck, but all were dug out with no serious injury to any. The immense avalanche that swept over these buildings came about 11 o'clock on Wednesday night, at almost the same hour as the other disasters. It was vaster in volume than any of the others, and coursed for fully two miles. The house was very strongly constructed of logs and banked up high with snow, and the avalanche only carried away the top logs and roof, to which circumstance, many, if not all of the occupants owe their lives. By this time, all on the outside in exposed localities had been heard from except a party of four, who were living near the

Head of Mill Creek Canyon,

Three miles west of Lundy. A party started to their rescue on Saturday, and met two of them just above Wasson, on their way down. It seems that these men had been in a secure place, as the avalanches that swept past and over them were spent and turned aside by a projecting cliff of rocks above the house. They report the situation in Upper Mill Creek canyon as one of almost uninterrupted avalanches from both sides. The town site of Wasson is, for the greater part, deeply buried by slides coming from both sides, the avalanches in some instances meeting midway of the canyon. Some of the buildings were destroyed, but very fortunately none of them were occupied this winter. During these

Days of Anxiety,

The inhabitants of Lundy witnessed some sights of awful grandeur from the town. Friday morning broke bright and cold, and there was joy in every household. Mount Gilcrest rises abruptly from the south shore of Lake Lundy, and the town is at the west end. On that morning a succession of tremendous avalanches shot out from its very summit, 3,000 feet above the lake, keeping close to the mountain for several hundred feet, but long before reaching the base it left the ground, shooting with lightning velocity far out over the ice, and gliding across to the north shore. The writer witnessed some of the grandest of these from the very moment of starting. From the highest peak on the north face of Mount Gilcrest they shot down with tremendous velocity for a second or two. Then, as they receded from the peak sending up vast clouds of flying snow spray, white and flame-lit in the morning sun, leaping, curling, rolling higher and higher as they neared the bottom, until midway over the lake they seemed 500 ft. high, and continued to roll far up the mountain on the opposite shore, two miles from the starting-point. All thoughts of the danger of the past 48 hours vanished in the awful sublimity of these scenes, witnessed as they were from a point of safety, with the glad sunlight flooding the tips of the mountains once more.

H.

The Chance in California.

EDITORS PRESS:—A correspondent of the PRESS, not long since, stated that "it was impossible to farm successfully in California without a large capital and on a large scale." He stated plainly that small farming did not pay. If this is the case what use is it to invite the immigrant here to settle upon 160 acres of Government land? He will say at once I have not much capital and must cut my coat according to the cloth; I must seek a place where I can work on a small scale according to my means. It is well enough to sit on a high-legged stool before a desk and write high-toned literature for the press, but it is quite another thing, sometimes, to make it stick.

I have stated before, and I repeat it, that there is no better place than California for a man with small means, providing he starts right, and uses good judgment and economy in all things. The necessaries of life are as cheap here as in many other new countries. It is the luxuries which eat a poor man up; hence the necessity of economy in this respect. Bread and butter and meat are cheap enough here; but rum and cigars and poker games are expensive, consequently the beginner must pass them by—"Look not on the wine when it is red!"

What has been done in this State may still be accomplished. We would not advise an immigrant with small means to select as a homestead, a tract of adobe land on the plains, without a tree, or a drop of water running near it; but rather go into the foot-hill country, and beside some babbling stream, select a cosy place where, in a very few years, he can be comfortably situated under his own vine and fig tree.

Speaking of agricultural implements, the same correspondent says, "farming cannot be conducted without expensive machinery, etc." Let us see. Last year my neighbor sowed a large field of barley, and after harrowing a part of it, was overtaken by a rain storm, which prevented harrowing the unfinished part of the field. At harvest-time there was no perceptible difference in the crop, and now the part of the field left unfinished is the best volunteer, and will make a good crop of hay; after which there will be good pasture for one or two years without further cultivation than simply plowing the soil once. What is there so very expensive about this kind of farming? But my learned friend may say this is only an exception; it is not the general rule in California. No, not on all kinds of soil, but may be practiced invariably on creek or river-bottom lands, and there is where we would send the immigrant.

In writing on the advantages of California, it must be remembered that it is a large State with a variety of climate and soil, and what would be true of one part of the State would be quite contradictory of another.

Olimpo, Colusa Co., Cal. L. D. JENKEN.

HORTICULTURE.

About Figs.

EDITORS PRESS:—Mrs. Jeanne C. Carr gave us much interesting information about figs in the RURAL of March 4th. Our State is so well adapted to their culture, with its dry autumns and not very heavy dews, that it ought to supply home use and export at least 3,000 tons, if Greece, "in prolific years, exports 10,000 tons." Their curing and packing, with hop raising and raisin making, would give the growing boys a chance to work and save them from hoodlumism; and now that a few noble women have demonstrated that raising silkworms is a success in this climate, thus giving employment to the girls, the paths to competence and a lasting interest in our State seem opening to the youth of this generation.

We want to raise the right kind of figs. Will not some reader of the RURAL who has tested the white Smyrna for curing, give results? He who can make figs as good as the Turkish or Smyrna, and develop this industry into successful export, will be a public benefactor, and even if he give his knowledge gratuitously, will be repaid an hundred fold, by opening another branch of industry where boys can learn the manliness of labor.

It may be owing to handling, but the figs of a large, white Smyrna near here are not relished, fresh or dry, as well as the large, blue Damascus. We have that, but the figs are not as thin skinned or sugary as the Turkish, though they exude a coating of white sugar and are very nice. I find them convenient to regale the child visitors and children of larger growth too. When fruit is scarce in winter they are relished and nutritious. A box of them in the closet is better than pills in the chest. Clean straw is spread under our trees for them to fall on, and I should think straw would be good to dry them on. Hot sun seems to hurt them; others say only heavy dews make them hard. Would fruit dryers be good to cure them in?

I have dipped mine in hot lye, because in the second year worms have developed in some of the boxes and the skin seems less rank; a friend does not, and has no worms. A lady once had a half barrel of figs handy by; neighbors dropping in helped themselves freely. After eating heartily once it was discovered that the whole mass was wormy. The Spanish Purple is largely raised here—not very good. One intelligent family prefers the little Ischias for winter packing. Another has three prolific Ischias and turns the hogs in to eat them because they are not fit to dry.

The Damascus should be at least 35 or 40 ft. apart. Many families of limited means living in towns could let the wide-awake boy plant a good fig, if they knew a good variety to get from the nurserymen. Let him care for it, handle and sell the figs, put the money in the bank, or other safe place for future use. Nothing lifts a boy up so much as to feel that he is useful—does some good in the world—and the boys, kindly encouraged, might have a fig, olive or any other useful tree for their own.

Stockton, Cal. MRS. W. D. ASHLEY.

A NEW VARIETY OF GLASS.—A Vienna chemist has recently discovered what he claims to be a new variety of glass. It does not contain any silica, boric acid, potash, soda, lime, or lead, and is likely to attract the attention of all professional persons on account of its peculiar composition. Externally it is exactly similar to glass, but its luster is higher and it has a greater refraction, of equal hardness, perfectly white, clear, transparent, can be ground and polished, completely insoluble in water, neutral, and it is only attacked by hydrochloric or nitric acid, and is not affected by hydrofluoric acid. It is easily fusible in the flame of a candle, and can be made of any color. Its most important property is that it can be readily fused on to zinc, brass and iron. It can also be used for the glazing of articles of glass and porcelain. As hydrofluoric acid has no effect on the glass it is likely to find employment for many technical purposes.

THE BOTANIST.

Hints to Botanical Collectors.

[Written for the RURAL PRESS by J. G. LEMMON, Blake House, Oakland.]

Equipments.

1. The Portfolio.—Provide yourself with a large folding case, 12 by 18 inches; the cover of a large ledger or a piano instructor will answer very well. Half fill it with folios of soft white paper of nearly the same size, laid in loosely and not fastened to the back. Instead of white paper, folios can be readily obtained by cutting the binding threads of *Harper's Weekly*, or other such magazine, and separating it into folios, that is, sheets folded into two leaves. Half of them will have the illustrations on the inside; reverse these so the plants to be put inside will be less injured by the ink. Put in the portfolio with them a quantity of the dryers, next described.

2. The Dryers.—Provide a quantity of bibulous paper, in thick sheets, of the size of the portfolio. A kind of paper used for carpet lining is suitable, but the best is manufactured expressly for the purpose, at Cambridge, Mass. For beginners, common newspapers, folded to suit, will answer. Before using, these dryers are exposed to the heat, generally by spreading in the sunlight, then piled in a pack for use.

3. Implements.—For short trips on level ground all that is necessary is a strong knife, suited to digging the roots or bulbs of small plants, but sharp enough near the hilt to cut twigs of bushes and trees. This knife is carried in a sheath fastened to your belt. For long trips, or mountain climbing, strong but light boots or shoes, and a long, stiff, light staff provided with a crook, or, instead, an umbrella with a hooked handle may be found useful for several purposes; but instead of either a botanical "digger" is often found the most useful. This is formed like a miner's pick, but smaller, 10 to 14 inches long, and with a hoe on one end. If furnished with a long, slim, strong handle, it will serve instead of the staff described. In addition you carry a strong haversack filled at the start, if you are wise, with substantial food, to be replaced with desirable bulbs, specimens of bark, acorns, cones, etc., as found.

Instead of the portfolio, for short excursions, some collectors take a tin box (vasculum) closing tightly, and provided with a handle and strap for carrying on the back. Plants of a coarse nature may be so carried for several hours by occasionally sprinkling them with water, but delicate and minute plants should be put in papers at once. You are now fully equipped.

How to Collect.

Arrived at the locality of the plants desired, gather them carefully, roots and all, of the small ones, choose a shade, if convenient, and open your portfolio at the edge of the last flowers enclosed. Open the empty folios, one after another, place within each one or more plants in a natural shape, cleaned of soil or dried leaves and stems, the roots or larger parts being disposed near the corners or otherwise, so that as the pile increases it will rise up squarely. The flowers should be open, and show, if possible, their essential organs—the stamens and pistils. Make them face outward, either by drawing the plant gently downward a little, or, if it droops, the open-facing can be better accomplished by touching the lower petals or side of the flower to the paper, and gently pushing upward. When dry, the plant can be turned. If possible, the specimen should show fruit as well as flowers.

In case the plants are thick or very succulent, it is often advisable to split them open and spread them, and even to cut away interior parts. Drying may also be expedited by dipping the plants momentarily in hot water before placing in folios. Dead leaves and tufts near the roots may generally be removed without loss of characters, also sections of too heavy stalks. Grasses are generally doubled and held in place by strings, or by passing the bent culms through a slit pierced in a small piece of paper.

What to Collect.

Plants, to be valuable as botanical specimens, must show all their characteristic parts, retain their natural color, and be capable of handling for examination. These ends are best accomplished by careful selection of specimens and the speedy extraction of their juices under pressure between papers.

Beginners generally err in several of these particulars, and much hard work is wasted and the collector often seriously discouraged. The writer lost the labor of many months for want of proper instruction.

Select plants of medium size, if possible containing all the organs complete, and in a forward state, with mature fruit, or nearly so. If not possible, then parts of the plant illustrating its entire organs, habit, uses, etc. These, collected at the end of the season and presented in a series, form acceptable specimens, especially if accompanied by copious notes, recording locality, habit of growth and time of collecting. Avoid the too common practice of collecting merely blooming plants. They are only valuable as beautiful ornaments. "Too young" are the words most frequently found in the reports of determinations received from Dr. Gray by the anxious beginner in botanical research.

If the specimen is necessarily too long for the folios, double once or twice lengthwise of the page. Be sure that every part is included within the limit of 15 inches, so the plant may be admitted to an herbarium or permanent collection of dried plants, 12 by 15 inches being the established standard of dimensions in all noted herbariums.

Pressing the Plants.

Arrived at home, take out from the portfolio all your folios of plants; assort into two or more classes, the most succulent in one class, the next juicy in another, then putting the small or nearly dry ones in still another class. The latter, with the large family of grasses and the ferns, will need much less care in pressing than the first classes. Have ready an evenly-piled lot of dryers. Place one on the table, or whatever space you allot for drying; place a folio of plants upon it evenly, looking perhaps to see if flower and leaves show to the best advantage, and carefully correcting misplacements, if any. So continue until all the plants are piled up evenly, each class described above by itself for separate subsequent treatment. Put a short board upon each pile and weight it down with a stone, or, better, bags of sand. For the smaller, dryer plants, weights of a few pounds are sufficient; for the larger, more succulent plants, the pressure should weigh 30 to 50 lbs. But never crush the flower by too heavy weight.

It will hasten the extraction of moisture very materially by placing two or more dryers between the very succulent plants. Remember that the more speedily this is accomplished in this manner the brighter the colors will remain, and the tougher will be the specimen.

Changing Dryers.

Now comes the toilsome, monotonous, uninteresting part of botanical work. It is best to learn to do it deftly—mechanically, as it were—so that the general interest in floral research may not flag.

Coax some one to assist you by liberal promises of large rewards, if necessary, and if your conscience will allow. Remove the weights from your plants and prepare to change the dryers. This should be done as often as once a day, or oftener, for the succulent classes, but the others may remain longer untouched. With a knife-blade or other pointed instrument in the hand, raise the edge of a folio of plants; grasp and remove it to a vacant space on the table while your assistant snatches away the dryer beneath and casts it out into the sunlight, or piles the lot up to be sunned afterward as a distinct job. If you have plenty of dryers you can employ another assistant by having dryers placed between each of the folios as you place them for a new pile. This slavish work can be done very speedily after a little practice.

At this first changing of dryers, perhaps the grasses, ferns and other little things may be found dry enough for storing away. A little practice, also, is necessary to determine this. As a rule, when the folio is found dry and the plant will bear handling, with no green or juicy parts remaining, it may be safely packed away. This do in smooth, even bales, or place in suitable boxes, laying a board and a light weight upon them. Before thus storing the plants they should be consolidated as far as convenient, the specimens of the same species or family united, and the folios all evenly filled. At this period reserve good, full specimens of such plants as you wish determined and put them aside.

Determination.

Up to this date the collector on the Pacific coast has been possessed of little data wherewith to determine plants for himself, and so we have been obliged to send all our plants abroad for determination and names. This involved the necessity of preparing two sets of specimens, attaching numbers to each plant, sending one set to Dr. Gray or some other eminent authority, or sending the plants of certain orders to certain scientists skilled in their especial study, and reserving the other set as duplicates, to be carefully kept to await the report of the determining party.

The writer arranged his duplicates into their respective families and species and placed them in large books, now forming very attractive, portable herbariums. The plants are fastened to the right hand pages of each leaf by narrow pasters of white paper, holding the plants firmly at several points. Strong, thin tissue paper gummed on one side with mucilage, then cut into strips, and applied by moistening the ends with the tongue, will answer, but strips of court plaster are best of all. Near each specimen is fastened, by gumming one end, a narrow label bearing the number, name and namer of the plant, and often the locality and habit.

If desirous of sending away plants to be determined, place them in papers to form bales not to exceed four lbs. weight at present regulations, for which the postage will be one cent for each ounce. Firmly attached to each plant fix a slip of paper bearing its number. These slips may be prepared by gumming the edge, for half an inch, of a strip of writing paper three inches wide. Cut the paper into strips, moisten the gummed end and pass it around some part of the plant and press against the body of the strip of paper, leaving a flying portion sufficient to receive the number in pencil.

Sending Plants by Mail

Plants, either alive or dried, are regarded as third-class matter, and admitted to the mails under certain conditions. The package must be under a certain weight and size, must injure no other matter, and be so wrapped as to disclose its contents to the satisfaction of the post officials, and must contain no written words except the labels. The penalty for a violation of these regulations is $25. Put your dried plants, each bearing its number, into clean papers, of a size sufficient to contain all, place beneath and above them a stiff pasteboard, paper box covers will do, of suitable size; enclose all, if you wish, with a wrapping paper, leaving one end exposed for inspection, and tie tightly with twine; address plainly, and put on stamps equal to one cent for each ounce. Accompany the package with a letter of announcement and notes of the plants, if possible.

To send live plants choose the autumn season when the plants are asleep; wrap them with guttapercha; make package nearly air-tight; surround the mass with moss or fine-thread lichen dipped in water, then squeezed perfectly dry to the thickness of an inch or more; then wrap loosely with strong paper; tie with twine, leaving an aperture for inspection as before.

The "Exceeding Great Reward."

By the aid of the long waited for, now at hand California *Flora*, issued in 2 vols., price $6 each, from the Cambridge University, by Dr. Asa Gray, and a large corps of assistants, the varied and rare flora of this most interesting Pacific slope may be determined. Now a pure and lofty pleasure may be experienced in the recognition of the characters, and the learning of the proper scientific names of the beautiful gems lavished about our pathway. So difficult are some of our mountain ranges of ascent, and so certain are isolation and peculiar climates to produce distinct specific characters, that almost every peak and secluded dell has its special flora.

I will not attempt to describe the ecstasy of joy that thrills the soul of the true lover of nature, when, after a long and toilsome excursion, he is informed for the first time that he has enlarged the realm of knowledge by the *discovery of a new plant*, and that his name is to be associated with it in the beautiful, uncorrupted Latin language, to be uttered by the scholars and scientists of every civilized nation throughout all coming time! But missing this honor, what is equally as laudable is sure to be achieved, *i. e.*, increased knowledge of little-known plants.

The chief reward, however, is found in the increased vigor imparted to both body and mind by the arduous pursuit of botany.

FLORICULTURE.

Hardy Flowering Shrubs.

The following essay was read at the last meeting of the State Horticultural Society by Ed. Wolleb, of Fruitvale, Alameda county:

It is not our object to consider, name or recommend those hardy flowering shrubs which are found in every garden; we will merely treat of some neglected plants, or of some novelties which are worthy of culture.

No well-defined limit can be given where plants cease or begin to be hardy in our State, therefore let everyone take our recommendations *cum grano salis*.

A gem amongst flowering shrubs is the rhododendron, neglected probably on account of its requiring certain conditions to thrive and flourish. The varieties, *R. ponticum, catawbiense, campanulatum, arboreum* and *hybridum*, would certainly do well, with proper culture, in the cooler counties of our State. When massed together and in bloom they produce an effect that nobody will forget who has seen it once.

In *Pœonia arborea* we have another neglected diamond, only because it is so slow a grower. The older the plant, the better, and when about 20 years old they are in their glory.

Hydrangea paniculata grandiflora is one of the best; a large deciduous shrub, fast grower and of easy culture, and bears large pyramidal panicles from 12 to 18 inches long, and continues long in bloom. Its flowers are white.

There are different varieties of *Ceanothus*, indigenous to California; dark evergreen, large shrubs, with charming light or dark blue flowers. Who can tell why this shrub is so seldom seen and cultivated?

Lonivera fragrantissima and *Olea fragrans* are large shrubs; flowers not conspicuous, but deliciously fragrant.

Hypericum patulum is a nearly ever-blooming small shrub, with yellow cup-shaped flowers.

Magnolia conspicua can be trained as a large shrub or as a tree. Flowers are white and fragrant, and appear before the leaves do. A variety with purplish flowers is *Magnolia soulangeana*.

Of *Hakea*, an evergreen flowering shrub or small tree from Australia, represented by about 60 varieties, very little is seen, although it deserves a place in a large collection.

Arbutus texana is a rare, small tree, with small lanceolate evergreen leaves, small white cup-shaped flowers, which are succeeded by bright scarlet berries.

Chilopsis lineatia, a large shrub with bignonia-like, fragrant flowers.

The Leptospermum's, Melalenca's and Metrosideros constitute, with others, a numerous, well-known family, the Myrtacaca, and are ornaments of our gardens, large or small.

Choisya ternata is a profuse bloomer, with ivory white fragrant flowers, similar to orange blossoms.

Carpenteria californica is a rare native, very bushy shrub with large white flowers.

Cephalantus ouidentalis is another rare native and evergreen shrub, with white globular aromatic flowers.

Desmodium penduliflorum, a dwarf Japanese shrub, covered with purple flowers, whilst the *D. japonicum* has white flowers.

Styrax Japonica is a vigorous, compact shrub, with pure white flowers.

Olerea hastii, of New Zealand, is covered in spring with masses of white fragrant flowers.

Habrothamnus nevilli has pure white flowers, and will contrast beautifully with the well-known *H. elegans*.

Of the numerous Acacia family, the *A. aramata, argyrophylla, binervatia, celastrifolia, cultriformis, cyanophylla, dentifera, discolor, graminea, hispidissima, leiophylla, linearis, longifolia, lunata, mairadenia, mitchelli, nigricans, orinophylla, pulihella, riceana, rostellifera, salicisolia, suavolens, vestita, verticillata*, are the most desirable varieties, some of which can be grown as small trees. For larger trees, the *A. melanoscylon* is best for form and strength, whilst *A. latifolia* is worst for strength, the branches being easily broken off by winds. *A. deabbata* and *molissima* make beautiful trees; the former is a shyer bloomer, but has prettier flowers than the latter.

The Farnesian Acacia.

Important in reference to their value in rural economy are the *Acacia farnesiana*, which produce the fragrant flowers so much used in perfumery, and the *A. homalophylla*, the wood of which is highly prized and dearly paid for by manufacturers of fans, etc.

In every Moorish garden in north Africa, there can be seen a few trees of the *A. farnesiana*, of which the flowers are gathered by women and children for family use; whilst in France and Italy it furnishes a not unimportant article of commerce. In the district of Cannes alone about 36,000 lbs. of flowers are yearly produced, for which the perfumers pay from 50 to 75 cents per pound, which would amount to about $45,000. One tree furnishes, according to age, from one to five or more pounds; and one acre, planted with about 800 trees, would produce in a few years a notable increase of income to many of our farmers, some pin money to their wives, besides making farm work and farm life both pleasant and profitable to their children. But this pleasant prospect cannot be realized as long as the extraction of perfumes is not undertaken, because the acacia flowers, like most of those flowers whose perfume is extracted, must be treated while fresh and on the spot.

Is it not to be regretted that such a profitable and important branch of horticulture is neglected, and that the ambition of our land holders and rich men goes rather in the direction to produce fast horses than to introduce, encourage and foster such industries, which would give employment to thousands of women and children, and in this wise be more conducive to the welfare of the community in which they live, than if they raised a horse that could make a mile in one minute? And what will and can this society do in this desirable direction beyond discussing the question and perhaps recommending a remedy; or will not that part of the press which is usually wide awake when the political or commercial interests of the commonwealth are under discussion, agitate in this direction and help to produce a good crop from a kernel of suggestion?

Wood Acid.

An important industry is growing up in the manufacture of pyroligneous acid, or wood vinegar, distilled from woody fiber. The harder kinds of wood are used for this purpose, such as oak, birch, beech and maple. The distillation takes place in closed retorts, by means of a heat gradually raised to low redness. The country along the line of the Ontario and Western railroad, in Delaware and Sullivan counties, N. Y., is occupied by manufactories of this article, for the vast growth of hard wood in that section of the State is as essential to this business, as a bark supply is to a tannery, or logs to a sawmill. A dozen factories are now in operation in the two counties named, and several more are to be started. For years the secret of manufacture was kept from the public, as those in the business chose to make a monopoly of it, and keep up the prices as long as possible. The products of the factories are alcohol, or naptha, charcoal, and ashes. The acid, when ready for market in barrels, is a dry, dark-colored substance, in small pieces, and looks about like hickory bark if broken into pieces. In an estimate of the weekly business and profits, the books run thus: Cost of wood, $140; six men, $45; lime, $10; cartage, $10; interest and wear and tear, $15. Total, $220. Credit with five barrels of alcohol sold, $260; the weekly sale of charcoal, $40; five tons of acetate, $360; ashes, $12.50. Total, $862.50, showing a net profit weekly of $642.50. Owners are inclined to exaggerate the cost of factories, representing it all the way from $20,000 to $30,000. Five or six thousand dollars is about the figure.

LUMINOUS PAINT is now being utilized for door plates, house numbers and signs. The advantages are obvious.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully requested for this department.

National Grange Citrus Fair.

It will be gratifying to all members of the Order to read of the success which attended the second annual Citrus fair held under the auspices of National Grange, National City, San Diego county. The San Diego papers, the *Union* and the *News*, each gave good space to reports of the fair, and we shall therefrom compile a report which we trust will be acceptable:

The Decorations

Over the main entrance, in the shape of an arch, was the appropriate inscription—and a the same time happy conceit—"By Their Fruits Ye Shall Know Them,"—while upon the rear wall was the pleasant greeting, "Welcome All." On the left of the entrance was another device, worked in another evergreen—"P. of H."—with a sickle and spade crosswise in the center—the initials standing for "Patrons of Husbandry." On the left was a representation of a plow, also in evergreen—an artistic piece of work. In front of each window was a broad palm leaf, and from the top of the casing was suspended an evergreen circle, in the center of which hung clusters of fruits. Along the sides were also distributed various decorations, relieving the walls of their barrenness. From the cross-beams above evergreens were so arranged as to form an anchor, while fruit clusters were pendent here and there to relieve the space overhead, which, combined with the loaded tables below, gave one a sense of tropical luxuriance. Good taste was displayed in all the decorations, while here and there cropped out evidences of an exquisite sense of that subtle art that finds expression only in a perfect picture.

The Fruit Tables.

The first table at the entrance of the room was occupied mostly by the fruit of Mr. D. McRae, of Spring valley. He had some 13 varieties of oranges, the largest of any one exhibitor. It was a very fine collection. On the same table Mr. H. M. Higgins, of Sweetwater, had a small collection of oranges. But the chief attraction of his exhibit was his Bonnie Brae lemon. Mr. Bates, who recently purchased Dr. Port's place, in Chollas valley, also contributed to the handsome orange exhibit of this table; and Mr. J. S. Gordon, of San Diego, added a basket of as fine, large guavas as we have ever seen.

The second table was occupied by the oranges of Mr. J. S. Harvey, of Jamul, and the contribution from Riverside. Mr. Harvey's collection was the largest at the fair, consisting of five varieties. In the center was a pyramid of 56 large Navel oranges, which was surrounded by 34 smaller pyramids (on plates) of different varieties. The exhibit on the opposite end of the table, from Riverside—oranges, lemons and raisins—was not large, but very fine. The Washington Navel orange is a beauty.

On the third table, Mr. E. Owens, of Paradise valley, made a very handsome display of oranges, and also of lemons. Joining this collection was the splendid display of lemons and limes belonging to Mr. P. P. Tomeny, of Spring valley. He had some six varieties of lemons, and made the largest exhibit of this fruit at the fair. The remainder of the table was occupied by the collection of oranges and lemons belonging to Mr. Geo. C. Swan, of Paradise valley. There are 15 varieties of oranges—the largest variety by any exhibitor at the fair—and five varieties of lemons.

The chief attraction of the fourth table was a large pyramid, some five ft. high, which was the handiwork of Mrs. Frank A. Kimball. It had a triangular base of about two ft. high, one side of which was built of oranges, another of lemons, and the third of apples. The base was surmounted by three large jars of fruit, upon which was placed a series of glass stands loaded with fruit, and the whole was crowned with a bunch of calla lilies, with the delicate smilax gracefully hanging about its sides. The remainder of the table was occupied by a fine collection of oranges from the orchard of High Bros., and a number of smaller contributions.

The fifth table was of a miscellaneous character—fruits in glass jars, jellies, bottles of wine, pickled olives—which were all very fine. This table was also occupied by a collection of apples from the orchard of Mr. E. Steele, of Paradise valley. One of the varieties, Nickajack, was worthy of special mention.

On the last table in the rear of the hall were several exhibits of special attraction. Mr. R. G. Clark had two boxes of raisins that ought to give any section an enviable reputation. Mr. Swan also had two boxes of dried figs that were very choice, and Mr. S. Vanni a variety of vegetables that places Chollas valley at the head of the list as a rich garden spot.

General Mention.

There were many other things deserving of special mention. T. J. Swayne had two beautiful mandarin trees; Mr. Parsons exhibited a branch of a young olive tree heavily loaded with fruit; there were many handsome bunches of oranges hanging on small stems; a bunch of bananas from the garden of Mrs. Morse, of San Diego, was among the curiosities; a beautiful specimen of native cotton, grown at National City, and fashioned into a hanging basket by Mrs. Flora Kimball, hung in the center of the hall as a graceful pendant.

A Pleasant Interlude

During the afternoon of the second day, the visitors at the fair were called to order, and Hon. E. T. Blackmer, of National Ranch Grange, in a few well-chosen remarks, presented to the Grange, as the gift of Mr. L. M. Holt, of Riverside, a beautiful gavel, made of Riverside lemon-wood, bearing a silver plate with an appropriate inscription handsomely engraved.

Mr. W. C. Kimball, Master of National Ranch Grange, in response to calls, gave a brief history of the work of that organization, and of the preceding fairs held under its auspices. He said the particular interests of San Diego county should be united and work harmoniously for the development of our resources; the displays made at these exhibitions showed what could be produced here; there was no finer field in the world for well directed enterprise and energy.

The Entries.

D. McRae, Spring Valley. Oranges—Seedlings, Navel, Malta Blood, Mediterranean Sweet, St. Michael, Higgins' Seedling, Nelson's Seedling, Bergamot, Mandarin, Pumalo; also, specimens of St. Michael's and Mediterranean Sweets for 1880. Lemons—Sicily Seedling, Virginia Sweet Rind. His table contained large clusters of his fruits, and clusters hung over the table.

G. H. Zeigler, Fallbrook. Oranges—Seven varieties; names not given. Wine—Six bottles, pure juice.

Edward Owens, Paradise Valley. Oranges—Mediterranean Sweet, Owens' Seedling, St. Michael, Asher's Best, Jennie Owens' Seedling, Wolfskill's Best, No. 1 Seedling. Lemons—Gates' Budded, Eureka lemon, Seedling lemon, Sweetwater Budded. Mexican lime. Nickajack apple.

G. C. Swan, Paradise Valley. Oranges—Swan's Late, Mediterranean Sweet, Malta Blood, Phipps' Early, Acapulco Seedling, Los Angeles Seedling, Phipps' Nonpareil, Pacific Rural, Cincinnati, Wilson's Best, Florida Navel, Texas Pacific, Cleveland, Seedling, St. Michael. Lemons—Seedling, Olivia, Currier's, Gates', Swan's Best. Lime—Mexican. Apples—Yellow Newtown Pippin. Dried figs. Almonds. Olives—pickled.

Mrs. Swan, Paradise Valley. Twelve jars canned fruit, Moorpark apricot marmalade, fig, quince, pickled peaches, pickled limes, Muscat grapes.

J. S. Harvey, Jamul. Oranges—St. Michael, Nelson's, Konah, Seedling, Navel, Malta Blood, Mediterranean Sweet. Lemons—Genoa, Seedlings, Sweet Rind.

E. Aylworth, Paradise Valley. Oranges—Seedling. Lemons—Sweet Rind, Seedling. Limes. Olives.

T. J. Swayne, Paradise Valley. Oranges—Wilson's Best, Navel, Queen, Mediterranean Sweet, Mandarin, 2 trees. Lemons—Eureka, Sicily, Rubio, Bergamot oranges. Japanese Plum. Eight bearing citron trees. Two loquats.

Joseph Russ, National City. Oranges—Asher's Best.

T. E. Bates, Chollas Valley. Oranges—Wilson's Best, Seedling. Lemons—Seedling.

J. S. Gordon, San Diego. Oranges—Mediterranean Sweet, Seedling, Guavas.

R. G. Clark, Cajon. Raisins—White Muscats.

J. C. Frisbie, National Ranch. Oranges—Seedling, Asher's Best, St. Michael, Navel, Wilson's Best, Mediterranean Sweet. Lemon—Sicily.

E. T. Blackmer, National City. Oranges—Seedlings, Asher's Best, Mediterranean Sweet, St. Michael. Lemon—Seedling.

B. W. Caryl, Sweetwater. Oranges—Seedlings, Navel. Lemon—Seedlings.

E. Aylworth, Paradise Valley. Oranges—Seedlings. Lemons—Sweet Rind, Seedlings. Limes—Mexican. Almonds—Paper-shell, Languedoc. Zante currants.

Gail Borden, National City. Figs, almonds, olives, fruits in glass, 9 varieties; jellies in glass, 6 varieties.

James Currier, Sweetwater. Oranges—Seedlings, St. Michael, Florida Navel, Mediterranean Sweets, Los Angeles Navel.

High Bros., Chollas Valley. Oranges—Navel, Mediterranean Sweet, Wilson's Best, Woolfskill's I. X. L., Seedlings, St. Michael. Lemons—Lisbon, Seedlings, Guava jelly.

E. Steele, Paradise Valley. Apples—White Winter Pearmain, Newtown Pippin, Nickajack. Peaches. Plums. Pears.

Mr. Lancaster, Penasquitas. Oranges—Seedlings. Lemons—Seedlings.

Geo. L. Kimball, National Ranch. Oranges—Mediterranean Sweet. Lemons—Budded, Sicily. Pickled olives.

L. B. Hoffendeh, Chollas Valley. Oranges—Mediterranean Sweet.

Theron Parsons, Paradise Valley. Apple—White Winter Pearmain, Newtown Pippin, Nickajack, Rhode Island Greening. Olives.

P. P. Tomeny, Spring Valley. Lemons—Seedling, Spring Valley, Sicily Seedling, Lisbon Seedling, Australian Seedling, Los Angeles Yates'. Limes—Mexican.

H. M. Higgins, National Ranch. Oranges—Seedlings, clusters. Lemons—Seedling, Bonnie Brae.

Moses Norris, National Ranch. Lemons—Seedling, Lisbon.

W. C. Kimball, National City. Oranges—Navel, St. Michael. Lemons—Lisbon. Olives.

Mrs. E. A. Brewster, Paradise Valley. Oranges—Asher's Best, Maltese Blood, Navel, St. Michael. Lemons—Sicily, Seedling.

Mrs. Lizzie Fleming, Paradise Valley. Jelly—Thirteen glasses, 6 varieties.

S. C. Field, National Ranch. Lemons—Sicily Seedling. One bottle Rose Peru wine, 1881. One bottle wine vinegar.

S. Vanni, Chollas Valley—Cauliflower, turnips, carrots and leeks.

Ira Floyd, National Ranch. Oranges—Navel, Seedlings.

Ira Floyd, National Ranch. Oranges—Navel, Seedlings.

Frenk A. Kimball, National Ranch. Orange—Louisiana. Apple—Ben Davis.

S. Whitmore, Chollas Valley. Jelly—Guava.

Mrs. E. W. Morse, San Diego—Banana.

Mrs. J. G. Capron, San Diego. Oranges—Navel, Wilson's Best.

Charles Hubbell, San Diego. Oranges—Mediterranean Sweet. Lemons—Seedlings.

Mrs. F. K. Shepard, San Diego. Lemons—Sicily.

Riverside Exhibit.—Perry & Cover: Oranges—St. Michael, Seedling. T. W. Cover: Oranges—Washington Navel, Favorite. W. B. Russell: Muscat Raisins. Edwin Hart: Oranges—St. Michael, Washington Navel. Lemons—Lisbon, Sweet Rind.

Awards of Premiums

Best display of citrus fruits, grown by one exhibitor, in the State of California—D. McRae, Spring Valley.

Best display of citrus fruits, grown by one exhibitor, in San Diego county—Edward Owens, of Paradise Valley.

Best display, one variety, of budded oranges—Edward Owens, of Paradise Valley.

Best display, one variety, of seedling oranges—H. M. Higgins, of Sweetwater Valley.

Best budded orange—T. W. Cover, of Riverside, for Washington Navel orange.

Best seedling orange—P. D. Cover, of Riverside.

Best Navel oranges—T. W. Cover, of Riverside.

Best Malta Blood orange—D. McRae, of Spring Valley.

Best Mediterranean Sweet orange—T. J. Swayne, of Paradise Valley.

Best St. Michael's orange—Mrs. E. A. Brewster, of Paradise Valley.

Largest and finest cluster of oranges—D. McRae, of Spring Valley.

Best display of lemons—Edward Owens, of Paradise Valley.

Best lemons—W. C. Kimball, of National City.

Best display of limes—Edward Owens, of Paradise Valley.

Best raisins—R. G. Clark, of Cajon Valley.

Best figs—Gail Borden, of National City.

Best Zante currants—E. Aylworth, of Paradise Valley.

Best pickled olives—Geo. C. Swan, of Paradise Valley.

Best almonds—E. Aylworth, of Paradise Valley.

Best apples—Theron Parsons, of Paradise Valley.

Best display of fruits in glass—Mrs. Gail Borden, of National City.

Best jelly in glass—Mrs. E. Fleming, of Paradise Valley.

A special premium of $15 was awarded to J. S. Harvey, of Jamul Valley, for best display of oranges.

The Grange.

It is to be confessed that in the hot haste of early formation, fruitful cause for antagonisms was given to many outside "the gates," and which was kept alive by those within, who did not, under the first ebullitions of feeling, allow the triumph of reason. It must be remembered in extenuation of this unpleasant attrition with those not of the Grange, that all rapidly-forming popular tides, like the Grange, beget degrees of excitement between classes of our fellow men not conducive to calm reason and amicable feeling. This result does not attach solely to the Grange.

When the "sober second thought" came, and the rush of the hastily-formed and mighty host of Patrons, made vain by the force of exultant numbers, had been quieted, these mushroom advocates began speedily to inquire, where is the promised talisman that unlocks the treasures? As a prominent leader has said: "With a rush, people went into this Order that seemed to promise better things immediately to come; help to the needy—education to the ignorant—relief from grevious burdens and deliverance from a state of hopelessness and despair to one of promise and good cheer. * * * * There came no manna from heaven, nor had the Grange any bread to offer hungry men and women. It had not allured with promises of food and raiment, and could only vouchsafe benefits as a result of wisely-directed and united effort. Such seemed to be the lukewarm—the selfish and designing, empty and contemptable objects, not worth pursuing. So they turned their backs upon the Order and left but a remnant to support its banners."

This partially photographs the early formation and transition state of the Grange, and remits us to its present status, achievements and prospects.

While the Order cannot rejoice in its pristine numerical strength, it yet retains elements which tend to secure perpetuity. There is now no glamour overspreading its mystic halls, and when men and women seek admittance therein, it is with an intelligent consciousness of the true benefits to be derived and usefulness exerted. They are not taught to expect instantaneous bonanzas. They know what patient co-operative efforts are securing and will continue to secure. They have been convinced by "line upon line, and precept upon precept" that tillers of the soil sorely need that which the history of the past has demonstrated to be a necessity—*organization*. By the light of the Grange, farmers are being educated to see what a vast proportion of the burdens of governments they have been called upon to bear, and how little of their fostering, protecting care they have received in return. Through want of organization, they have seen their dearly-earned products enriching every hand except that which made them. Legions of agencies demand of them tribute. To a just share of tribute they do not demur. They recognize the divine command, "render tribute to whom tribute is due." But the growing policy, whose motto is, "how much can the product bear," the Grange teaches to denounce as a blight upon any industry. But this leads to the beginning only of the list of multiplied grievances, under whose galling yoke farmers have so long toiled, and which are sapping the foundation of prosperous agriculture.—*Southern Cultivator.*

Floral Tribute.

We have seen a drawing of a beautiful floral tribute which was offered at the funeral of the late J. C. Weinberger, of St. Helena, Napa Co. A firm friend of Mr. Weinberger, John Lewelling, President of the Grangers' bank, intimated to Mr. Montpellier, cashier, his desire to express his tribute to the memory of Mr. Weinberger in a floral form which would embody the emblems of the Order of P. of H., of which he was an esteemed member. Mr. Montpellier thereupon designed the floral offering of which we have a drawing. It consisted of a cushion of violets in which were studded with white flowers three columns united by arches and between them the letters P. of H. Behind the cushions were the plow, the crook, the spade and the sickle wrought with flowers, and gracefully pendant above them were heads of ripe grain. The design was executed in due spirit by the florist and was admired by all who attended Mr. Weinberger's funeral. It was eminently fitting that such a tribute should be offered to the memory of such a man as Mr. Weinberger, and whose foul assassination filled everyone with most profound indignation and regret. Mr. Weinberger was a staunch friend and patron of the Grangers' bank and an agriculturist of wide and good repute.

Agricultural Notes.

CALIFORNIA.

BUTTE.

Broom Corn.—Gridley *Herald:* Mr. Donahue, of Yuba City, has rented 200 acres of land on the Van Fossen place, and has a crew of men at work preparing it for planting in broom corn. J. E. Vinson, our broom manufacturer has a gang of men at work putting 100 acres in broom corn for his factory. An idea of the money in this kind of farming may be formed from the following facts and figures: An acre of land will yield one-half ton of corn and one ton of seed. The former commands from $40 to $160 per ton; the seed sells for from $15 to $22 per ton. When harvested and ready for the market, the cost per acre rarely exceeds $25, and never goes above $30. On lowlands, near streams, a crop is almost a certainty.

COLUSA.

Editors Press:—The only marks of winter that remain here now are the snow-capped mountains on either side of us in the Sierra and Coast ranges. Trees of all kinds are beginning to assume a summer aspect and the orchards are white with blossoms. The present appearance of the great Sacramento valley affords ample scope for an artist. The pen is too weak to describe the beauties of nature represented here. Here, as well as in other portions of the State, the fields, though seeded, remained black and bare for some time in early winter; but now the earth is carpeted with green and all nature looks gay. With favorable weather during April we will have in this direction at least an average harvest.—L. D. J., Olimpo, March 27.

HUMBOLDT.

Humboldt Lands.—Richard Johnson, of Bear river, sends a letter to the Ferndale *Enterprise*, in which he criticises some of the statements made in the circular issued by the Eureka Chamber of Commerce: "I do not know of any grazing land that can be bought for less than $5 to $15 per acre. Some grazing land very lately changed hands for the last-named figure, and I do not know of any grazing land on the coast that can be bought for $5 an acre. Perhaps out in the Bald Hills country ranges can be bought, that is, including what is claimed by inclosing it, which virtually there is no title to, for $5 an acre. I have lived in the stock region of this county for 25 years, and know what I am talking about. There is a great deal of vacant land—that is, land owned—that if properly cultivated might be made into homes, that can be bought for from $20 to $40 an acre. To sum it all up in a few words, there is very little chance for a man to get hold of land in Humboldt county that is worth anything for $1.25 an acre, and when it comes down to facts, the class of men that there is room for are men with some means and laborers." He says, also, that dairymen do not pay $30 to $60 a month for hired help, but that they do pay $22 to $35 a month—perhaps $40 a month in some isolated cases. He asserts that any dairyman who pays $60 a month to his hired help is possessed of more money than brains, for it would bankrupt the employer. It would take the gilt edge from the finest Bear River butter, and take the butter, too.

Live Stock.—Humboldt *Times:* Last year quite a number of large bands were driven out of the county. It is thought there is scarcely enough beef cattle here to supply the needs of the county. A supply will have to be obtained from abroad. Two years ago beef was selling on foot for three and a half to four cents per pound. Now it is five and a half and six cents. Last week a band of cattle was driven out from the Mattole valley, for which the high price of six cents was paid. The Oregon and Idaho country has drawn heavily on the Eastern market, and it is said the supply there is also growing very limited. H. W. McClellan has had considerable experience in sheep raising and wool growing, and at the present time has a fine sheep ranch out in the neighborhood of Bridgeville. In speaking of the late storms, he expressed the opinion that the loss in sheep this winter will prove much greater than most people suppose, and the truth will not be known until shearing time. He says the storms of February and March were very heavy and, notwithstanding the sheep were in splendid condition when the heaviest storms came, they soon began to lose flesh and grow thin, not only from snow, but the cold snap had frozen the grass and ground so there was no substance and nourishment in the feed, and there was nothing for the sheep to build upon. He thinks that in some localities the increase will make up for all losses, but on some of the colder ranges the count will show a heavy balance the wrong way.

SHASTA.

Turkeys.—Anderson *Enterprise:* Never in 30 years have turkeys been so plenty and cheap as this year. We hope this is only a beginning of the good time coming. If we are not mistaken, those localities where they can be safely raised will find nothing more profitable. There must be money in raising them at 10 or 12 cents a pound, and there is money in buying them at retail at 15 or even 10 cents per lb. Once a week a good turkey dinner is a feast fit for a king. We speak as consumers to our friends in the country. Be sure to cultivate them. To this end learn how to feed and care for them during the first few weeks. After that, they look out for themselves.

SAN LUIS OBISPO.

SHEEP.—*Tribune:* All in all, the season has been a very poor one for sheep men in southern California. The wool will be short in growth and lacking in many of the qualities of first-class wool. While our sheep men have suffered nothing in comparison with those of neighboring counties, still their returns will show a marked decrease from those of last year. The mortality among the lambs will materially lessen the percentage of increase to the flocks that would have been realized had the season been favorable. But with all the drawbacks and losses, most of the sheep men have reason to congratulate themselves that the result is no worse than it is. The prospect was sufficiently dismal a few weeks ago to make even the slightest change for the better very acceptable. The outlook at this time is exceedingly favorable. Indeed, it may be said that all danger is passed for this season.

TEHAMA.

NOMA LACKA RESERVATION.—EDITORS PRESS: Prior to March 12th, the prospects for a good crop of either grain or hay in this section looked rather gloomy, but since that time we have had very little cause to grumble. The weather for the last few days has been very favorable, causing the young grass and grain to start up with renewed vigor. Fruit trees are in bloom, and the prospects for a good fruit crop were never better. As the season is so far advanced, the probabilities are that we will not have any more frost, but the snow is very low down on the hills, and we may have frost at any time. We can only hope it will not again visit us this spring. The past winter has, without a doubt, been the coldest known here for many years. Losses in sheep have been pretty heavy in this neighborhood. Several sheep men inform me that they will not raise lambs enough to make their old stock good. Other stock has done very well, the loss being very small—L. W. G.

Improvements in Riverside.

Several large, fine houses have been recently built on the streets and avenues, and are surrounded with well laid out and ornamented grounds—improvements that add greatly to the charm of pleasure riding about the colony. It is worth a long journey to Riverside for the delight of a few hours' ride through its beautiful avenues and amidst its well-tilled lands, thrifty-appearing and beautifully-embowered homes. An item of interest is the fact that E. M. Sheldon, contractor, who has manufactured most of the brick for building the past six seasons, manufactured 800,000 last year. The quality is good and the cost favorable to substantial building.

The railroad from San Diego to Colton approaches within two miles of the town. Most likely a branch connection will be made, and soon Riverside will have improved facilities for travel and transportation, which will prove of more importance than the average resident at present anticipates. That is our prediction.

WINDMILLS.—F. W. Krogh & Co. are manufacturers of windmills, horse-powers and all kinds of pumping machinery, with offices and works at 51 Beale street, S. F. This pioneer establishment of the coast has given satisfaction for the last 30 years, as their numberless testimonials will prove. They have introduced all known improvements to date. They have lately constructed a windmill and tank for the Old Ladies' Home, erected near Lone Mountain bv the Sisters of Charity, which raises water 200 ft. into a 45,000 gallon tank. See their advertisement in other columns.

A. E. POMEROY, one of the best known and highly respected citizens of San Jose, has lately established himself in the real estate business in Los Angeles. From all appearances, the latter city and a large part of southern California is just entering upon a new and substantial growth, and it is the opinion of the writer, who has known Mr. Pomeroy long and well, that in his new field of active business life, he is "the right man in the right place."

THE ACME HARROW, the same as advertised in our columns, was exhibited outside of the Citrus fair pavilion, at Riverside, and received many flattering testimonials from those who are using them. It would appear that its use, in southern California at least, was destined to become quite general, or almost universal.

TELEGRAPH AT REDLANDS.—Judson & Brown intend to build a business office immediately in their new town of Redlands, near San Bernardino, and have the same connected with the world at large by telegraph, within two or three months at farthest.

TOURISTS to Los Angeles should not forego the rare pleasure of a visit to the Sierra Madre Villa, kept by W. P. Rhoades, on the mesa lands near San Gabriel. The place has been crowded during the past winter by the wealthiest of California and Eastern visitors.

FISHER, RICHARDSON & CO., nurserymen, o Los Angeles, are closing out their business. Mr. Richardson will soon remove to Pasadena, where our readers will no doubt hear further of Mr. and Mrs. R.'s fine poultry raising.

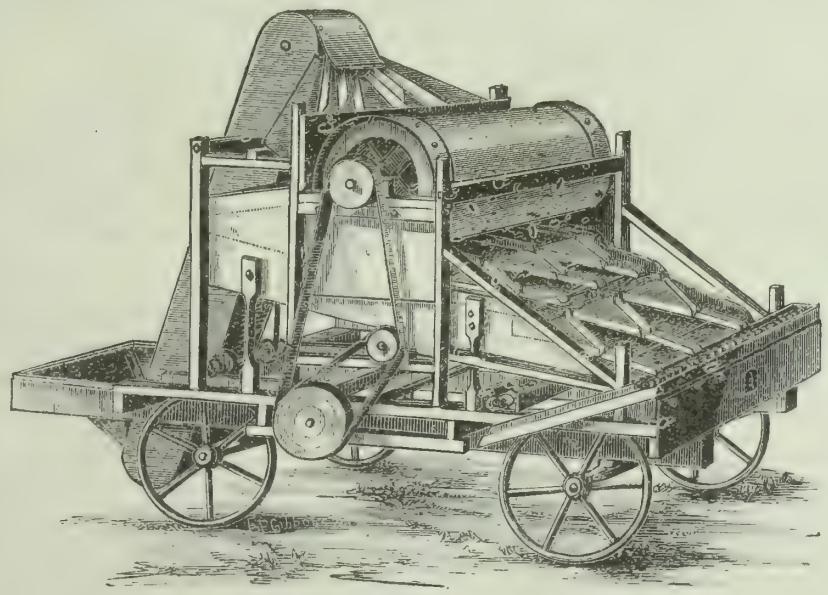
Wheat Cleaners.

The use of wheat cleaners attached to thrashing machines is becoming general, and farmers are demanding, more or less, that thrashers thrashing for them should use them. It will not be long before they will be as indispensable to a complete rig as the cook-house has become, owing to the system that is being rapidly perfected here to strictly grade all wheat put on the market. The result cannot but inure to the reputation of California wheat abroad, and we welcome them as great auxilliaries in elevating the standard of our wheat exports.

With our best separators uniform cleaning cannot be had, owing to various causes—stopping and starting, changes in the motion, belts flying off, dampness in the stack, etc., all make sacks more or less foul. Should the trier miss these foul sacks it would be all right; but somehow it seems to have a peculiar attraction towards them, and as the farmer watches the process, he declares: "Well, I thought the machine was cleaning better than that." Of course, the buyer grades down a dollar or two to meet this condition. Had the wheat been run through a good cleaner, every sack would have been up to full grade if the berry were good.

Time was when the buyer made no distinction, looking only to the plumpness of the grain; but as such times are passing away, farmers will have to use more effort to put their grain into the market in good shape. While it is impossible to take out all the oats and barley, a good cleaner will make No. 1 shipping out of very foul wheat.

The advantages of a cleaner are not all on the side of the farmer, as it enables the thrasher to relieve his separator by using a coarse sieve, lowering the wind blast and let the cleaner do the rest of the work, thereby avoiding the one great trouble of blowing grain over the shoe into the chaff pile.



CARTER'S NEW WHEAT CLEANER.

We illustrate on this page a new wheat cleaner, the invention of G. W. T. Carter, of Byron, Contra Costa county, whose plant of thrashing machinery was illustrated in the RURAL PRESS of date November 19, 1881. Mr. Carter used several of the cleaners now in the market last season with his machines, but found them, as others have, so deficient and troublesome, that he set to work to make a cleaner that would do his work rapidly and satisfactorily. In the construction of his cleaner he has aimed to overcome these troubles, and now offers to his brother thrashers, a cleaner which he assures us runs smoothly and quietly; does not require constant attention to keep clean, nor half the crew to put it in position. It is built on the ordinary header gear, so it will keep in the road and handle easier than when the wheels are 8 feet apart.

Zinc screens, six feet wide, with round holes are used. The elevator is placed in the middle of the back of the cleaner between the sills, instead of on the side. At the bottom of the elevator is a hopper with a slide gate into the elevator, which regulates the amount of feed to the sieves; so that when a dump of clear wheat goes through the separator it cannot overload the sieves, and run good wheat over with the tailings; the hopper holds it till it is gradually worked off. The elevator discharges upon a distributing board which distributes the grain evenly over the sieves, whether feeding fast or slow without any adjusting; thence upon and through a coarse sieve, where it encounters a strong blast of wind; thence upon a slide which discharges it at the upper end of the series of zinc screens, and passing over these screens to the front, is discharged into the sacks. The discharge is high enough so that the grain spout used on the separator can be used on the cleaner.

All the sieves, screens, and cleaning apparatus are in one shoe, supported by two springs on each side, driven by a cam movement of one-quarter of an inch, with a speed of 600 revolutions per minute.

The cleaning is complete, rapid and saving, scarcely a kernel of wheat finding its way anywhere except into the sack where it belongs. The best principles of "mill cleaning" have been applied to this cleaner in a light and compact form. The grain is conveyed from the separator to the hopper, with an auger driven by a simple device. Unlike other cleaners, it does not have to be built according to the side of the separator the parties intend to use it, (and after which they cannot be used on any other side), but it can be used on either side of the separator, whenever desired. In cleaning up the sheets about the sack-tender, they can be emptied into the hopper instead of taking them to the derrick.

Steps have been taken to secure a patent on this device. Any farther information can be had by addressing the inventor, G. W. T. Carter, at Byron, Contra Costa Co., or M. C. Hawley & Co., S. F. The cleaners are being built at Jackson & Truman's shops, in this city, where they can be examined by all interested.

PACIFIC COAST LAND BUREAU.—This is the style of a corporation with its principal place of business at 22 Montgomery street, San Francisco, and sub-agencies at each county seat of the State. The Directors of the Pacific Land Bureau, with an experience of over twenty years in observing the growth of the Coast, with a careful and conscientious examination of all sources of information, verified by actual observation, have organized this corporation to meet a growing want and public necessity. The Bureau proposes to receive the agency of lands, lands, large and small tracts, timber, grain, vine and fruit lands, and place reliable data before the colonist, immigrant, traveler and tourist. The general office will be in San Francisco, at No. 22 Montgomery street, to which all inquiry may be directed. There will be kept an official record in each county of the State. Sub-agencies will be established at each county seat and persons desirous of visiting a certain section of the State can be directed to reliable persons. The Bureau will accept the agency for sale and exchange of farming lands, large tracts subdivided and sold at auction or private sale. Speclai attention will be given to colonists, immigrants, travelers and tourists, and correspondence is solicited. An advertisement in another column gives further information about the bureau.

Volunteer Testimonials of Those Who Have Used Booth's Exterminator.

SAN LUIS OBISPO, CAL, August 9, 1880.

The undersigned committee, appointed by San Luis Obispo Grange, P. of H., No. 28, have used the Squirrel and Gopher Poison prepared by A. R. Booth, at the Eagle Drug Store, San Luis Obispo, during the growing season, when there were plenty of green things for squirrels and gophers to live upon, and we find that they take the poison above described, at this season of the year, and that the effect is as destructive as could be wished; and it is the cheapest and best squirrel and gopher poison with which we are acquainted, or ever experimented with.

Attest: E. W. STEELE, A. T. MASON, F. F. WHITE, L. M. WARDEN, Com.
Sec'y P. of H., No. 28.

PASO ROBLES, CAL., Jan. 15, 1880.

A. R. BOOTH, *Dear Sir:*—Have tried one can of your Squirrel Poison, and find it very efficacious in destroying squirrels. Should like two cans more. G. W. BREWSTER.

THE COSMOPOLITAN ranks as the foremost hotel in Los Angeles, and has for years past been accorded by far the largest patronage of any house in the city for its leading excellencies. The card of the proprietors may be found in another column.

THE Riverside *Press and Horticulturist*, edited and published by L. M. Holt, is one of the most enterprising publications in the State. The large six-page edition, issued March 25th, was well patronized and appreciated by Riverside and its visitors.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, April 29, 1882.

Trade is quiet and prices without great fluctuation. Abroad there has been some little stir. The latest advices are as follows:

LIVERPOOL, April 4.—Wheat: California spot lots are hardening, at 9s 8d@9s 11d. Cargo lots are 45s 6d for just shipped, 47s 6d for nearly due and off coast. Cargoes are tending up, with buyers and sellers apart.

The Foreign Review.

LONDON, April 3.—The Mark Lane *Express* in its review of the British Grain trade for the past week, says: English Wheat in London was very quiet at unchanged prices. Barley Malt had a downward tendency. Other grains were without change. Foreign Breadstuffs were slow and foreign Flour very inanimate. Maize was too dear for buyers, the nominal value of American, ex-quay, being 30s 6d. Barley was very quiet and weaker, oats were lower and Beans firmer. Cargoes of off-coast were very liberally supplied, and there was a very feeble demand. No. 1 California Wheat declined in some cases 1s. Of 34 fresh Wheat cargoes which arrived, 5 were sold and 8 withdrawn. Sales of English Wheat during the week were 35,379 quarters, at 45s 1d per quarter, against 28,617 quarters, at 44s 1d, during the corresponding week of last year.

Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive according to the atest advices:

In port.	1882.	1881.
Engaged, tons	51,456	48,218
Disengaged, tons	32 868	852
To arrive, tons	224,662	225,919
Total supply, tons	308,986	274,989
Increase for 1882, tons		33,997

The German iron bark, *Schiller*, 1,227 tons, is chartered for Wheat to Cork, £3 5s; British ship, *William Low*, 1,599 tons, Cork, £3 2s 6d; British ship, *N. B. Lewis*, 1,328 tons, Cork, £3; British iron ship, *Allobab*, 1,191 tons, Cork, private—all prior to arrival.

Eastern Grain and Provision Markets.

CHICAGO, April 1.—On 'Change the week has been active only on local speculation account. Outsiders do not come into the deal, and commission dealers complain bitterly of the decadence of business, and speak ruefully of past good times. They predict, however, that the new crop will even up things, and cause either a very decided break or an exciting rise. The bulk of opinion favors a drop, but the market to-day was firm and higher. Wheat, however, was decidedly dull. The quotations were small and prices declined a little, although outside reports denoted firmness and strength. The weather is warm and bright. The closing price was ⅝@¾c below yesterday. Sales, at $1.29⅞@$1 30⅝ for May; $1.27⅞@1.28¾ for June; $1.23⅞@1.24½ for July. Corn was very active and sometimes excited, prices advancing 1⅜@1¾c, and maintaining their strength. The unfavorable report of the Department of Agriculture was the chief feature of the market. All chances favor early seeding and good crops the coming year. Sales, 70½@72½c for May; 69⅝@71⅜c for June; 70⅛@72½c for July. In Oats buyers were plenty and sellers scarce for cash. They sold up to 1⅝c, and April 3½c, May 3½c, reacting ½c; June 1⅞c, July 1¾c. The near deliveries were chiefly in demand. Sales, 44@47c for April; 46⅝@49c for May; 46⅛@48c for June, 44⅝@45⅞c for July.

NEW YORK, April 1.—Wheat is firmer, notwithstanding the foreign markets are not reported very strong, but at the same time shippers are in receipt of orders, and considerable Winter grades have been taken for export, as Spring is not wanted. Barley remains quiet; No. 1 Canada $1.22. Provisions are quiet and firm.

Eastern Wool Markets.

NEW YORK, April 1.—Wool is very dull and prices lower. Sales include 26,000 lbs and 20 bales of Spring California at 24@27½c; 71,000 lbs Fall and Lamb at 14½@29c; 8,000 lbs scoured at 41@67½c; 20,000 lbs Fall scoured brought 54c.

BAGS—Bags are about as formerly and sales few. The new State bag factory at San Quentin was set in motion this week.

BARLEY—Prices have shown a little better disposition, as demands for present use have increased. On call sales of 200 ctls No. 1 feed, $1.45; 225 ctls do, $1.46 and 225 ctls do, $1.46¼, rising figures. Bids and offers were: No. 1 brewing, old, July, $1.75 bid, $1.77½ asked; No. 2 do, August, $1.20 asked; September, $1.05 bid, $1.15 asked; No. 1 dark, do, September and October, $1.07½ asked; No. 1 feed, April, $1.45 bid, $1.47½ asked; May, $1.47½ bid; June, $1.45 bid, $1.47 asked; July, $1.23 bid, $1.25 asked; August, $1.07½ bid, $1.12½ asked; September, $1 bid, $1.07 asked; October, 95c bid, $1.05 asked; No. 2 feed, June, $1.27½ bid; July, $1.20 bid; August, $1.05 asked; September, 97½c bid, 99c asked; October, 99c asked; No. 1 Chevalier, April, $1.65 asked; September and October, $1 asked.

BEANS The only change is in Pea and Small White, which are a shade lower.

CORN Corn is dull and little doing Bids and offers are fully 25c apart.

DAIRY PRODUCE—Butter prices have improved, owing to the relief of the market by shipments eastward by rail. It is not known yet how much can be worked off this way. Cheese cheaper and in good supply.

EGGS—Eggs are doing a little better, having advanced about 2c ℔ dozen.

FEED The choicest wheat Hay is doing better this week, being quotable at $15 ℔ ton. Other sorts are unchanged. Bran is dull, though there is rather more disposition to speculate. Call sales of 100 and 50 tons, June, $12 25. Bids and offers were: December, $13 bid, $14.50 asked; seller, 1882, $11.25 bid, $12 asked; seller, any month in 1882, $11.50 bid; buyer, 1882, $14.50 bid, $16 50 asked.

FRUIT—There is no change except a cheapening of Mexican Limes. California Oranges are only in fair supply at present, and are selling well at prices in our list.

FRESH MEAT Beef and Mutton are shading off a fraction this week.

HOPS—There is nothing doing at present.

OATS—No sales on call. Bids and offers were: Extra choice, April, $1.75 bid, $1.82½ asked; July, $1.45 bid; No. 1, May, $1.65 bid; July, $1.46 bid, $1.55 asked; September, $1.35 bid, $1.39 asked; No. 2, September, $1.22½ bid, $1.28½ asked; October, $1.22½ bid, $1.29 asked; No. 1, April, $1.62½ bid.

(CONTINUED ON PAGE 276).

The Love of the Old.

Much, much is written, and much is sung,
Of love that dwells youth's bowers among,
When the eyes are bright and the cheeks aflame
With a glow the tints of the rose might shame;
When the heart throbs quick with emotion warm,
And the pulses answer to passion's storm;
But little is said in the stories told
Of the tried and faithful love of the old.

Age is the harvest season of love,
As earth-life melts in the life above:
The fruitage time, in spirit and truth,
Of the seeds of love that are sown in youth:
Some never spring in the stony ground,
Some die ere the evening shades come round,
But bright and fresh from congenial mold
Grows the love that ripens to crown the old.

Ah, many a trial this love hath known;
The fiercest suns have upon it shone,
The rain's mad beat and the raging blast
Have o'er its fortunes a life-time passed;
It has thriven the better when thus assailed,
And ne'er from its hope and trust has failed—
Ne'er in devotedness turned cold,
But brighter glowed as the heart grew old.

'Tis not a love to last for a day,
A light to flash and vanish away,
To rave with a sonnet and melt in sighs,
And live in selfish unsacrifice—
To crave forever with tearful cheeks,
And die in possession of what it seeks;
By pure and exalted trusts controlled,
Is the love that sanctifies the old.

Then, gray-beards, heed not the mocking sneer
From supercilious lips you hear;
Yours is the love that has stood the test.
Add gilds your years like a smile from the west—
It sparkles and glows like the richest wine,
And it bears the brand of the love divine;—
There's a glory, more than the eye may behold,
In the endless love that bides with the old.

—*B. P. Shillaber.*

Mary's Recompense.

"I have come to ask your advice, Annie," said Mary Carter, entering her sister's small bedroom, "but first let me warm my frozen fingers, for the afternoon is fearfully cold."

She threw her snow-dusted cloak on the only vacant chair and tossed her black hat on the bed; she coiled up at Annie's feet in front of the meager register.

"Well darling, and what is the trouble now?" and the elder sister looked down at the fair young face and at the sweet eyes so wistful and sad.

The two girls were orphans, and were toiling in the respectable harness of—teaching. Theirs was only the oft-repeated story of New York life. The father had failed, and had not the strength to rally again; so the frail, gentle mother soon followed her husband to the rest where the weary are sleeping. A rich relative had educated the girls that they might be independent, and, therefore, now they were battling and struggling in the great city, whose God is Gold! Annie, the elder by two summers, was a gentle-eyed girl of twenty-two years; one of those calm, self-relying natures that rise in all the strength of the old martyrs when circumstances so require; a heroine born, that storms only strengthen, misfortunes make grand; with a pure, classic face—a face that men gaze on more in admiration and respect than passionate love; and she strove and suffered as resident English governess in one of the large, fashionable schools of the city, while the younger, the impulsive, sensitive Mary, was teaching Mrs. Vale's four children in a beautiful home on the avenue.

On Thursday Mrs. Vale had issued cards for a grand ball the following week, and to ask Annie's advice in reference to this ball the young girl had braved the driving November storm.

"And now, Annie, help me to decide, for although Mrs. Vale is exceedingly kind to me, even urging my presence on the plea of friendship, yet all that is soundly practical in my nature counsels me to come here, stay with you till 10, at which hour your 'retreat' is sounded, and then creep quietly back into my own little room, and read till sheer weariness sends me to bed."

"Would it not be better, darling, for you to please Mrs. Vale?"

"Better, Annie?" and her eyes flashed; "better to feel the pangs of a position to which I have not been born? True, Mrs. Vale is a considerate woman, and would shield me, if she could; but will her guests regard this protection? I know the women better! 'Who is that?' will some jeweled shoddy exclaim, and how can the question be answered? I am neither Mrs. Vale's relative nor guest, but—the governess of Mrs. Vale's children."

Her voice trembled, and her eyes were full of tears.

"No, Annie," she continued, "I have no place in society, and it is safer not to risk attack."

Annie felt the truth of her sister's logic, yet she knew that it was wiser for Mary to accept Mrs. Vale's invitation. No kind shelter awaited the orphans, for self-reliance was a hard necessity forced upon them; and it was braver to meet life's shares than to shrink, and shrinking lose a good home. The elder sister also felt a pardonable pride in the rare beauty before her, so she tried to soothe the sensitive spirit and wayward, haughty nature. And in truth Mary Carter was gifted with the "fatal gift," for if the mere accident of birth leaves its impress, she as thoroughly illustrated that birth as any of the patrician beauties of the old days of Rome. Light golden waves of hair that the poets love shaded her low Greek forehead, and beneath the proudly-arched brows shone dark, changeful, hazel eyes—eyes that gleam with passion or glance tenderly soft, as a cooing dove's, then a lithe, graceful, expressive figure, with the walk even characteristic, and you felt when you looked upon her that mere circumstances could not locate her, but that she belonged where she was born, among the daintiest of the land. A woman to be sheltered and cared for, not to struggle and suffer.

Annie's arguments prevailed, and on the night of the ball Mary Carter walked in the brilliant rooms with Mrs. Vale, and not even in that lovely gathering was one fairer than the young girl standing at Mrs. Vale's side.

Only a simple dress of tulle fell in a cloud-mist around her, and a wreath of lilies bound her shining hair. Excitement deepened the color in her cheeks, and her eyes were luminous with the light that only such eyes ever gave forth.

"My friend, Miss Carter." How Mary's heart beat as Mrs. Vale introduced her! The inherited pride was undiminished; and, although she felt that her position was honorable, yet she knew that society gave her no status.

But Helmsmuller's lovely music was sounding, and youth, with its keen relish of pleasure, cannot always feel the shackles of circumstances, so Mary forgot her nervous fears and enjoyed every moment till—well, it was near the close of the evening. The beautiful Faust lancers were echoing, and the third figure, so trying to a woman's grace, had begun. Mary Carter's vis-a-vis was a handsome, showy woman, flashing with diamonds, and in the intervals of the dance, was conversing with a tall distinguished gentleman, who stood carelessly leaning against a pedestal near by. With the eye of a connoisseur he swept the crowded rooms and rested on the slight figure opposite.

"Saving your fairist self, Mrs. Edelbert, I would determine the young lady facing us the most beautiful in the room. Watch her movements and that graceful courtesy; in that simple inclination is the test of the breeding, which her exquisite features substantiate."

"You are for once mistaken, Mr. Hardinge; for that is only Mrs. Vale's governess."

It was the second forward, the forward when the ladies courtesy, and just when the music sways for the low inclination; and when the cold hard words fell distinctly, "Only Mrs. Vale's governess." For a single instant the young girl faltered—for one second as she afterwards said, her eyes were blind, her brain reeled. But, true to its old source, the haughty blood rose to her rescue, and with a lady's flash, a fleeting look of ineffable scorn, she met Mrs. Edelbert's gaze, till the woman quailed; then, as a queen, Mary Carter rose and glided back to her partner.

And John Hardinge saw it all, and felt for the young fawn, so cruelly wounded, shrinking, quivering, yet with all the spirit of the rampant lion.

The man felt his heart beat quickly, and his pulses thrilled at the insult thus ruthlessly given; so he coldly looked at Mrs. Edelbert and walked away.

It was the Sunday after the party, just at the soft hour when the twilight shadows the day, and on the warm curtains the fire gleams danced in weird fitfulness; the gas was not yet lit, and through the dimness floated the wailing notes of a sweet contralto. What a world of tender pathos in the tones as they appealed:

> Flee as a bird to the mountain,
> Ye who are weary of sin.

And she sang on, with a low sob in the voice, as though her heart echoed every note of the music. Her face was very pale, and her eyes rested on Raphael's Madonna. The children were fond of Mary Carter, and they were kneeling and leaning near her, perfectly calmed by the sweet, sad strain, when noiselessly the heavy curtains parted and Mrs. Vale walked in with her brother, John Hardinge.

"Mary, here is my brother, John Hardinge, of whom you have heard me speak so often; and this, John, is my friend, Miss Carter."

The poor child's thoughts were wandering to Thursday evening, when she had rested upon those very words with such crushing results; therefore her bow was very cold, and her voice trembled, as a few minutes after she rose, and, excusing herself, retired from the music-room.

The arrow was quivering still, and the poison was absorbing the heart's vitality—its trust in human nature.

A shade of disappointment clouded John Hardinge's face as the last fold of her trailing black dress disappeared from the heavy curtain, and then he told Mrs. Vale of what had happened.

She was a kind, gentle lady, and her heart sorrowed for the desolate young orphan.

Mr. Hardinge often strolled in at the "children's hour," and the little ones were really as lovely as the celebrated group known as Longfellow's children.

Always in the music-room he found Mary; for never since the night of the ball had she appeared in the parlor. Society had only stamped the impress which her own heart had warned her of, and she felt that as a governess she was unrecognizable. And so the buoyant, haughty spirit forced itself into the shackles, and the young heart fed upon its life for food.

But John Hardinge was no longer a young man; therefore he was not easily daunted, nor was he a neophyte to be discouraged by a girl's coldness. The heart that was unimpressed by the suns of 40 summers at last felt the trembling of germination, and the realization came with untold strength and power; so the strong man yearned to fold within his protecting care the delicate blossom so tossed by life's storm.

Proud and shrinking, she seldom allowed herself to be talked to; but music was her greatest passion, and she quite forgot her life and position when Mr. Hardinge's pleasant visits came to brighten her winter days.

He was a cultivated, courtly gentleman, whose wealth made him sought after in the great marriage market; and mammas were especially suave and daughters very docile when Mr. Hardinge vouchsafed attention. But men in society seldom love in society; they weary of rote and routine, and tire of reproduction from the one unvarying and unvaried type—a pretty, expensive doll. Therefore they are more often attracted by the species *sui generis*, afforded without a grand whirl; and so the marriages of such men are disappointing and startling to the expectant battalions.

Madge was the youngest and fairest of the Vale household; a winsome little fairy of six summers; but fever flushed her soft cheeks, and her blue eyes were bright with that dangerous light which makes the heart of her mother throb hard within her bosom, for she feels instinctively that the reaper is near.

Eight days and nights Mary Carter tended the child, for the faint voice always sounded her name and the little arms ever sought her breast to nestle on.

But the fiat had gone forth, and Mrs. Vale saw the little one pass from her; saw the violet eyes close on Mary's bosom; heard the baby voice plead for Mary's hymn, and while the low music sounded Mrs. Vale fainted by her dead child.

Then the beautiful strength of the young girl developed, and her tender words of comfort called back the mother's faith. A woman's religion is never more lovely than when the clouds and shadows darken; then she clings closer to the cross, her "Rock of Ages," and her words of trust and comfort seem almost inspiration. And Mr. Hardinge watched the slight figure as it glided to and fro on its errands of love in the house of sorrow.

* * * * * * * * *

The little one had been laid to rest beneath one of the willows of the Trinity cemetery, and the household seemed under a spell—the weight of the first great grief. Mrs. Vale was in her darkened chamber, the children in the nursery, and Mary sat in the low bay window of the library. Her face was very pale, for long watching had exhausted her. Mr. Vale had told her in the morning of his intention of sailing for Europe next month, and had placed a check for a handsome amount in her hands.

This Mary at once returned. There was a flush of the old pride warming her cheek when she wrote the simple lines inclosing the check of Mr. Vale.

"I should be false to my name did I receive pay for any service it has only been my pleasure to render. The salary agreed upon is only one-fourth of the sum returned. This I shall be glad to receive. MARY CARTER."

And now she was thinking of her future, she felt that she must find another home, though no one could shrink more from intercourse with strangers. There were many Mrs. Edelberts in the great world, and a governess was only considered a person to control and instruct unmanageable children; not a woman, with the heart and soul of a woman, but a piece of household furniture, to occupy its own special place, and nothing more.

And so the rough tide surged on, and two burning tears blinded her eyes as these hard realities formed the picture of her life to come.

Her intercourse with Mrs. Vale had always been pleasant, and Mr. Hardinge's visits had become more of an anticipation than she cared to acknowledge. Now fate would drift her away and her very name would be forgotten.

Why had she met these kind people? and why Mr. Hardinge—

"Mary," sounded a well-known voice, and she looked up to meet the very face she had been dreaming of. "I have come to tell you a little story. Have you time to give me a half-hour's patience?"

She could not speak then, for her heart was full—full of sorrow that knows no utterance. He drew up one of the old gothic chairs close to her low seat, and commenced:

"A very long time ago, Mary, my father died and left my mother with two little children and not a dollar to support them. We were comparatively strangers in New York, and I was then a boy, only 14, and still attending school.

"I never shall forget the dreary November afternoon on which my father's corpse was borne from the house. My mother's grief maddened me, and on my knees beside her I promised to take care of her.

"I wandered out the next day with a boy's determination, but with a boy's faint heart. In 20 stores I offered myself and was 20 times refused. Work was what I wanted—labor, honest labor, and money for my toil. At last, footsore and pinched with cold, I nerved myself for my last attempt, and walked into the office of one of our merchant princes.

"There was a gentleman writing at one of the desks who was pointed out to me as the only partner in. He was just finishing a letter, and looked up as I paused before him.

"My appearance seemed to please him, for I was neatly dressed, and he spoke with some surprise as he answered my request.

"'You have an honest face, my lad,' he said in conclusion, 'and I will see what can be done for you.'

"The words were few and simple, but I afterward learned that he never promised without fulfillment.

"I saw him the next day and he gave me employment—not only employment, but he saw my mother, and for years, through his kindness, we were saved from want.

"Then a great crash came. My kind friend died, and we heard that his family had left New York.

"Fortune smiled upon me and I became rich; but one sorrow weighed upon my heart; the family of my benefactor had escaped me. What if they were now suffering?

"I came back to New York last autumn, and as soon as I saw you I felt the haunting resemblance to a face that had somewhere crossed me. Your name at once struck the old chord, and I found to my surprise that you were the daughter of Thomas Carter.

"And so, darling, I wish you to help me lighten the debt I owe your father.

"I have to-day purchased a lovely home which I wish your taste to furnish; and if you will condescend to be an old man's pet, I will promise;" he added, smiling, "to submit to the rule of a very wayward woman."

She could not answer him then, for her tears fell rapidly, and the first words that pride urged were: "I am too poor to be a rich man's wife."

But he kissed the tears away and told her to consult Annie about it all. And so when the calm, practical sister heard the story, she soothed the little one as on the day preceding the ball, and the quiet blue eyes looked up in Hardinge's face as she replied:

"The bread cast upon the waters has returned after many days."

And the house in——street received its beautiful mistress, and Annie Carter loved to watch her darling dispensing the noble charities which her husband's wealth allowed.

"You are right, Mary," he would always say, "for you have taught me how precious is the recompense that returns."

Brother Gardner on Drunkenness.

"Am Brudder Abraham Scott in de hall dis evenin'?" inquired the president, as he looked down the aisles.

"Yes sah;" answered a voice from the northwest corner.

"Den please step dis way."

Brother Scott scuffed forward, his head down, and his countenance betraying about seventeen different emotions, and, as he reached the mark, the president continued:

"Brudder Scott, in gwine ober to de old man Johnson's las' nite, to borrow a hunk o' butter for breakfast, I descovered some one lyin' on de sidewalk. My first thought was to yell murder. My next thought was to smell of his breaf. Dat settled de case at once. It wasn't a murder, but a case of dead drunk. I turned de subjeck ober to get a good look at his face, and who d'ye spose it was?"

Brother Scott gazed straight at a bust of Venus, and had nothing to say.

"It was Brudder Scott," whispered the President. Although two of his children am bar'fut, his wife needs cloze, an' he hasn't a dozen taters in de house, he has taken good money from his pocket an' paid it out fur bad whisky. He wasn't a man when I found him. He was a hog—a great big hog! I could smell his breaf six feet away, an' it would have made a dog sick. He had lost his hat, rolled in de slush, an' den fallen into a stuporish sleep. I got help an' toted him home, an' to-night he comes to dis meetin' to have a wote among men who work hard, respect demselves an' lib sober lives."

"Ize sorry, sah."

"No doubt of it, but dat am no defense. A fool excites pity, kase God made him dat way. A lunatic draws sympathy, kase he has met wid misfortune. A drunkard arouses nuffin' but contempt. He deliberately goes at it to make a brute of hisself. You hab heard me speak of dis matter on seberal previous occasions, an' you know how de majority ob dis club feels on de subjeck. In de las' two months you hab been foun' drunk fo' times."

"Yes sah; but I'll quit."

"I hope you will, but I doubt it. You had ebery thing to lose gettin' drunk de fust time. You have lost character, rispect, money and standin,' and dars leetle hope dat you will see any reason to quit. We kin guard agin thieves by lockin' up our money. We kin put de murderer in prison an' have him out'er de way. We kin expose de liar and kiver him wid confusion. But de drunkard—de hog—de beast—who kin trust him? Who kin believe in him? Who wants his society? Who am not degraded by walking beside him? Brudder Scott, you am a bounced man! Your name will be crossed from our rolls; you will be refused admission heah, an' we shall forgit dat you war eber numbered wid us. Let us now attack de reg'lar order ob business."—*Detroit Free Press.*

Treating a Cow Like a Lady.

A man came into the office on Tuesday with a black eye, a strip of court plaster on his cheek, one arm in a sling, and as he leaned on a crutch and wiped the perspiration away from around a lump on his forehead with a red cotton handkerchief, he asked if the editor was in. Being answered in the affirmative, he said:

"Well, I want to stop my paper," and he sat down on the side of a chair as though it might hurt. "Scratch my name right off. You are responsible for my condition." "Can it be possible?" we inquired. "Yes," said he. "I am a farmer and keep cows. I recently read an article in your paper about a dairyman's convention, where one of the mottoes over the door was, 'Treat your cow as you would a lady,' and the article said it was contended by our best dairymen that a cow treated in a polite, gentlemanly manner, as though she was a companion, would give twice as much milk. The plan seemed feasible to me. I had been a hard man with my stock, and thought maybe that was one reason why my cows always dried up when butter was forty cents a pound, and gave plenty of milk when butter was fifteen cents a pound. I decided to adopt your plan, and treat a cow as I would a lady. I had a brindle cow that never had been very much mashed on me, and I decided to commence on her, and the next morning after I read your devilish paper I put on my Sunday suit and a white plug hat that I bought the year Greeley ran for President, and went to the barn to milk. I noticed the old cow seemed to be bashful and frightened, but, taking off my hat and bowing politely, I said: "Madame, excuse the seeming impropriety of the request, but will you do me the favor to hoist?" At the same time I tapped her gently on the flank with my plug hat, and putting the tin pail on the floor under her, I sat down on the milking stool." "Did she hoist?" said we, rather anxious to know how the advice of President Smith, of Sheboygan, the great dairyman, had worked. "Did she hoist? Well, look at me and see if you think she hoisted. That cow raised right up and kicked me with all four feet, switched me with her tail and hooked me with both horns all at once, and when I got up out of the bedding in the stall, and dug my hat out of the manger, and the milking stool out from under me and began to maul that cow, I forgot all about the treatment of horned cattle. Why she fairly galloped over me, and I never want to read your old paper again." We tried to explain to him that the advice did not apply to brindle cows at all, but he hobbled out the maddest man that ever asked a cow to hoist in diplomatic language.—*Chicago Tribune.*

How Shall We Dress Our Children?

[Written for the RURAL PRESS by JEWELL.]

In the first place warmly, with the clothing equally distributed over the entire body and extremities. To do this, one continuous garment of warm wool flannel, in this climate the year round, is not too warm; reaching to the ankle under soft woollen stockings, for boys and girls both. Over this suit cotton may be worn, if a city life demands beauty of appearance, with comfort and health. Why will the mothers of the land blindly remain ignorant of the fact that thin little children need to be clothed as warmly as their strong, robust fathers do, who, clad in woollen and cloth the year round, appear none too warm, while the poor little ones go shivering to school with thin cotton underwear, fancy boots and a shawl or coat that would be called fit only for summer wear by the father. Heat is life; cold, death. So dress the children warmly, oh mothers, and then let them out to get all the fresh air they crave. Let the clothes be loose, giving plenty of room to grow, breathe and exercise in. Have no skirts to hang on the little girl's hips, thereby weakening and displacing internal organs, predisposing in mature life the same to disease and suffering. One loose, long waist with two rows of buttons will keep both drawers and skirts in place, as well as stocking straps. With sleeves to this waist it is comfortable and warm, and is easily made and kept in order, which every mother should well consider in the clothing of her family.

Warmth, health and comfort, then, should be our design in clothing our little ones if we expect to make them robust men and women. And remember our girls need as warm dressing as the boys, and as much fresh air and exercise, if we want them to be as healthy and happy and able to endure the trials of after life.

Deer Ridge Farm, Santa Cruz mountains.

FALSE EYELASHES.—Labouchere says in *Truth*: "The Parisians have found out how to make false eyelashes. I do not speak of the vulgar and well-known trick of darkening the rim round the eye with all kinds of dirty compositions, or the more artistic plan of doing so to the inside of the lid. No, they actually draw a fine needle, threaded with dark hair, through the skin of the eyelid, forming long loops, and after the process is over—I am told it is a painless one—a splendid dark fringe veils the coquette's eyes."

POWER in its quality and degree is the measure of manhood. Scholarship, save by accident, is never the measure of a man's power.—*Holland.*

YOUNG FOLKS' COLUMN.

Our Puzzle Box.

Numerical Enigma.

My 5, 6, 2, 4 is a kind of fuel.
My 12, 1 is an interjection.
My 15 is a consonant.
My 11, 7, 4 is the opposite of right.
My 9, 12, 3, 7 is a coat of steel.
My 13, 19, 9 is a kind of meat.
My 21, 14, 9, 16 is the same as moist.
My 18, 14, 9, 10 is a young sheep.
My 17, 6, 8 is a personal pronoun.
My 20, 6, 8, 20 is a part of a speech.
My whole consists of 21 letters and is the first line of a familiar song.

J. L. C., Calistoga, Cal.

Letter Changes.

1. A morass: change my initial, I am a domestic animal; change again, I am mist; again, I am a filthy animal; again, I am a heavy piece of unhewed wood.
2. The noise of a donkey: change my initial, I am a cart; again, I am a battle; again, I am a color; again, I am to supplicate; again, I am a salver for serving dishes.

LEO P.

Charade.

Upon a sunny morn,
Adown the rose and thorn,
My first reversed is seen
In diamonds' sparkling sheen.

My second serves to guard
The greedy miser's hoard,
The convict in his dreary cell,
And all the places where we dwell.

My whole has power to bless,
And give true happiness;
And yet I'm oft abused
By subjects when misused.

NED.

Syncopations.

1. Syncopate an animal and leave an obstruction to navigation.
2. Syncopate extent of duration and leave to form into a knot.
3. Syncopate locality or position and leave a measured step.
4. Syncopate a nickname and leave a conjunction.

MADELAINE.

Anagrams.

(A Collection of Plants.)

1. A nut pie.
2. Here's a seat.
3. Love it.
4. All on a bed.
5. I can order.
6. An idle nod.
7. Mean one.

AUNT SARAH.

Answers to Last Puzzles.

NUMERICAL ENIGMA.—"Be sure you are right, then go ahead."

DECAPITATIONS. — 1. Bone, one. 2. Larch, arch. 3. Lark, ark. 4 Mode, ode. 5. Chub, hub.

BIRDS.—1. Blue-jay (j). 2. Gold-robin (robbing). 3. Part-ridge. 4. Whip-poor-will. 5. Bob-o-link. 6. Lark. 7. Linnet (Lynn-net). 8. Nonpareil (non-pa-reel). 9. Spar-row.

WORD SQUARE.—

NOISE
ORRIS
IRONS
SINCE
ESSEX

PROBLEM.—Twenty miles square.

"Crafty" and "Simple."

They were about the same size and looked much alike. They were great friends. One was a wise old rat, and the other was a young rat who thought himself wise.

The wise old rat we will call Crafty. His home was in Farmer Rural's cellar: that is to say, the front door is opened into the cellar; but there was a back-door in the garden, and there were passage-ways under ground, leading to the corn-barn and the drain.

Crafty had studied the ways of the human race for many years. In his view man was created for the benefit of rats. He had known men who were almost as sly as rats, but on the whole he looked upon them as inferior beings.

Simple, who lived close by, had also a great contempt for men and women. He often boasted that he had got his board and lodging all at their expense. But he did not know half as much as he thought he did; and many a time he had been kept from getting into a scrape by his good friend Crafty.

One night about 12 o'clock Crafty and Simple started out together to see what they could find. Having poked into every corner of Father Rural's cellar, without getting anything better than raw potatoes, they made their way up stairs.

Just at the head of the stairs they came upon a sort of wire safe in which there was a most tempting bit of cheese. The door of the safe was open.

"Here's a feast," said Simple, and he was about to dart into the safe.

"Stop, my young friend," said Crafty, sitting bolt upright on his haunches. "That cheese has been put there on purpose for us."

"Well, then, why shouldn't we take it?" said Simple.

"Take my advice," said Crafty, "and let the cheese alone. Many a fine young rat has been cut off in the flower of his youth by snatching at the first thing that happened to be put in his way. That safe is what men call a trap, and it is a very unsafe thing for you to meddle with."

A few nights after the two friends started out once more, and in the middle of the cellar they found a nice barrel of meal. Simple was on the point of jumping right into it; but old Crafty stopped him again.

"Don't you know better than that, you greenhorn," said he. "Never jump into a barrel in that way. Look here." And, crawling on the rim of the barrel, he flapped his long tail into the meal. Splash, splash! Right under the meal there was water.

"Ho, ho, Farmer Rural!" said Crafty, "that's your game, is it? You can keep this meal for your own eating."

But the next time that the two rats went out together, poor Simple did not come off so well. In spite of his friend's advice, he went after some bread-crumbs which were scattered on a harmless wooden box.

It was a trap, of course. Simple was caught, and Crafty had to go back to his hole alone.

GOOD HEALTH.

Farmer Poisoning.

EDITORS. PRESS:—Apropos of the notorious Lamson trial, experts stated it to be highly probable that hundreds of cases of drug-poisoning occur annually, which are never suspected or detected. For one such case of unsuspected drug-poisoning, your correspondent is bold to say there are at least ten cases of unsuspected poisoning by air or water! It is about time in the world's history that we began to call things by their right names. The day has gone by when it was considered pious to say that a man who died the victim of typhoid fever died of the "visitation of God." It is now known that such an one dies of the visitation of the devil of ignorant laziness or beastly filth.

All of us "have erred and gone astray like lost sheep," as we say on Sundays, in this matter. And though a general confession is very useful and pretty, it by no means takes the place of action. The devil of beastly filth or lazy ignorance is *not* exorcised by any "Avaunt thee, Satan!" Chin-music, lay or priestly, must be supplanted by action of brain and body. The man whose well is contiguous to his hog wallow and cow corral has not far to seek for the cause of his own and his family's debility. The man whose greed leads him in the first place to overstock his ranch, so that at the first pinch his stock litter the ground with their putrid carcasses, and who then is too miserly to burn or bury them, need hardly expect less than to have his meanness cursed by his neighbors—nay, by his own family—for thus converting God's free, life-giving gift into a devilish, subtle poison. He may be at present beyond the grasp of the law; but, if there be any scorching heat in public opinion, on such an one should its rays be concentrated.

Let it be understood that any man, woman or child dying of typhoid fever, and allied zymotic complaints, dies as literally *poisoned* as though poisoned by deadly drugs. Let it be understood that typhoid germs are bred of cesspools and allied unnecessary and criminal filth, and let our laws be so amended that those who harbor the filthy devil aforesaid shall receive the due reward of their deeds.

EDWARD BERWICK.

Carmel Valley, Monterey, March, 26, 1881.

CUTTING NEW TEETH AT NINETY-FIVE.—Elias de Puy is 95 years of age and still able to walk eight miles a day over rough hills. He lives near Lackawack, in Ulster county, N. Y., in a country sparsely settled, on rough farming lands. He is in excellent health, yet not a follower of temperance principles, for he believed in the old Dutch custom of taking gin "straight," and has chewed all his life the rankest and strongest tobacco. He has had five wives and eight children. His eldest son is 70 and gray-haired, while his youngest son was born after he was 85 years old. He was 60 years of age when he married his last wife, while she was 19. A remarkable thing about Mr. de Puy is that he is cutting a new set of teeth. Nine new teeth have already made their appearance. His eyesight is excellent, and he reads almost continually. He is the most remarkably preserved man in the State.

REMARKABLE BRAIN WOUND.—A young man named Leonard E. Spencer, of North Fenton, Broome county, N. Y., was wounded in the head October 8, 1881, by the bursting of his gun. His physicians were able to insert a finger its full length into the wound, but were unable to find the fragment of the gun which penetrated the brain. Partial recovery took place. He was at work February 20, when unfavorable symptoms set in, and he died the next day. At the autopsy the cylinder and tube of the gun were found embedded in the brain, near the fore part of the skull. The cylinder and tube were connected in one piece and weighed about three quarters of an ounce. The patient had survived the injury four and a half months.

SEA BATHING GOOD FOR THE EYES.—Dr. Amat says that sea bathing "has proved of great benefit in many cases of disease of the eye. The improvement appears to be due to two causes: 1. The influence which such a course has upon the general health, by curing anæmia and elevating the tone of the system, since sea bathing is in the highest degree restorative. 2. Sea water and occasionally, also, the atmosphere of the sea has a local irritant action which should be watched, since it is most serviceable when there is a chronic, torpid and indolent inflammation, while it is exceedingly dangerous when the inflammation is of the acute kind."

DOMESTIC ECONOMY.

Soups.

Gumbo and Okra.—Take one quart of gumbo, one-half chicken, and half-pound of ham. Put the ham and chicken into a pot and let them fry brown; then put in the gumbo and let it wilt right well—being very careful that it does not burn. Then add three quarts of water, two or three good-sized tomatoes, salt and pepper to taste. Let it boil six hours. When ready to send to the table, have boiled rice or corn meal mush to serve with it.

Potato.—Boil and mash as many potatoes as will make one quart; stir into this one-half pound of butter; pepper and salt to taste. Have in a stew-pan or pot, on the stove, five pints of sweet new milk. When the milk is boiling hot, dip some of it out and thin the potatoes with it, stirring all together until well mixed. Replace on the stove, and drop into it some dumplings made thus: One pint of sifted flour, not quite a half teacupful of lard. Mix the lard well, and add a teaspoonful of salt, then enough water to make a dough as stiff as for biscuits, roll thin, cut into small pieces, and drop into the soup, letting all cook thirty minutes.

Savory.—One turnip, quarter of a small cabbage, two or three sprigs each of parsley and thyme, one small onion; bones cut from roast beef, a ham bone, or small slice of ham. Chop the vegetables fine, cover with cold water, and bring to boiling point; drain off this water, and add two quarts of cold; put in the beef bones and ham, and add a quarter of a teaspoonful of pepper; if no ham is used, an even tablespoonful of salt. Stew slowly for not less than two hours. Add a cupful each of canned tomatoes, peas or beans. Strain the hot liquor, in which the vegetables have been boiled, into this. Pick out all bits of meat and bone from the strainer, add the vegetables or not, as liked, to the soup, and thicken with a tablespoonful of cornstarch mixed in a little cold water till thin as milk. Simmer for 10 minutes after adding this, and serve.—*Prairie Farmer.*

A Good Cup of Coffee.

A prominent New York merchant, F. B. Thurber, has just written a book entitled "Coffee from Plantation to Cup," published by the *American Grocer* publishing company, New York. It treats exhaustively of all branches of coffee production and commerce, and has a chapter about preparing coffee for the table. Mr. Thurber gives many formulas, French, English, Turkish, Brazilian, etc., but we have only room for his own, which is as follows: "Grind moderately fine a large cup or bowl of coffee; break into it one egg with shell; mix well, adding enough cold water to thoroughly wet the grounds; upon this pour one pint of boiling water; let it boil slowly for ten or fifteen minutes, according to the variety of the coffee used and the fineness to which it is ground. Let it stand three minutes to settle, then pour through a wire sieve into a warm coffee pot; this will make enough for four persons. At table first put the sugar into the cup, then fill half full of boiling milk, add your coffee, and you have a delicious beverage that will be a revelation to many poor mortals who have an indistinct remembrance of, and an intense longing for, an ideal cup of coffee. If cream can be procured, so much the better, and in that case boiling water can be added, either in the pot or cup, to make up for the space occupied by the milk as above, or condensed milk will be found a good substitute for cream. But whatever formula you use, the essentials required to secure a cup of coffee suited to any table are: First, the very best quality of freshly roasted and ground coffee. Second, thoroughly clean utensils. Third, enough coffee, and prepared with care."

FRUIT CAKE.—One coffee cup of sugar, three-quarters of a cup of butter, two cups of flour, the whites of five eggs, three teaspoonfuls of baking powder; flavor with vanilla. Take from this one large tablespoonful; bake the rest in two cakes as for jelly cake. To this tablespoonful add a half a cup each of chopped raisins, chopped citron, of flour and of molasses; two teaspoonfuls of cinnamon, half a teaspoonful of cloves, and one wineglass of brandy. Bake this in one layer. Put the cake together with soft frosting, putting the fruit layer in the middle. The top may be frosted or not, as you please.

A RICH TOMATO SOUP.—Take eight good-sized tomatoes, cut them in half, put them into a sauce-pan with a bunch of sweet herbs and an onion stuck full of cloves, some allspice, whole pepper and salt. Cook them slowly until quite soft, then strain through a strainer or hair sieve until the skins and onions and herbs only are left behind. Have a quart of plain stock boiling hot. Stir the tomatoes into it, add the yelks of two eggs beaten up in a little cold water. Serve with sippets of toast or fried bread.

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SAN FRANCISCO:
Saturday, April 8, 1882.

TABLE OF CONTENTS.

EDITORIALS.—San Gabriel Misssion; The Citrus Fair; Borax Injection for Meat Preservation, 257. Wheat Cleaners, 261. The Week; Gems from the Fair, Death of Owen O'Neil, 264.
ILLUSTRATIONS.—San Gabriel Mission, 257 Carter's New Wheat Cleaner, 261. Washington or Riverside Navel Orange; The Premium Pyramid of Oranges, 264.
CORRESPONDENCE.—Snow Perils of the Upper Sierras; The Chance in California, 258.
HORTICULTURE.—About Figs, 258.
THE BOTANIST.—Hints to Botanical Collectors, 259.
FLORICULTURE.—Hardy Flowering Shrubs, 259.
AGRICULTURAL NOTES, from the various counties of California, 260-61.
PATRONS OF HUSBANDRY.—National Grange Citrus Fair; The Grange; Floral Tribute, 260.
HOME CIRCLE.—The Love of the Old (poetry), Mary's Recompense; Brother Gardner on Drunkenness; 262. Treating a Cow Like a Lady; How Shall We Dress Our Children; False Eyelashes, 263.
YOUNG FOLKS' COLUMN.—Our Puzzle Box; "Crafty" and "Simple," 263.
GOOD HEALTH.—Farmer Poisoning; Cutting New Teeth at Ninety-five; Remarkable Brain Wound; Sea Bathing Good for the Eyes, 263.
DOMESTIC ECONOMY.—Soups; A Good Cup of Coffee; Fruit Cake; A Rich Tomato Soup, 263.
ENTOMOLOGICAL.—The Apple Geometer, Disinfection of Fruit Boxes; Soot for Slugs, 264.
MISCELLANEOUS.—The Riverside Citrus Fair, 265, 266 and 268. Cost of an Orchard in Riverside; The King Orange, 268. Imported vs. Riverside Oranges; Riverside Progress, 270.

Business Announcements.

Agricultural Implements—Baker & Hamilton, S. F.
Hay Presses—Jackson & Truman, S. F.
Orange Trees—Los Angeles Co. Bank, Los Angeles, Cal.
Agricultural Implements—Frank Bros., S. F.
Cosmopolitan Hotel—Hammel & Denker, Los Angeles.
Agricultural Machinery—Marcus C. Hawley & Co., S. F.
Windmills—Woodin & Little, S. F.
Carriages, Wagons, Etc.—A. W. Sanborn & Co., S. F.
Bermuda Grass Seed—J. M. Thornburn & Co., New York.
Sewing Machines—Mark Sheldon, S. F.
Standard Poultry—O. J. Albee, Santa Clara, Cal.
Trees—Eames & Levering's Tree Depot, Los Angeles, Cal.
Alden Evaporator—Alden Fruit Co., S. F
Clark's Hay Elevator Carrier—G. T. Brown, Stockton, Cal.

The Week.

Our paper this week gives an intimation of the infinite variety of California. While one page contains an account of snow-falls and avalanches, another is filled with notes of ripe fruits and fragrant flowers. Just at the time that the exhibits were being heaped upon the tables at Riverside, the snow was crushing the sheds, stopping the trains and burying the dwellings of the people on the sides of the Sierra Nevadas. And yet it was all California. By a day's journey the San Franciscan can be buried in snow or drowned in orange juice, as he sees fit. As the German immigrant said: *Mein gott; vot a country; vot a peeples.*

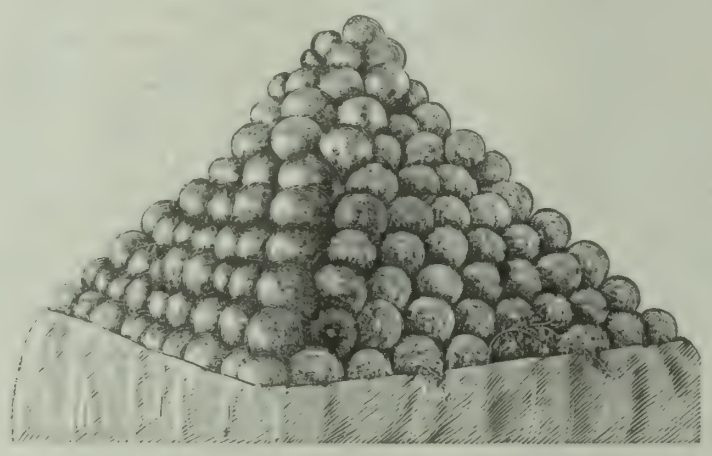
And the President has vetoed the Chinese bill. Eastern ignorance on this important subject has triumphed.

COLTON.—This town is decidedly improving. Several brick stores are going up. The California Southern railroad from San Diego will soon be completed to its junction here with the Southern Pacific. Mrs. Pine, who has well kept the Colton house for many years, has sold out to a new proprietor. The hotel is well known from San Francisco to Arizona for its superior size and accommodations.

Gems from the Fair.

Our engravings on this page may give unfortunate absentees the satisfaction of a key-hole peep at the glorious fruit which was shown at the Riverside fair. The pyramid of oranges becomes but a tame group of globules in the picture, but in reality it was a glowing mound of golden spheres—for the fruit was the Washington or Riverside Navel, whose beautiful skin and rich color no one who has seen this variety *en masse* can ever forget. The picture shows the first premium pyramid of S. R. Magee, of Riverside, in the foreground. The engraving is made from a photograph by Turner, of Riverside, who has prepared a collection of stereoscopic views of the fair, which can be ordered by mail.

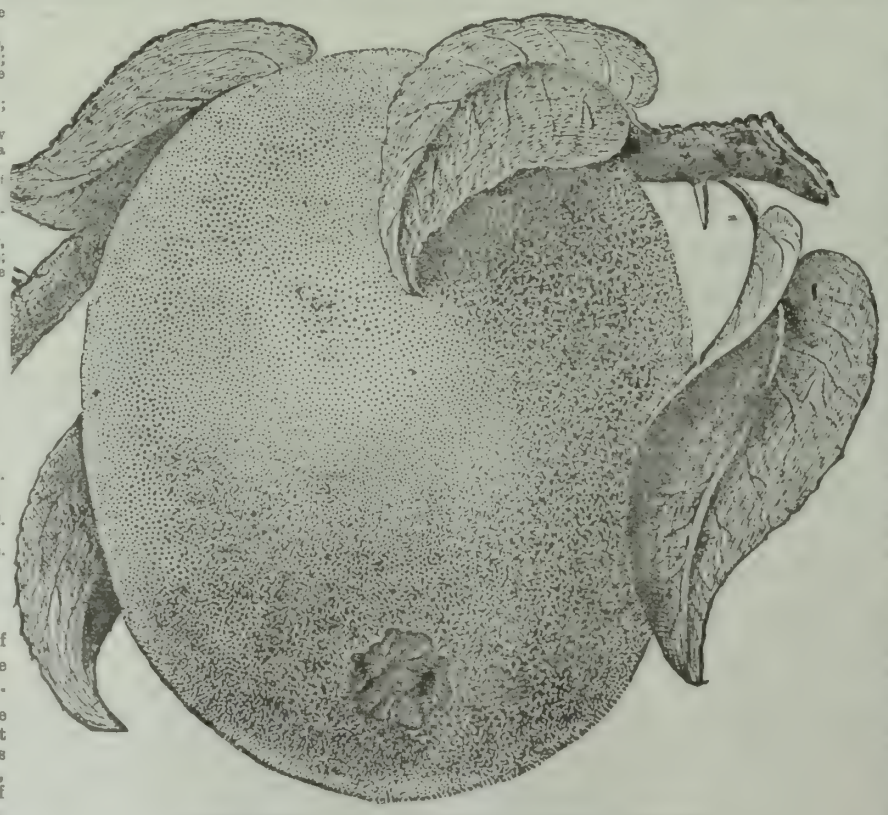
Another engraving on this page shows the



THE PREMIUM PYRAMID OF ORANGES.

Washington Navel orange in all its magnificence, save color. The engraving was prepared for the *American Garden*, published by B. K. Bliss & Sons, of New York, from specimens sent from Riverside. The picture shows the fruit rather too much elongated for its own beauty. It is also above the average size, although well within the dimensions of the largest specimens. The Washington Navel is the crowned king of California oranges. How long shall its reign be? Who will bring out a better? Royal in color, refined in surface, tender in flesh, rich in flavor, and a natural reservoir of juice. Seedless—Supreme! *Vive le roi!*

AN INSTANCE OF SUCCESS IN CO OPERATION.—The success of the Riverside colony has been



WASHINGTON OR RIVERSIDE NAVEL ORANGE.

obtained by steadfast co-operation, such as has never before been witnessed in America. The continuation of its strong and vigorous co-operation will enable it to reach the highest fame that seems destined for it—that of firmly maintaining and making thoroughly known throughout the world the superiority of its products, defeating the designs of counterfeiters; training a taste for the best among the best-paying communities; transporting and marketing to the best advantage of producers and consumers. Co-operative effort for these ends will result, perhaps, in a still more steadfast, persistent unity, to be rewarded still more liberally.

JAMES GORDON BENNETT has given $10,000 to the Actors' Fund.

Death of Owen O'Neil.

We announce with deep grief the sudden death of Owen O'Neil, who was for several years proof-reader for Dewey & Co's publications, and for two years has edited the *Pacific States Watchman*. Mr. O'Neil's death was strangely sudden. He was in his usual good health on Monday morning. After taking a warm salt-water bath at North Beach, he went under the cold shower and was suddenly struck down. He retained consciousness only long enough to tell his residence, where he was immediately conveyed. He remained unconscious for several hours and then died quietly. Deceased was well known among the fraternal societies, and was a member of Olympic Lodge, A. O. U. W., and Bohemian Council of the American Legion of Honor. Among his fellow workers Mr. O'Neil was universally liked and respected as an energetic, even-tempered and industrious young man. He was most earnestly devoted to his work, and had a bright future as an honest and conscientious journalistic worker. His loss will be deeply felt in this office.

Mr. O'Neil's funeral was held under the auspices of the societies of which he was a member, on Wednesday afternoon, and was attended by the employes of Dewey & Co. Floral offerings were numerous and beautiful. Mr. O'Neil leaves a wife and two bright little boys which were the delight of their father's heart. His memory will be long cherished.

PRECIPITATING WHEAT.—On passing through the San Joaquin valley lately, great activity was noticeable along the railroad in the loading of wheat from the warehouses, the late rains having had a "facilitating" effect on the old crop evidently.

PICKLED LIMES.—A new product which attracted much attention at the Riverside fair was the pickled limes. Perhaps Mr. Rudisill will give us good recipes for pickling, that all who have the trees in bearing may test their value.

LADY EXHIBITORS.—Quite a feature of the Riverside fair was the number of lady exhibitors and the excellence of their exhibits.

ENTOMOLOGICAL.

The Apple Geometer.

EDITORS PRESS:—This apple-tree "pest" has made its appearance this year in March. It is a measuring worm, traveling by spanning its length. At this time the worm is about the sixteenth of an inch long, and so small as scarcely to appear to the naked eye, yet perfect in its structure, with all the peculiarities it has when fully grown. Last year they arrived at maturity about the end of April.

When fully grown they are an inch and a half long. They differ from other caterpillars in their habits. Each one lives by himself, has no tent, but each has a spider-web arrangement by which he swings down to the ground when the limb of the tree is jarred.

Now is the time to kill this worst enemy of the apple tree. But how to kill it is the question. I have been experimenting; one mode I have tried is to spray the tree with a solution of potash—six pounds to 100 gallons of water. A stronger solution will injure the leaf and blossom. Another mode is to throw well-slacked lime into the tops of the trees when wet with dew. This lime, being very dry, cleaves to the body of the worm and eats it up. It appears to do no injury to the leaf or bloom. The alkali diet is not healthy for the young worm.

If these measures do not succeed, then I shall put straw under the trees, jar the limbs, until they swing down, when a little fire will do the work.

Other orchards here are infested with these worms, and all would do well to examine their apple trees with an eye-glass. The egg seems to be deposited in the bud, and when the leaf appears the eggs are hatched. I have watched these for six days; their growth is slow but sure. If any one knows a remedy, let him publish it.—W. W. BRIER, Centerville, Cal.

In addition to the foregoing interesting remarks, we take the following from the *Record-Union*, to show what Mr. De Long is doing with his tent caterpillar eggs: During the last two months a gang of men have been employed picking the rings of eggs, deposited by the moths last fall, off the trees. Mr. De Long forwarded to Matthew Cooke a package containing one-fourth of the eggs collected to the 18th instant; they weigh 35 ounces avoirdupois, and cost to gather $54. Probably about three pounds more will be gathered. Mr. Cooke has the specimens sent him in six sealed bottles, preserved in alcohol. It takes an average of 600 rings of eggs to weigh one ounce, each ring contains from 200 to 400 eggs, showing that the work done in this manner by Mr. De Long will be equal to the destruction of about 60,000,000 of caterpillars.

Disinfection of Fruit Boxes.

A meeting of the fruit growers and commission merchants was held Tuesday afternoon, at the Produce Exchange, Mr. Dalton, of Dalton & Gray, presiding. Local Inspector Hayden stated the object of the meeting, which was to form some definite plan of disinfecting empty packages and boxes before they are returned to the fruit growers. He proposes a plan for disinfecting at a cost of only one cent a package. All boxes are to be put through a disinfecting solution. He requested the co-operation of the merchants and draymen.

Horticultural Officer Matthew Cooke approved Mr. Hayden's plan and thought it was the only feasible plan yet proposed. The fruit growers do all they can to prevent pests, but the commission merchants must do their part. The boxes of early vegetables need not be disinfected. Mr. Crane, of Alameda, thought there would be no objections to the plan of Mr. Hayden. He thought the Local Inspector ought to inspect the commission houses as well.

John Emerson, of the firm of Drake & Emerson, offered a motion concurring in Mr. Hayden's proposition. Robert Howe spoke in favor of the motion.

Following is a copy of the resolution which was adopted:

Resolved, That we indorse the plan proposed by Mr. Hayden, of the San Francisco Disinfecting company, as the best and only means that can be adopted by the commission merchants for the disinfecting of all packages.

Considerable discussion on the subject was indulged in, and on motion the meeting adjourned.

Soot for Slugs.

It is about the right time for cleaning stove-pipes and chimneys, and the persistent slug is also beginning his operations on garden vegetables and flowers. Put this and that together, or, in other words, introduce the soot to the slug. For example, to keep slugs from strawberries, give the plants at once several overhead dressings of equal parts soot and lime, covering the entire ground between the rows. The best time for these dustings is early in the morning or late in the evening. Soot is one of the best possible manures for strawberries. In about a week after the last dressing, unless rain has fallen in the interval, the plants should receive a heavy overhead watering. This clears the crowns and leaves, and renders the soil uncomfortable for worms, wood lice, earwigs, or other pests to which the strawberry is liable. Soot is also beneficial to other plants and flowers. Every ounce of soot should go into the garden, not on the waste heap.

The Riverside Citrus Fair.

[Written for the RURAL PRESS by JEANNE C. CARR.]

An army officer who ranged the Jurupa rancho prior to 1849, and has noted every phase of its development from a semi-desert to one of the fairest spots of the earth, was present at the first and last exposition of the Riverside fruit industry. I know of no one else who can adequately represent, by speech or pen, the transformation which has been effected in that portion of the San Bernardino valley during the last eight years. I confess I never felt the poverty of words so deeply as in making the attempt.

There is no other harvest which so dazzles and dazes the beholder as that of the orange—and of oranges the Riverside or Washington Navel is king. Of good form, the characteristic which gives name to these varieties almost obliterated, it is of that deep red gold which we love so much in our warm sunsets. About 500 ft. of table space covered with this luscious product, disposed with the best effect—was not this a sight worth seeing?

The "Riverside" Navel, as it is now called, is the most profitable orange for shipment, equal in flavor and bearing qualities to the best seedlings, as far as it has yet been tested. Its color places it among the fancy fruits for the dessert. Mr. P. D. Cover has been paid $60 per thousand for some of his choicest boxes; $40 has been the minimum price this year. But the seedling oranges of Riverside are so good that many prefer them to the best buds, believing them of hardier constitution, more thoroughly acclimated and probably longer lived. The Malta Bloods shown were superb, and I have never seen such lovely plates of the small St. Michael, my own favorite orange.

Standing before such a table as that of Mr. A. J. Twogood, where the Australian and Riverside Navel, Konah, Paper-rind St. Michael, Mediterranean Sweet, Lisbon lemons, and a splendid pyramid of seedlings, vied with each other, one would find it hard to say which is preferable. I was thankful not to be upon any committee who had to decide upon the relative merits of the numerous varieties and exhibits.

Mr. E. W. Holmes, in addition to the above list, showed Du Roi and the Queen orange; Rio, a superior seedling lemon; Sweet Rind, Oblong Creole, and a fine box of wrapped oranges. At the first fair the boxes of Mr. A. B. Clark, of Orange, neatly wrapped for shipment, furnished a model which has been extensively adopted.

Mr. H. A. Westbrook displayed a very good collective exhibit; Mr. I. H. Fountain, superior Paper-rind St. Michael and typical Australian Navel; Mr. I. H. Smith, the Riverside Navel and Wilson's Best.

Rev. S. R. McGee is the importer of the King orange of China, noticed in a former report, and exhibits the Riverside Navel of peculiar form, hardly distinguishable from the Australian.

Mr. J. E. Cutter, the Riverside schoolmaster, has some very superior oranges, though his place is very young.

One of the most beautiful sections is that of Mr. James Bettner and A. S. White, heaped with glowing Riversides, Malta Bloods, Mediterranean Sweets. A pretty decorative device made of oranges, was a conventionalized Gipsy camp kettle, the poles being threaded oranges, the kettle ditto, hung by ropes of smilax, while the interior was filled with *jellied oranges*, a capital note for housekeepers.

I should crowd your columns were I to attempt to particularize in noticing the displays of Shugart and Waite, Cover and McCoy, the Twogoods, Rudisill, Garcelon and others well-known in the markets. The exhibit of P. D. Cover covered 40 ft. of table space, containing limes, lemons, superb seedling oranges, Paper-rind St. Michaels, etc.

Cover and McCoy displayed in a very attractive manner; had the most beautiful show of the little Kid-glove Tangerine; a pyramid of 30 Riverside Navel oranges which can never be excelled—one of these measured 14 inches.

Concerning big oranges, the largest shown was not entered in time for the committee; I think it was Mr. Van Lenven's, of Old San Bernardino. P. D. Cover took the premium; I forgot to measure it. Mr. Caldwell's measured 16¼ by 15½ inches, a trifle smaller than the largest of 1881, which filled a porcelain nut dish even full, and measured 17 by 17 inches. I am glad to believe that these monster oranges are shrinking, for they are unbecoming to small holdings.

Swett and Norcross had a fine exhibit in every respect, among which I saw a magnificent cluster of Konahs. Twogood had the best box. I think the largest cluster on exhibition was that of D. C. Twogood.

The best orange on exhibition! How should it be decided? The committee were discreet, had a happy thought, and limited their comparison to the best premium seedling, and best premium budded. Our friend, Richardson, of San Gabriel, took the prize, the orange being a Riverside Navel, and thus our historical position in orange culture, as well as modern improvements, is fully recognized.

There were twenty-seven competitors for the society's premiums for the best seedling orange. Mr. P. D. Cover took the first, and Mr. G. W. Garcelon the second premium. The same parties competed for the premium for the best lemons, with the same results, but Mr. Cover added to his laurels yet another for the best limes. The lemons of San Gabriel, grown by Mr. S. Richardson, were warmly commended.

The first premium "for the best display of citrus fruits in the southern country," was won by D. McRae, of San Diego; the second, by G. B. Adams of San Gabriel, who is one of the most skillful and successful orchardists in the State. The exhibit of Mr. Adams was a citrus fair in itself, containing several varieties not included in any other list, among these the Florida Blood. Los Angeles did not enter the lists, except a small but meritorious exhibit of William Niles; and most of the select fruit of Pasadena having already been sent East, there was no exhibit from there, except of Wallace's canned fruit, and the cocoons and raw silk of your correspondent. Mr. Loop, of Pomona, had some beautiful clusters of oranges. Mr. Messerve sent Languedoc almonds. The McPherson brothers, of Orange, received the second premium for Muscat raisins, and the first for Seedless Sultanas. Mr. Ellwood Cooper, of Santa Barbara, received a premium for his fine olive oil, and Frank Kimball, of National City, for his excellent pickled olives. Mr. Loop showed pickled olives of the Mission variety.

This fair has been noticeable for the superior attractiveness of the packages shown as prepared for shipment. This is especially true of raisins, which won the highest encomiums from Mr. Blowers and other experts present. There was one box of raisins which was shown at the first fair, looking as fresh as those of the present season, entirely free from the sugared appearance so common upon old raisins. Mr. G. R. Hinde, of Anaheim, had some excellent figs; the only fresh grapes seen were from Mr. H. J. Rudisill; these were excellent. Two lots of fine winter apples from E. Steele, of National City, and I. C. Haight, of Riverside, vied with the oranges in richness of coloring.

The papers read and addresses given were pertinent and full of interest. Mr. Rudisill's opening address of welcome was a graceful effort, unfortunately heard by few, the noise of the moving crowd making it impossible for any speaker to do himself justice.

The following evening arrangements were made for seating the large audience, and the exercises passed off without a jarring note, concluding with a clever poem by Mr. Kercheval.

The veteran orange culturist, Thos. A. Garey, on Thursday evening gave a historical resume of the modern development of the culture in the lower counties. He said he began in 1865 by planting 10,000 orange seeds, contrary to the advice of Wolfskill and others, who thought he had better be planting potatoes. The following year he planted 50,000, and was declared fit for the lunatic asylum. In 1867 he increased his planting to 100,000. The first nursery had been planted by one Mr. Halsey, on the Rowland property, of Tahiti seed; it brought for 2,000 trees $4,000, mostly going to enlarge the plantations of O. W. Childs. Ten years later, in 1876, Mr. Garey's sales amounted to $170,000. And yet, he says, in spite of the formidable array of figures which proved "that there were oranges enough planted to give every man, woman and child in the United States ten oranges a day," the area of orange culture increases; and wherever the climate is suitable, it has proved one of the most remunerative.

The public had been promised a microscopic introduction to the coccus family through Messrs. Craw and Lelong. These gentlemen did not appear, and we are sure that scale bugs, dead or alive, will never be at home in Riverside. The ounce of prevention is certain to be the policy of so enterprising a people.

And now a word of Riverside itself and its environs, Arlington, Lugonia and Redlands. Our little Pasadena presents a miniature of what is going on in the broader valley, so nobly enclosed and defended by the southern Sierra. The fountains of perennial streams are those snow-covered peaks, still clothed in their garment of pines, and only water is needed to ensure fertility over any part of these lowlands. Ages of disintegration have created a soil admirably composed for the uses of the fruit grower. The winds of the desert are fierce and frequent, and during the fair week, young orange trees were still in their blankets of straw or evergreens. Some gay young people went from San Bernardino to Riverside in December or January last in improvised cutters, that they might relate to their childrens' children the legend of the snowy winter. But the winds are the Riversiders' best friends; otherwise the vast system of irrigation, required by the certain growth of population, would breed malaria and make, during the summer heat, a climate like that of the Roman Campagna.

The older portion of Riverside has already the appearance of an old settlement. Mr. Garcelon's place and the North place might have been dropped from a New England village, so embowered are they in shade and fruit trees. At Mr. Garcelon's I learned something quite new. He has some of the largest eucalypti of their age that I have seen, planted along the sidewalk, and just within are fine apricot, orange and other fruit trees, growing apparently quite as well as if the eucalypti were not there. Mr. G. attributes it to the fact that the eucalypti never had their tap-roots disturbed, having been planted carefully from the seed-bed, and are now deriving their nourishment from a lower stratum of soil. He says he never finds eucalptus roots in digging around his other trees.

The beauty of Arlington, with its fine boulevard and elegant villas, is attracting more and more of the class who, having toiled and spun, can afford and appreciate the luxuries of life, while dropping its vanities. New residences are seen in all the avenues. Arlington village is an extension covering a mile square, and commands even a finer sweep of the mountains than the older portion. In some portions of the drive I noticed that the peppers and eucalypti are being cut out, to give a view of the residences from the avenue; in others, palms and grevillia have been substituted. Had the old plan been adhered to, a very few years would have made a green tunnel of the finest avenue in California.

The new Pavilion is commodious, and when the interior is finished will make an excellent concert and lecture room. A model school building is contemplated, and two very tasteful churches, Baptist and Methodist, are just being completed. Some of the private residences have cost $20,000. Mr. Evans, who is indefatigable in making the charms of Riverside known to strangers, pointed out lots, miles from Riverside center, recently sold for $1,000 per acre. For one fine situation on the boulevard $16,000 had been refused. These seem fabulous prices, but the net proceeds of orchards of the Riverside oranges yield a fair interest on the investment. This year, Mr. Cover tells me he has been paid $60 per thousand for his best, and $40 per thousand for his Navel oranges. The lemon crop, as the Riversiders put it upon the market, is an increasingly profitable one.

Looking from Colton towards Lugonia and Redlands, one observes the same activity. Dr. Stillman has a fine property at Lugonia, which he is planting with selections from all climates; he intends to make figs a specialty.

But I must reserve a portion of the good report of which my mind is full for another occasion. JEANNE C. CARR.

Pasadena, March 27, 1882.

Opening Address.

[We make the following selections from the excellent opening address of the Manager of the fair, H. J. RUDISILL.]

Another year has been numbered with the past since we met for similar purposes, and we meet now under the most favorable auspices, with general good health throughout the borders of southern California, with a fruitful year just passed and the promise of a more abundant one before us.

We meet again, and for the first time, under our own roof, erected through the efforts of the public-spirited and liberal citizens of Riverside and vicinity, to inspect the beautiful and interesting fruits of this bounteous land, to compare notes and experiences in methods of cultivation, and to examine new varieties brought to notice since our last exhibition. Let our meeting, therefore, be a joyous one, and let heartfelt greetings go out to the visitors who come to participate with us.

Fairs, or exhibitions of fruit and agricultural products, such as we are now accustomed ts see, are comparatively of recent origin.

The first fair for strictly promoting improvement in the useful arts was held in London, by the Society of Arts, in the year 1760. At an early day several efforts were made to encourage art and invention in the country, by the establishment of a series of premiums, but no prominent system was inaugurated till the year 1810.

Elkanah Watson, a thrifty son of New England, a merchant at Albany, New York, and a prominent philanthropist of his day, was the real originator of the present system of fairs and cattle shows, sustained and directed by agricultural and horticultural societies. At his farm near Pittsfield, in the old Bay State, he conceived the idea of interesting the farmers of Berkshire county in holding an exhibition of imported cattle and specimen products of the soil, for the purpose of showing what might be accomplished by proper culture. To compensate and reward exhibitors somewhat for the care and labor bestowed on their specimens, prizes were awarded for the best.

His first fair was quite a success, and for the purpose of enlarging the next, he applied to the citizens of Boston for pecuniary aid, but failed to get a single favorable response.

Ex-President John Adams, in his reply to Mr. Watson's appeal for aid, made it quite apparent that the leading men of that day did not appreciate the importance of this new movement for the encouragement of these branches of industry. He pithily replied:

"You will not get aid from Boston. Commerce, literature, theology, medicine, the University and universal politics, are all against you."

How often do the wisest men fail in forecasting the future, and how little did he imagine that he should live to see all the great powers he had here quoted as against the movement actively engaged in support of Mr. Watson's subsequent efforts.

Mr. Watson was not discouraged by this reproof, but redoubled his efforts, and for several years held very successful fairs, and lived to see his plans generally adopted throughout this country.

No one can estimate the value of these fairs to the American people. Their regular occurrence has kept up a spirit of emulation in the desire to produce something better than before. They have served as a means of advertising new and superior productions upon a scale the most extensive, and have lead to the gradual development of the business theory of large sales with small profits.

They have stimulated inventions by keeping up the constant desire for new discoveries, and improved methods, and better machinery, and lastly they have dignified labor by giving it something more to struggle for than mere pecuniary compensation.

Very humble indeed was our beginning as a Citrus Fair Association four years ago, and few, if any, ventured to hope for the success thus far attained. Yet this is but the threshold of what may be accomplished by well directed and intelligent effort.

This effort, permit me to suggest, should take the following forms:

1st—Encourage by all suitable means the growth of the orange, the lemon, and the grape for raisins, as these can undoubtedly be made the leading industries in southern California..

2d—Encourage the introduction of new and improved varieties of these fruits, for while we seem to have of these everything that could be desired, yet I think there is still room for improvement.

3d—Assist in the introduction of new industries suited to our localities and productions.

4th—Encourage the growth of all varieties of fruits adapted to our climate and soils, by frequent exhibitions of fruits in their seasons, and by judicious premiums.

5th—Lead and direct in the growth of the beautiful, not alone in the sun-flower, for that can be found here along every road-side; but in the introduction of the choicest plants and flowers adapted to our climate, that in time the humblest home in this valley may be imbued with the spirit and become as charming and attractive in its sphere, as the more costly dwelling places.

6th—Encourage and interest the young in all these pursuits by special premiums adapted to their ability, for as your successors in the grand field of labor opening throughout this southern land, they will be well equipped for the work by the experience and instruction to be gained in your annual or quarterly assemblages here.

The query will naturally arise here, How can an association for the exhibition of citrus fruits do these things? The answer is that, as an association having a community of interest in all the points referred to, where the members are united and sympathetic, they possess a power and wield an influence that will readily overcome obstacles and accomplish results that individual effort would be powerless to undertake.

And finally, Mr. President and members of the Citrus Fair Association, I congratulate you upon the successful completion of your undertaking. The erection of such a large and handsome building for such a purpose, at a cost of some $7,000, without a debt to annoy you in the future, in a comparatively new community, possessing but moderate incomes, and burdened with the expenses attendant upon the building of new homes, was a great task worthily accomplished. The sincere thanks of this entire community, as well as all those interested in the future growth of this beautiful land, will certainly be accorded you for showing what intelligent, well-directed labor can accomplish. And while thanks are due to all, they are especially due to your Executive Committee—Messrs. A. S. White, Jas. Bettner and B. D. Burt—who have given constant personal attention to all the details of arrangement and construction, and from the inception of the enterprise to its present triumph have never faltered in the good work.

Profits in Citrus Fruits and Raisin Culture.

Mr. Chairman, Ladies and Gentlemen:—The Executive Committee requested me to select the subject for my address before you at this time. I have chosen for the few minutes I may have the honor to appear before you, a theme which I know will command your attention; not that I expect to clothe my ideas with eloquent and exhaustive words, and bring in response your warm approval—but because I shall try to open up, directly or indirectly, some method by which our empty pockets, after our many years of constant toil, shall be filled; some way by which the producer and consumer shall be brought nearer together, so that the grower of the orange and the lemon, the cultivator of the grape and our other fruits, shall receive every year a fair profit, and the consumer shall supply his wants at a less price. I shall name my subject, "Profits in Citrus Fruit and Raisin Culture."

Nothing more can be added to the reputation that the Riverside fruits have abroad than that fruits from other localities are offered to a deceived public as choice Riverside productions, although the cloven foot spreads itself over the counterfeit either as scale or fungus. We are told that all along the line of our railroads Riverside bears the censure or praise of raising fruits which never grew within forty miles or more of her border.

The cannery which established the reputation for San Jose fruits by using Riverside peaches and apricots, the Chinaman who recommends his black and yellow oranges as "Riverside" in the market, and all along the world's mart our productions are being appreciated. Then, using the same care we have taken in the past, stimulated by the reward which must finally come to us in the future, we should take courage and advance; not allowing ourselves to grow careless in the handling or the packing of our citrus fruits, or to take less pains in curing and packing our raisins, which, when well done, have stood high up in the opinion of experts. That our oranges, lemons and limes are admitted to be first-class, and our raisins can be made so if

we will, seems to bring us to the goal of our desires as to production.

Nearly ten years since the few of us who then composed Riverside, journeyed often through the bad roads of the canyon to old San Bernardino, to see Captain Pishon and Mr. Anson Van Leuven, and get an impetus from seeing one to three thousand oranges upon thirteen and fourteen-year-old trees, worth upon the tree from 50 to 60 cents per dozen, and which price we cheerfully paid, because had we not trees, young to be sure, nevertheless trees which in a few years would bring us in their $40 to $80 each. Our purchased fruit we would keep to look at, and see the gold and silver in the dim distance, which often exchant the imagination. Our old San Bernardino friends would, in their season, present us with the fragrant orange-blossoms, and we would wish, being married, that over again we might stand before the altar in order to see the beautiful blossoms, the real article, decorating our brides. Had our bachelors of to-day one-half the enthusiasm, many a single Darby would soon find his Joan, and Arlington would bloom and blossom like a Rose—dale.

Our spare evenings were often turned to mathematics, as to the quantity of oranges a tree or a number of trees would produce at so many years, and many were the discussions between those dyed in the orange and those who had no faith. I recollect two gentlemen who spent a whole evening in getting at the fact that Riverside had more orange trees at that time, seven years since, than would give, when bearing, every man, woman and child in the United States 10 oranges each per day, and that story was told by the credulous, and doubtless turned many away from purchasing lands at $30 an acre which they could have sold in seven years for $200 an acre. How easily fortunes are lost.

The uncertainty of a San Francisco market chills our ardor. Our ventures quite often pay well, then suddenly hardly expenses are covered by returns. The idea of a few bearing trees to-day sometimes glutting the market with their fruits must dampen somewhat the courage of those whose trees are as yet nonproductive. It seems as though it was time for our commission men to bestir themselves and find enlarged demand for our products. When, in other cities upon the line of the railroad east, our productions are sold at five times the price raceived in San Francisco, it looks as though a little more enterprise would not come amiss somewhere. I have had just that experience, have had budded lemons sold on commission in Denver at $10 per box, and some of the same lot sold as high as $1.75 per box in the Golden Gate City, merely because, so the reason was given me, that limes were preferred at a much higher figure, as their juice harmonized more nicely with the stomach of the inebriate. In my humble opinion, this is so much in favor of the lemon, which enriches and so fully flavors in culinary art, but refuses to associate harmoniously with the sot. Our Lisbon and Sweet Rind lemons are admitted to be unexcelled; then why do our San Francisco markets quote them less than one-half the price of the imported? Is it not time, as in Denver, to sell our fruit upon its merit? In almost anything else of our noble country's production, immediately when the quality is there, a front rank is given the article. Who among our commission men is willing to take Riverside fruit and sell for us upon its merits?

There is with all the esthetic qualities associated with this cultivation of our products, a continued need of persistent and well-directed efforts, rules to be observed, principles to be carried out, work to be done, and well done. A proprietor of a 20-acre ranch, although he may have assistance in his labors, has no idle time to spare if he wishes to see his trees and vines produce good fruit. Ought he not then, after his pocketbook is emptied into his soil, and his time is spent in its cultivation, expect paying returns, knowing as he does that the good fruit he raises is highly paid for and appreciated by the consumer.

In the large cities of the East, when an overstocked market is approaching, the men of energy get posted as to the supply and demand in other cities and quickly the burden is divided, with much less loss than to hold perishable fruits until they have to be thrown into the bay and only rise with the tides of San Francisco. Just here the censure perhaps falls upon our railroad; but they are beginning to admit the narrowness of their policy, and are offering better rates of transportation; but in order to avail ourselves of some advantages offered, we should not be compelled to pay local rates to places more remote than the destination of our products, in other words, if we desire to ship to St. Louis we are forced to pay, first a local rate to Los Angeles, then our carload of products returns past Colton and proceeds upon its destination. It seems to me that rates should be made according to the number of miles to market and quantity shipped. It takes our railroad magnates a long time to find out that the surest way to increase satisfactorily their gains, is to reduce their tariff to the lowest possible paying rates, so that those who would be encouraged to till the soil of California, by such a policy would soon by adding to the freight increase the returns of the railroad company. The policy of our most successful traders, "small profits and many of them," would be acceptable to all patrons and would never create the cry of monopoly, which is gradually becoming the great political war-cry of the country. It is no use for our railroad men to tell us that their charges hardly cover expenses; somehow they manage to become immensely wealthy, and each year adds largely to their already great gains. Unless they are wise enough to meet the people of this State in some more generous way at an early day, all the signs fortell a grand contest between the voters of this free country and monopolists who have so far apparently succeeded in shackling many of the voters' representatives.

This determination to be wealthy in some way, even though we have to build our gains upon the crumpled high principles of manhood, ignoring the Golden Rule, "Do unto others as you would have others do unto you," should be condemned both in men and in corporations. To-day the rising generation wants wealth, must have it, will have it, and will resort to excessive measures to obtain it, having learned lessons from the present generation of monopolists.

In ancient times the gods were said to help those who would help themselves. Our remedy for getting lower freights lies with our using all fair and honorable means with the powers under whose control such things are until our ends are attained. With lower freights the markets of the East are open to us; they want what we can raise; our only pecuniary safety is to let them have our products, and the sooner we arrive at this solution of the difficulty, with the quantity of fruit in prospect in the near future, the best for us.

Already the feasibility of establishing agencies for the fruits of Riverside in the large cities of the East, either by co-operation or commission, is being discussed by our most prominent growers; but if foreign products are to be landed close by us at a much less freight than we can ship ours to the same point, although produced and freighted three and four times further from the market than ours, what can we hope to gain from shipping to more distant places, unless we can catch an empty market or a poor foreign crop. Justice demands that the tariff from the west to all points east should be the same as the same freights from east to west. This Government should not allow any corporation, however influential and wealthy, to prevent the development of any of her lands, especially this part of her dominion, which a few years since was one literal desert, now redeemed by the enterprise, labor and money of her citizens.

It costs the producer of oranges and lemons, including gathering 8 cents, packing 10 cents, boxes 22 cents, freight and drayage 65 cents, commission 10 cents, or about $1.15 per box; if paper wraps are used for the fruit, 25 cents more is to be added to cover cost of paper and extra time in wrapping. A box of lemons will weigh nearly 10 lbs. more than a box of oranges. My oranges have sold in San Francisco this season from $2 to $4 per box; at about the same time, in Denver, the same class of my seedling oranges sold for $7.83 per box, containing 165 to the box. Another gentleman, who shipped to Denver with me, received for his very choice Riverside Navel about $8.22 per box of 137. Either there is not so much difference after all between the Navel and seedling, or else Denver is not posted. It costs about $4.20 to pay freight and commission on box of Riverside lemons sold in Denver and $3.50 on box of oranges. At same time my lemons sold in San Francisco for $1.75; two other San Francisco commission houses disposed of two other lots of same kind for $2 50 and $3.50 per box. I am at a loss to understand why so much difference in sales, as all were equally good lemons selected and wrapped.

In regard to raisins, the cost of gathering, curing, sweating, packing and marketing will be from 80 cents to $1 per box of 20 lbs., according to the season. If raisins are sold for $2 per box, $1 may be called net profit.

Allow me, Mr. Chairman, in conclusion, to emphasize the three chief and most important points of my address, and if we desire success we must organize in some way in order to reach the following desirable ends:

First, our citrus fruits and raisins should be kept up to the highest standard, both by cultivation and packing.

Second, our *united* efforts to induce the railroad to give us the lowest possible freights should be persistent and continued until our object is attained.

Third, we should *move together* in establishing in all the large cities of our nation co-operative or commission houses for the sale of Riverside fruits.—*G. W. Garcelon.*

Sericulture.

[By Jeanne C. Carr.]

I little thought when I visited Los Angeles in 1869–70, in company with Louis Provost, and examined the details of a plan for a silk colony in southern California, that I should plead the cause of sericulture upon the very spot selected for his great experiment. That we have Riverside, with its diversified interests and occupations, with a choice population culled from the older American States, instead of the French colony, is not a matter of regret, while the natural advantages for making silk-culture an exceptional success at Riverside remain unimpaired. If the "Silk Center Association" failed, it was because Provost died, and the Franco-Prussian war not only prevented the emigration of the colonists, but dealt an almost fatal blow to silk culture in the United States by shutting up the market for raw silk and for eggs or grain. In 10 years, however, the workings of the law of compensation are seen in the political and industrial prosperity of the French Republic and the remarkable development of silk manufactures in this country.

During the last year it is estimated that nearly 100,000 persons were employed in the production and manufacture of silk in the United States. In 1880 the amount of capital invested was over $9,000,000, and the value of finished goods $34,410,463. There are now 383 silk factories and nearly 10,000 looms, employing about 40,000 hands, who have earned during the year $9,000,000.

At the recent Silk fair in Philadelphia, silk and cocoons from 27 States were exhibited. The variety and beauty of those manufactured products created the greatest interest and admiration. Ribbons, gloves, handkerchiefs, shawls, piece silks from qualities used as linings up to satins, velvets and brocades, were exhibited, some of which were valued at $14 per yard. Besides, there was a great variety of fancy goods, fringes, trimmings, silk hosiery, etc. Fish lines, or "silkworm gut," made of the intestines of worms that die before spinning, and violin strings of similar origin, serve to illustrate the use of this wonderful insect.

The miracle of the Cincinnati porker, of whom everything is utilized but its squeal, is more than matched by the transformation of the Bombyx into imperishable uses of art and beauty.

The raw material for this manufacture is taken, for the most part, across California from Japan and China.

The looms of France and England, where much silk is consumed in mixed fabrics, such as paisley shawls, are largely supplied from the same source. From $30,000,000 to $40,000,000 of value created by *a household industry!* Why not keep a large portion of this vast sum at home? The United States have bought over $10,000,000 worth of Japanese raw silk annually for the past three or four years.

Of cocoons and waste silks	$ 1,206,806
Manufactured silks	30,526,509
Silkworm eggs	11,688,820
In all	$43,402,137

Yet the mulberry tree will grow anywhere that an apple tree will; the season for a single crop lasts only six weeks, and the labor of a child of 10 years of age applied in the care of silkworms creates a value of at least $20.

A Pennsylvania farmer tried the experiment with a few worms raised in his house, with trifling expense for racks and shelves, and at the end of the six weeks sold 30 lbs. of cocoons at $2 per lb., and 15 ounces of eggs at $4 per ounce. In our climate the season would begin in April and allow two and even three crops of worms to be fed in the weeks of summer vacation in our country schools. Thus $40 might be earned by each child during the interval of school work, in a very light, wholesome and agreeable occupation—an occupation, by the way, as well suited to the aged as to the young.

At the Philadelphia fair the aged mother of Bayard Taylor won the premium for the best cocoons, in spite of her fourscore years.

The export of silkworm eggs to the French market from China and Japan is still very large, amounting to more than $100,000 annually.

California eggs would take precedence, on account of the liability of foreign eggs to be spoiled in transit; indeed, millions are thrown away in San Francisco every year.

Now a word about the market for our raw material, in case the school children of San Bernardino and Los Angeles counties conclude to enter the lists as competitive industrialists. We have now a local market for more than the present supply, in the filature and factory lately opened in San Jose, the spool-silk factory at San Francisco; and last year an agent from the Paterson, N. J., silk mills visited the Pacific coast for the purpose of buying the cocoons. All the pierced cocoons, which were once of little value, are used with modern machinery for the production of spun silk, and are worth $1 per pound at our doors, while the eggs obtained from these will bring $5 per ounce.

When the Silk Center Association was projected, large profits were realized from the sale of eggs, then worth $8 per ounce, and from the sale of mulberry cuttings. I know of one culturist in Los Angeles who made $2,700 from a single acre of ground in 1869, and lost fourfold in the collapse which followed. The lessons of the past should teach us to beware of the speculative and keep closely to the practical side of this subject.

I would not root out even my China lemons to make room for *Morus multicaulis*, but wherever shade or screens are needed, there I would plant the clean-limbed, umbrageous mulberries. Planted 30 ft. apart as standards, they are suitable for cross streets or private roads. Planted 4 ft. apart, they are of a convenient hight for gathering the leaves, and make excellent hedges. In orchard form they should be not more than 14 ft. apart, and kept headed down. In the Eastern States, mulberry plantations are sown to permanent grasses, but here, with our ceaseless cultivation of the soil, they not only make finer trees, but yield a far greater quantity of food. Some of my *Morus multicaulis* leaves measured 13 inches in length by 10 in width during the last season, and it was a pleasure to watch the rapidity with which the worms in their last stage of growth reduced them to skeletons.

One acre will yield 50,000 lbs. of leaves, and support a million of worms. A million cocoons will yield, at the rate of 2,500 to the pound, 400 lbs. of raw silk, value $1,600. Raw silk, reeled, commands from $4 to $8 per lb., according to quality. Deduct expenses of tending, tillage and losses; allow for bad seasons, our mistrals, blizzards or Santa Anas, and we have still an outlook for silk culture equal to that of the orange or vine.

Quite recently the Osage orange has been substituted for the mulberry with good results, the quality of the cocoons being pronounced fully equal by experts. In the silk colony of Kansas it is preferred, and some enthusiasts believe that the rearing of worms in the open air may yet be practicable upon low-trimmed hedges of the Maclura. It is more likely that newly discovered native races of the Bombyx may be utilized and prove of hardier constitution than the delicate and fastidious products of ages of culture among the Chinese.

The silk culture deserves encouragement.

1. Because of its national importance.
2. Because it will insure financial independence to thousands of dependent persons.
3. Because of its educational value in training the young to habits of observation and habits of industry.

Throughout France it is considered a part of the education of young ladies, and nearly all the rural schools secure from the local authorities distribution of silkworm eggs, that the pupils may become familiar with what is there known as the "education of the worm."

Here, at least, we have one specialty of practical education in which parents, teachers and patriotic persons may cordially unite, to the end of making southern California "one of the great silk-producing and manufacturing countries of the world."

Pasadena.

Water as Plant Food and Its Abuses.

By Dr. O. H. Congar.]

Pure water as direct food to plants can well be questioned, although it is important to observe the order of change that is not only constant, but also apparent throughout Nature, and that by the operation of natural law, the vegetable kingdom has gradually crept out of ancient seas, as the dry lands formed above their surface. This order of sequence is now too well established, as revealed by the light of science, to require special argument.

In the unfoldment of plant life, age succeeded age, geological change was slowly going on, lithographing each class and species of plant then monarch of the land surface of the globe. Yet to water was all organic life due, and without which plant life could not have been. But subsequently a more solid and elevated crust gradually formed, affording variable conditions for the manifestation of diverging lines from the parent stock, until high altitudes became a normal condition of the earth's surface, when it is found that corresponding changes had been wrought in the functions of the vegetable world.

From the lowest form to the highest development of vegetable life, change of condition necessitates change of habit and function. This is well observed in all fossil remains of the vegetable kingdom, as obtaining in early geological times.

The beauty and luxuriance of many species of plants encountered upon the burning sands of the desert, beneath a cloudless sky, are alike instructive in noting the change of habit and function forced by conditions.

As a more familiar illustration, take the *Convollaria marjalis* (lily of the valley), which now seeks environment in the mountain tops of Virginia and Carolinas, and the *Pinus canadensis* (spruce hemlock) also, nowhere as well content, as rooted in the rough and elevated regions. Why this divergence from their ancient aquatic ancestors?

Plant life, therefore, as well as that of the animal, is subject to changing conditions, and unfold to the grand and beautiful, or retrograde to the unsightly and useless. In this great field of research, Nature ever offers familiar lessons of wisdom to man, and should be regarded as invaluable guides, in assuming the many responsibilities connected with tree culture; otherwise, an unknown sea of speculation and doubt was open before him.

The primitive condition of plant life, as contrasted with the present, reveals the fact that as the progenitors of existing families began to emerge from their wet to dryer surroundings, to more elevated positions, the struggle for existence greatly increased, these geological changes necessitating, as before stated, a modification of function; and hence old forms of beauty were slowly supplanted by those still more complicated and beautiful.

Taking cognizance of this order and economy of nature, we are justly admonished of the importance of a thorough knowledge of soils, temperatures, humidity of atmosphere, altitude and vicissitudes of climate, as well as many minor considerations, primarily valuable as adjuncts to skill in beneficiating the soil, in order that more reasonable probabilities of success may be assured. The skilled horticulturist is ever impressed with the great importance of these valuable considerations, and in selecting his lands, first approximates closely as to character of soil, and its adaptability to the industry he contemplates engaging in. If it be the cultivation of citrus fruits, for instance, let it also be conceded, that for long life, productiveness and profit, a rich, deep, warm, well under-drained soil is indispensible to assure these results; such soils, and only such, should be studiously sought and devoted to that special industry.

And so far as our present knowledge will justify, the above characteristics together, may entitle it, as the typical soil in its physical and mechanical qualities, and also in which this class of fruits should be propagated with the

(Continued on Page 268.)

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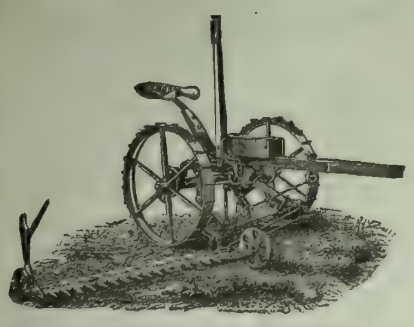

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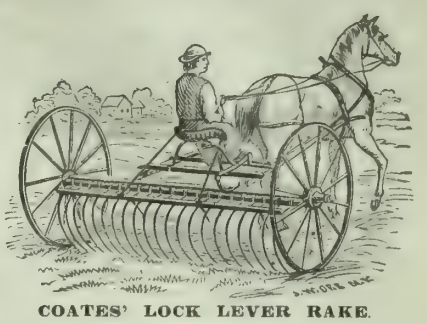

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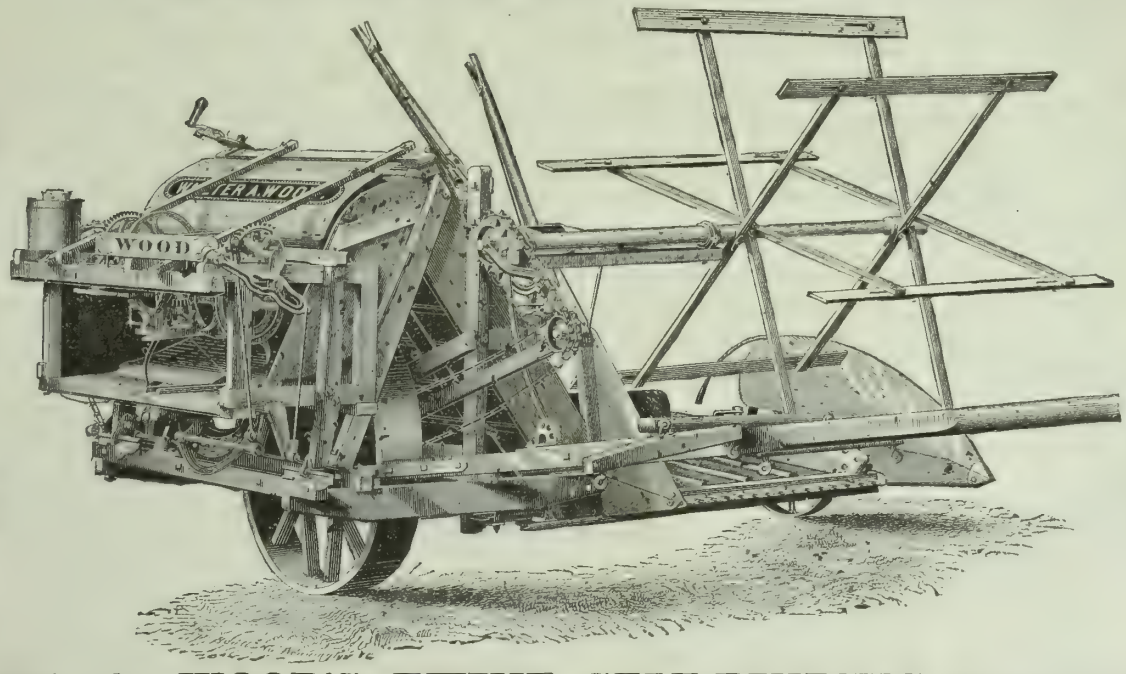

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WALTER A. WOOD'S TWINE SELF-BINDING HARVESTER.

The first and only entirely successful one in the field. Five hundred in use on this coast last season.

REDLANDS.

The owners of the Redlands tract having disposed of a large portion of their lands, now offer for sale one hundred and fifty acres only, at $125 per acre, this being all that will be offered the present season.

Redlands is located on the south side of Mill Creek Ditch, between Old San Bernardino and Crafton.

The lands are a clayey loam, very similar to the lands at the head of Magnolia Avenue in Riverside.

There are no fences on the land.

The tract is being put on the market as rapidly as the water can be put upon the lands, and no faster.

One thousand acres of the tract have just been surveyed and platted, about nine hundred acres of which have already been sold at from $50 to $100 per acre. The price of the remaining tracts has been advanced to $125 per acre.

The third five hundred acre tract will not be put upon the market before the winter of 1882-3. In the meantime the system of irrigation will be completed by finishing the large reservoir, conducting the waters of the Company to the reservoir in pipes and flumes, and laying concrete pipes through the tract to carry water from the reservoir to the highest point on each tract.

The main avenues are one-quarter mile apart, 100 feet wide, and run from northeast to southwest for convenience of irrigation. The course of the sea breeze is parallel with these avenues.

The cross streets are sixty feet wide, and run at right angles with the avenues every half mile.

The tract is subdivided into ten-acre lots, with a town site composed of smaller blocks.

Its situation is the finest in the San Bernardino Valley, the view being unequalled, and the elevation near 2,000 feet above the level of the sea.

The climate is unsurpassed, the location being so far inland that fogs and northers are almost unknown.

The title to the land is United States patent, and is therefore beyond question.

The Water Right is ample and beyond dispute. It consists:—

First—Of fifty shares in the Sunny Side ditch, one of the oldest ditches in San Bernardino county. This water will be conducted from the Sunny Side ditch to the Redlands reservoir in a ditch flumed part or all of the way, so that no water will be lost by seepage. The ditch is already constructed and will be flumed before the next irrigating season. This is good for 500 acres of land.

Second—An eighty-inch stream developed in Santa Ana Canyon. This stream is being piped down to the head of the Redlands ditch, so that the entire water supply will be handled without loss. This stream is good for 500 acres more of land.

Third—Two reservoirs will be constructed. The work on these is now in progress. The largest reservoir will have a capacity sufficient to cover 500 acres of land 9 inchss deep with water. There is an abundance of winter water to supply this reservoir. The second reservoir will be much smaller. The large reservoir will cover 17½ acres of land, and will be 60 feet deep in the deepest place

Fourth—The water will be conducted from the reservoirs to the highest point on each ten-acre tract by means of concrete pipes, thus saving expense and wastage in the distribution of the water. These reservoirs will irrigate another 500 acres.

These water rights, reservoirs, pipes, flumes, ditches, etc., are the property of the Redlands Water Company,—a company incorporated to furnish water to the Redlands tract of 1,500 acres, with 1,500 shares of stock. One share of stock goes with each acre of land, so that when the land is all sold the owners of the land own and control the water, and they only charge such price for the water as is absolutely necessary to pay running expenses for handling the water in the most economical manner possible, as there are no ditches to clean.

Lands shown and business attended to promptly six days in the week only, on the tract.

☞ Send for Circular containing Map and further information.

Postoffice address, SAN BERNARDINO, CAL.

JUDSON & BROWN.

REDLANDS, 1882.

Water as Plant Food and Its Abuses.

(CONTINUED FROM PAGE 266.)

more certain probabilities of satisfactory returns for the investment.

Why the above should be regarded as typical more than ordinary soils, is chiefly owing to its susceptibility to the influence of heat, and its powers to absorb and retain moisture, the two most essential qualities in citrus fruit culture. In cold, wet soils, it is well known, the orange tree languishes, as the inevitable consequence of such unfavorable conditions. Now, what soils are liable to be cold and wet? They are classified as clayey soils, which absorb and evaporate water with the greatest facility, and by this rapid process of evaporation, the heat is carried off, and the soil also becomes dry and hard, necessitating a too frequent application of water to supply the roots of the tree with the requisite amount of moisture. It is plain to be seen, that to maintain clayey soils in the necessary condition for the best interest of the citrus tree, which requires such an average high temperature, is attended with no small amount of difficulty. If, underneath a clayey surface an impervious hard-pan should be encountered, the already unfavorable conditions are greatly aggravated, in consequence of the liability of a surplus of water accumulating and remaining about the roots; whereas, in the deep and more porous soils, it precolates to low depths, to be retained and returned by capillary attraction as the necessities of the tree might demand.

The deep soils are also capable of storing up vast quantities of water, without risk to the life or health of the tree, while the clayey and hard-pan soils are entirely incapable of such a provision. And, moreover, it is with exceeding difficulty that the value of water as direct aliment on clay and hard-pan soils is made apparent, while in typical soils, even an overplus works no apparent injury, but in quantities that upon a clayey soil would make no preceptible impression, through its great solvent powers, in this warmer and more yielding soil, ample food is readily prepared for the roots to as readily assimilate and carry to every branch and leaf of the tree, before the proper degree of heat even could be established in the clayey soil, as a first condition for food preparation.

Although citrus orchards may be found occupying this unfavorable situation, it is quite safe to conclude, however, that the great mass of surface roots will be competent to supply food to the tree for a number of years, without artificial fertilization, but it cannot be expected that the few inches of surface soil can long maintain the increasing demand made upon it.

If, again, it be observed that the orange tree exhibits a marked degree of health and vigor, and the temperature of the surface soil indicates an average temperature of 70° to 75° and the sub-soil six ft. below, a temperature of 60° Fahr. in moist, rich soil, those conditions should be maintained; but it can hardly be expected where water seldom above the temperature of 50° Fahr. is sluiced into the soil, at intervals of only three or four weeks during the growing period. It is becoming a matter of great doubt whether a tree can long return a profit, or survive such treatment.

If, however, conditions of soil will warrant the storing up of water in winter, or during the dormant period of the tree or vine, little, if any harm can reasonably be anticipated, owing to the equality of the temperature of the air, soil and water.

No shock to the tree is produced. The sap, if flowing at all, is necessarily at a low temperature, and hence water can safely be applied in unlimited quantities at this period.

The gum disease is undoubtedly due to a sudden check to the flow of sap at or near the surface of the ground, causing a rupture of the cell walls of the inner bark (liber), from the wounds of which, unelaborated sap exudes and undergoes a process of fermentation, rendering it highly poisonous and destructive to the adjacent parts. This arrest of the sap flow may be either due to a sudden change of temperature, or contact of cold water.

In preparing plant food, the all important function of water is as a solvent, and is food in no other sense. The earthy minerals can be prepared only in this way for assimilation, hence irreparable damage may be done under the mistaken impression that a great amount of water to a tree is better than enough. The great secret lies in adapting the soil to the tree and the tree to the soil, as all forms of vegetable life, comparatively speaking, require fixed conditions to a certain extent.

It is no uncommon occurrence to find a slight ridge or depression materially changing the physical and mechanical character of the soil, and should profit be a leading factor in the calculation, then changes of soil should also suggest changes in the fruits to be propagated, regardless of fancy or convenience. Soils are so widely different, their values should sustain a direct relation to their natural producing powers, for the more fertile the soil, the greater is its power and capacity to absorb and retain the two great requisites, heat and moisture. Clayey soils may be stored with plant food; but if in clods, as is too often the case, it is thereby unfitted to perform that important duty.

Night atmospheres are frequently capable of imparting to soils, in condition, from 5 to 6 gallons of water per ton, during a period of 10 or 12 hours, especially from the humid atmosphere of our coast counties. Frequent cultivation and a state of pulverization will properly prepare the soil to receive this valuable aid, thereby materially compensating for the usual irrigation.

Another compensating method is easily available by exchanging one soil for another, *i. e.*, cast the sandy soil onto the clayey and the clayey back upon the sandy; each fertilizes the other in this way by rendering them more amenable to natural and beneficial influences, which will be regarded as far more economical, also, than shipping guano across ocean wastes.

It must be admitted, however, that it is very difficult to formulate a set of rules for general application, yet it is quite evident that dry sand or adobe is comparatively valueless apart, but become valuable by admixture. So, also, may it be said, in the use of water; an excess is exceedingly destructive, and also greatly reinforced in power for harm by improper temperature.

The newcomer scarcely need err in regard to the few essentials requisite in the choice of land, nor in continuing the practice of putting the right thing in the wrong place. And error can seldom, if ever, result by a thorough and frequent cultivation of the soil, nor in a careful husbanding of all fertilizing material about the, premises and applying to orchards and vineyards or even in the free use of water during the dormant stage of the tree or vine.

This is but the plain and simple duty suggested by ordinary sense. If, however, the old practice of burning the manure is to continue, the weeds permitted to overrun the estate, sucking up the comparatively small amount of moisture drawn from the clouds, there is just reason for anxiety.

But again it may be proper to remark, in closing this discussion for the present, that in thus assuming the great and delicate responsibility of interpoisng human wisdom and skill, in supplying the deficiencies of nature, in attempting to supplement the universal physiological law controling plantlife, errors, of necessity, must be expected as a rule rather than the exception.

Pasadena, March 19, 1882.

Entries and Awards at Riverside Fair.

[All persons whose residence is not stated are of Riverside.]

CLASS 1.—Best display of citrus fruits grown by one exhibitor in the counties of San Diego, Los Angeles, Ventura and Santa Barbara.

ENTRIES.—S. Richardson, San Gabriel; E. Owens, San Diego; J. S. Harvey, San Diego; D. McRea, San Diego; G. B. Adams, San Gabriel.

PREMIUMS.—D. McRea, $15. G. B. Adams, $10. Committee: E. Caldwell, J. Aberdeen, W. H. Fessenden, E. L. Seger.

CLASS 3.—Best display of citrus fruits grown by one exhibitor in the county of San Bernardino.

ENTRIES.—J. B. Crawford, 5 varieties; E. Caldwell, 6; J. H. Fountain, 6; B. W. Handy, 5; H. B. Lockwood, 4; A. J. Twogood, 9; A. D. Haight, 13; B. B. Chandler, 4; B. F. White, 2; G. W. Garcelon, 31; T. W. Cover, 2; S. H. Ferris, 4; Shugart & Waite, 14. The following parties had displays in this class, but did not enter them for premium: H. J. Rudisill, 8; W. P. Russell, 4; I. C. Haight, 7; G. M. Skinner, 4; O. T. Rice, 1; Mrs. S. F. Hall, 1; M. B. Ogden, 1; W. N. Mann, 2; J. R. Noland, 2; John Hall, 6; J. G. North, 2; C. R. Wilkes, 2; S. W. & C. Hollis, 2; J. H. Smith, 5; E. J. Davis; 3; H. McCrary, 3; J. R. Waterman, 2; W. H. Niles, 4, E. Hart, 3; J. H. Smith, 2; Lonnie Haight, 3; H. A. Westbrook, 3; D. H. Burnham, 9; J. E. Keith, 1; A. B. Derby, 2; B. B. Fessenden, 4; A. P. Combs, 1; F. H. Wales, 2; Morse & Seger, 4; C. A. Tinker, 2; A. S. White, 10; Mrs. Andross, 3; J. B. Huberty, 4; E. W. Holmes, 19; W. C. Jones, 4; T. H. Chamblin, 3.

PREMIUMS.—G. W. Garcelon, $10; Shugart & Waite, $5. Committee: Gen. Geo. Stoneman, James Wallace, S. Richardson, C. F. Loop, G. B. Adams.

CLASS 4.—Best display of one variety of budded fruit, not less than 30 specimens; size and general appearance to decide.

ENTRIES.—D. T. Russell, Med. Sweet; Jas. Bettner, Wash. Navel; M. B. Van Fleet, Wash. Navel; J. E. Cutter, Wash. Navel; J. H. Smith, Wash. Navel; A. Keith, Med. Sweet; G. W. Garcelon, Konah; S. Richardson, San Gabriel, Wash. Navel and Konah; Mrs. S. R. Magee, Konah; Sweet Seville and Wash. Navel; Cover & McCoy, 3 plates Wash. Navel; C. R. Wilkes, Wash. Navel and Med. Sweet; S. R. Magee, Konah and Med. Sweet; Shugart & Waite, Konah and Malta Blood; E. J. Davis, Med. Sweet.

PREMIUMS.—Cover & McCoy, $5; J. H. Smith, $3. Committee: B. F. White, C. E. White, Pomona; O. T. Johnson.

CLASS 5.—Best display of one variety of seedling oranges, not less than 30 specimens; size and general appearance to decide.

ENTRIES.—P. Harrington, W. B. Russell, E. Caldwell, S. Richardson, San Gabriel; A. J. Twogood, Mrs. A. L. Eastman, P. S. Russell, J. H. Smith, G. W. Garcelon, P. D. Cover, D. C. Twogood, Rev. C. F. Loop, Pomona.

PREMIUMS.—P. D. Cover, $5; D. C. Twogood, $3. Committee: O. T. Dyer, E. G. Judson, E. F. Hubbard, B. B. Handy.

CLASS 6.—Best pyramid of oranges in variety, not less than 50 specimens; general appearance to decide.

ENTRIES.—J. E. Cutter, G. W. Garcelon, H. P. Keyes, S. R. Magee, D. C. Twogood.

PREMIUMS.—S. R. Magee, $5; D. C. Twogood, $3. Committee: Dr. J. Jarvis, A. P. Johnson, J. W. North.

CLASS 7.—Best budded orange.

ENTRIES.—Jas. Bettner, Wash. Navel and Paper Rind St. Michael; J. E. Cutter, Wash. Navel, Med. Sweet, Du Roi, St. Michael and Rio; H. Saunders, Van Leuven's Best; J. H. Smith, Wash. Navel; M. V. Wright, Large St. Michael; Mrs. H. Phillips, Malta Blood; W. H. Ball, Du Roi; D. Battles, Konah; G. W. Garcelon, Paper Rind St. Michael; S. Richardson, Wash. Navel; P. D. Cover, Paper Rind St Michael; A. P. Combs, Du Roi; Cover & McCoy, Kid Glove Tangerine; S. R. Magee, Wash. Navel; A. L. Whitney, large St. Michael; A. J. Twogood, Wash. Navel; E. J. Davis, Du Roi; D. C. Twogood, Du Roi; Cover & McCoy, Wash. Navel; E. W. Holmes, Wash. Navel; Orson Johnson, Malta Blood.

PREMIUMS.—First, S. Richardson, San Gabriel, Wash. Navel; second, P. D. Cover, Riverside, Paper Rind St. Michael. Committee: L. C. Waite, W. Nelson Mann, D. C. Twogood, Thos. A. Garey, Los Angeles.

CLASS 8.—Best seedling orange.

ENTRIES.—P. Harrington, W. B. Russell, E. Caldwell, A. Keith, O. Johnson, S. Richardson, San Gabriel; T. N. Cover, Shugart & White, E. J. Davis, E. W. Holmes, Mrs. Eastman, P. S. Russell, M. V. Wright, H. P. Keyes, Dr. Ball, G. W. Garcelon, P. D. Cover, A. S. White, E. Caldwell, D. A. Shaw, E. Owens, W. C. Jones, W. H. Niles.

PREMIUMS.—P. D. Cover, $5; G. W. Garcelon, $3. Committee: G. W. Garcelon, C. O. Perrine, C. J. Gill, A. D. Haight, Edwin Hart.

CLASS 9. Best orange on exhibition. Premium to S. Richardson of San Gabriel, for a Riverside Navel. This award was made by making a comparison of the premium budded orange with the premium seedling orange, no entries being made in this class.

CLASS 10.—Largest orange on exhibition; second, do; largest and finest cluster of oranges; second, do.

ENTRIES.—Mrs. S. LaRue, cluster Mediterranean Sweet; H. Saunders, largest orange; E. Caldwell, largest cluster; Mrs. H. Phillips, largest cluster; Mrs. H. A. Puls, largest cluster; H. P. Keyes, largest cluster; M. V. Wright, largest cluster; G. W. Garcelon, two entries—largest orange, largest cluster; S. Richardson, San Gabriel, two entries—largest cluster, largest orange; P. D. Cover, largest orange; Cover & McCoy, largest orange, and largest clusters large St Michael and Acapulco; D. C. Twogood, largest cluster; Chas. Weile, Pomona, largest cluster; A. D. Haight, largest orange; D. McRae, San Diego, largest cluster.

PREMIUMS.—Largest cluster, D. C. Twogood; second largest cluster, Swett & Norcross, largest orange, first, P. D. Cover, second, A. D. Haight. Honorable mention of the exhibit of Anson Van Leuven, of Old San Bernardino; R. M. Caldwell, Orange, sent in a large orange too late for competition. Committee: G. P. Rixford, San Francisco, J. A. Simmons, W. H. Ball.

CLASS 11.—Best of several specified varieties of budded oranges.

ENTRIES.—Mrs. S. LaRue, Mediterranean Sweet; H. J. Rudisill, Australian Navel; James Bettner, Washington Navel, Australian Navel, Malta Blood, paper rind St. Michael and Mediterranean Sweet; W. B. Russell, Mediterranean Sweet and paper rind St. Michael; E. Hart, Washington Navel, Australian Navel, Mediterranean Sweet and paper rind St. Michael; J. E. Cutter, Washington Navel, Mediterranean Sweet, and paper rind St. Michael; H. Saunders, paper rind St. Michael, Mediterranean Sweet and Du Roi; Wm. P. Russell, Malta Blood; J. Van de Grift, Mediterranean Sweet; E. Caldwell, Australian Navel, paper rind St. Michael and Mediterranean Sweet; Mrs. H. Phillips, Malta Blood; Mrs. H. A. Puls, paper rind St. Michael, Mediterranean Sweet and Australian Navel; H. A. Westbrook, Mediterranean Sweet, Malta Blood and Australian Navel; C. J. Gill, paper rind St. Michael, Malta Blood and Mediterranean Sweet; B. F. White, Malta Blood; H. P. Keyes, Mediterranean Sweet and paper rind St. Michael; A. Keith, Mediterranean Sweet; W. E. Keith, Mediterranean Sweet and paper rind St. Michael; O. Johnson, Malta Blood; D. Battles, paper rind St. Michael; G. W. Garcelon, Washington Navel, Australian Navel, Malta Blood, paper rind St. Michael and Mediterranean Sweet; S. R. Magee, Mediterranean Sweet, Malta Blood and Washington Navel; S. Richardson, San Gabriel, Washington Navel and paper rind St. Michael; P. D. Cover, paper rind St. Michael; A. B. Derby, Malta Blood; W. N. Mann, Washington Navel; A. P. Combs, Australian Navel, Mediterranean Sweet, Malta Blood, paper rind St. Michael; J. G. North, Mediterranean Sweet; Cover & McCoy, Washington Navel, Mediterranean Sweet; E. W. Cover, Washington Navel, paper rind St. Michael, Mediterranean Sweet; L. W. Foster, paper rind St. Michael; A. Kleinschmidt, Washington Navel; C. A. Tinker, Washington Navel, Australian Navel, Malta Blood, Mediterranean Sweet; C. R. Wilkes, paper rind St. Michael, Mediterranean Sweet; S. R. Magee, Malta Blood; Shugart & Waite, Australian Navel, Mediterranean Sweet, Malta Blood, paper rind St. Michael; A. L. Whitney, paper rind St. Michael, Malta Blood; W. A. Hayt, Malta Blood; S. H. Ferris, Malta Blood, Australian Navel; A. J. Twogood, Mediterranean Sweet; Rev. C. F. Loop, Pomona, Mediterranean Sweet; Charles Weile, Pomona, Mediterranean Sweet and Malta Blood; J. S. Harvey, San Diego, Malta Blood, Mediterranean Sweet; D. C. Twogood, paper rind St. Michael; D McRae, San Diego, Malta Blood, Australian Navel, paper rind St. Michael; Ira Floyd, San Diego, Australian Navel; W. C. Kimball, National City, Australian Navel; James Courier, paper rind St. Michael; J. C. Frisbee, San Diego, paper rind St. Michael; G. R. Hinde, Anaheim, Mediterranean Sweet; G. B. Adams, San Gabriel, Australian Navel, paper rind St. Michael, Mediterranean Sweet.

PREMIUMS.—Best Washington Navels; James Bettner; second, J. E. Cutter; best Australian Navel, James Bettner; second, Shugart & Waite; best Malta Blood, C. H Tinker; second, S. H. Ferris; best paper rind St. Michael, Shugart & Waite; second, Swett & Norcross; best Mediterranean Sweets, Swett & Norcross, second, Cover & McCoy. Committee: H. B. Everest, H. M. Streeter, Mr. Roe.

CLASS 12.—Best display of lemons.

ENTRIES.—B. B. Chandler, Lisbon; Dr. Ball, Lisbon; O. T. Johnson, Lisbon; O. Johnson, Lisbon; G. W. Garcelon, Lisbon; S. R. Magee, Lisbon and Seedling; S. Richardson, Lemon of Genoa and Sicily; J. E. Keith, Lisbon; P. D. Cover, varieties; W. N. Mann, Lisbon; Mrs. A. L. Eastman, Sweet Rind; G. B. Adams, San Gabriel, display Sweet Rind, Alameda, Florida, Lisbon and Eureka; Shugart & Waite, Eureka, Lisbon, Sweet Rind, Sicily; D. C. Twogood, Lisbon; O. T. Johnson, Lisbon; E. Owens, San Diego, Australian.

PREMIUMS.—First, P. D. Cover; second, G. W. Garcelon; honorable mention of the exhibit of E. Owens, of San Diego, and S. Richardson, of San Gabriel. Committee: J. G. North, E. F. Hubbard.

CLASS 13.—Best lemon.

ENTRIES.—Mrs. S. LaRue, Lisbon; H. J. Rudisill, Eureka; Jas. Bettner, Naples; W. B. Russell, Lisbon and Eureka; E. Hart, Lisbon and Sweet Rind; J. E. Cutter, Lisbon and Eureka (lime root); E. Caldwell, Lisbon; H. A. Puls, Sweet Rind; H. A. Westbrook, Lisbon; B. F. White, Lisbon and Eureka; W. R. Russell, Lisbon; H. P. Keyes, Lisbon; D. H Burnham, Lisbon; Mrs. S. Hale, Lisbon; D. Battles, Lisbon; G. W. Garcelon, Lisbon; S. Richardson, San Gabriel, Lemon of Genoa; P. D. Cover, Cover's Favorite; M. B. Ogden, Lisbon; A. B. Derbey, Lisbon and Sweet Rind; T. W. Cover, Sweet Rind; Cover & McCoy, Lisbon; A. Kleinschmidt, Lisbon; S. W. and C. Hollis, Lisbon; S. R. Magee, Lisbon; Shugart & Waite, Eureka; S. H. Ferris, Lisbon; A. J. Twogood, Lisbon; E. J. Davis, Lisbon; Mrs. G. M. Cunningham, Australian; Dr. J. Jarvis, Lisbon; J. S. Harvey, San Diego, Australian; W. C. Kimball, San Diego, Seedling; H. M. Higgins, San Diego, Bonnie Brae; J. Currier, Louisiana Seedling; G. R. Hinde, Anaheim, seedling; Wm. Niles, Los Angeles, seedling; Ellwood Cooper, Santa Barbara, Sicily; G. C. Swan, San Diego, Olivia.

PREMIUMS.—First premium to Shugart & Waite for the Eureka; second, to Cover & McCoy, for a Lisbon. Before making this report, the committee intended to make acid tests of some of the best lemons on exhibition, but the Fair Association has appointed an advisory committee, consisting of G. W. Garcelon, H. J. Rudisill and L. C. Waite, to act with the lemon committee, consisting of L. M. Holt, W. N. Mann and Thos Hendry, to make an exhaustive examination of the entire lemon question. L. M. Holt, Chairman.

CLASS 14.—Display of limes.

ENTRIES.—J. H. Smith, O. Johnson, S. Richardson, S. R. Magee, D. C. Twogood, E. Aylsworth, T. W. Cover, Dr. Ball, G. W. Garcelon, P. D. Cover, Shugart & Waite, E. Owens, P. Tomeny.

PREMIUMS.—The following entries as being the best on exhibition: P. D. Cover, J. H. Smith, P. Tomeny, O. Johnson, D. C. Twogood, T. W. Cover. The committee unanimously decided that P. D. Cover is entitled to the first premium, and Dr. S. R. Magee to the second premium, although it was hard to decide between those of J. H. Smith, T. W Cover and S R. Magee for the second prize. The exhibit of P. Tomeny, San Diego, was good, being uniform in size and color, but small. The display of S. R. Magee consisted of the largest limes on exhibition, but were slightly speckled, injuring their appearance. Committee: Ira D. Haight, D. T. Russell, Robt. Hornbeck.

CLASS 15.—Raisins, currants, figs, citron, preserved lemon.

ENTRIES.—Mrs. S. LaRue, Muscat raisins; J. E. Cutter, Muscat raisins; E. Caldwell, Muscat raisins; A. P. Combs, Muscat raisins; D. Battles, Muscat raisins; S. Richardson, citron and lemon peel; R. McPherson, Orange, Muscat Raisins, Sultanas, Zante currants, one box single clusters; John Kratzmeyer, Muscat raisins; H. L. R. Stiles, Muscat raisins; Miss I. M. Burnham, figs; W. H. Burnham, figs; E. W. Holmes, Muscat raisins and Zante currants; S. Richardson, citron; George C. Swan, San Diego, figs; G. R. Hinde, Anaheim, Muscat raisins, figs.

PREMIUMS.—Your committee was very much pleased with the exhibit of raisins, and considers it much the finest ever held in the State, both as to quality and style of packing. Best Muscat raisins, McPherson & Bros., of Orange; second, E. Caldwell, Riverside; third, McPherson & Bros., Orange. Best Sultanas, McPherson & Bros., Orange. Best Zante currants, E. W. Holmes, Riverside; second, McPherson & Bros., Orange. Best figs, Miss I. M. Burnham, Riverside; second, G. R. Hinde, Anaheim; best preserved citron, S. Richardson, San Gabriel; best preserved lemon peel, S. Richardson. Recommended special premium to raisins of 1879, by H. A. Westbrook. Committee: G. P. Rixford, L. W. Foster, W. J Norcross, James Boyd.

CLASS 16.—Olive oil, pickled olives, pickled limes.

ENTRIES.—Mrs. E. E. Rudisill, pickled limes; C. F. Loop, Pomona, pickled olives; E. W. Holmes, pickled olives; Geo. C. Swan, San Diego, pickled olives and pickled limes; F. A. Kimball, National City, pickled olives; Ellwood Cooper, Santa Barbara, olive oil.

PREMIUMS.—Olive oil, Ellwood Cooper, Santa Barbara; pickled olives, F. A. Kimball, San Diego; pickled limes, Mrs. E. E. Rudisill.

CLASS 17.—Fresh grapes, walnuts and almonds.

ENTRIES.—J. H. Smith, almonds; E. Caldwell, English walnuts; W. R. Russell, English walnuts; J. H. Fountain, fresh grapes; G. W. Garcelon, almonds; W. N. Mann, fresh grapes; F. H. Wales, almonds; D. A. Shaw, Lugonia, almonds; Shugart & Waite, English walnuts; A. D. Haight, English walnuts and almonds; A. R. Meserve, Pomona, almonds; R. W. Waterman, almonds; W. H. Niles, Los Angeles, a monds, English walnuts;

PREMIUMS.—Best fresh grapes, W. N. Mann, Riverside; second best, J. H. Fountain. Best almonds, A. R. Meserve, Pomona; second best, R. W. Waterman. Best English walnuts, Wm. Niles, Los Angeles; second best, same. Committee: Abram Hoag, Frank A. Kimball, A B. Bliss.

CLASS 18.—Winter apples and pears.

ENTRIES.—G. W. Garcelon, apples; S. H. Ferris, apples; E. Steele, San Diego, apples.

PREMIUMS.—Best, E. Steele, San Diego; second best, I. C. Haight, Riverside. Committee: H. A. Westbrook, John J. Hewitt, Jas. Boyd, H. Phillipe.

CLASS 19.—Preserved fruit, jellies, etc.

ENTRIES.—Mrs. Jas. Bettner, apricots, blackberries, crab-apples, pears, peaches, orange marmalade, grape jelly and blackberry jelly; M. V. Wright, pears; J. H. Fountain, apricots, peaches, blackberries and pickled figs; Mrs. G. W. Garcelon, Bartlett pears, Seckel pears, Lemon cling peaches, White cling peaches, plums, apples, quinces, apricots, apricot marmalade, quince jelly; S. Richardson, orange marmalade; W. N. Mann, Apricots; Mrs. W. H. Burnham, display fruit in glass, and jellies; Mrs. D. C. Twogood, orange, lemon and apple jelly; Mrs. Merica Hill, orange jelly.

PREMIUMS.—Best display of fruit in glass, Mrs. W. H. Burnham; second best, Mrs. G. W. Garcelon. Best preserved fruit, Mrs. Jas. Bettner; second best, Mrs. M. V. Wright. Best display of jellies in glass, Mrs. W. H. Burnham; second best, Mrs. D. C. Twogood. Best orange jelly, Miss Merica Hill; second best, Mrs. W. H. Burnham. Best orange marmalade, S. Richardson, San Gabriel; second best, Mrs. Jas. Bettner. Honorable mention to W. N. Mann, for preserved apricots in glass. Committee: E. G. Brown, S. McCoy, L. G. Swett, E. Rosenthal.

CLASS 20.—Dried fruit.

ENTRIES.—J. C. Cutter, peaches; J. H. Fountain, apricots and peaches; D. Battles, apples; Mrs. G. W. Garcelon, apples, plums, nectarines and peaches; W. H. Burnham, apples; G. R. Hurde, Anaheim, peaches and apples.

PREMIUMS.—Apricots, Dr. J. Jarvis; peaches, J. E. Cutter; apples, G. R. Hinde, Anaheim; pears, Mrs. E. H. Henderson. Committee: S. McCoy, E. L. Seger, L. G. Swett.

CLASS 21.—Flowers.

ENTRIES.—Mrs. G. W. Garcelon, Mrs. W. P. Russell, Mrs. James Bettner, Mrs. W. H. Burnham.

PREMIUMS.—First, to Mrs. G. W. Garcelon; second, to Mrs. James Bettner; honorable mention, Mrs. W. P. Russell. Committee: D. Battles, W. Chaffey, Geo. Leach, G. D. Cunningham.

MISCELLANEOUS.—M. V. Wright, Japanese persimmons, pomegranates; E. Caldwell, smilax; J. C. Haight, apples; H. A. Westbrook, raisins, crop of '79; J. H. Fountain, dried figs, Zante currants; G. W. Garcelon, loose figs; Miss I. M. Burnham, raisins, crop of 1880; D. A. Shaw, Italian chestnuts; A. D. Haight, jujube; Mrs. J. C. Carr, silk and silk products; G. R. Hinde, Anaheim, peanuts; Edwin C. Drake, shipping box for oranges and lemons; Pasadena Packing company, display of canned goods.

REPORT.—Japanese persimmons, by M. V. Wright; sample on exhibition is in perfect state of preservation and rich flavor. Smilax, by E. Caldwell, shows wonderful growth, and as fine a specimen as one finds in hothouses in large cities. Italian chestnut; not perfect specimens, being past their prime, but show good size, and that the climate will produce them successfully. Jujube, A. D. Haight; fine specimen, which shows the fruit can be successfully produced here. Silk, in the different stages of culture from the egg to the wound skeins, showing that the producer understands the culture, and that the climate is propitious for this branch of industry, giving a veritable proof of the sagacity of Provost in selecting southern California as best adapted to the growth of silkworms and the manufacture of silk; the association is under obligations to Mrs. Carr for the interest manifested, and recommend an award of $15. Peanuts, G. R. Hinde, Anaheim; splendid specimens, very large and full meated; good, rich flavor. Specimen of patent fruit box, Edwin Drake: main box sides, 12 inches inside; length, 24 inches, with projecting ends, intended to admit air when filled with fruit for shipping; it is new to the committee, and they think it will supersede the old method. Canned goods, Pasadena Packing company; an assortment of canned and bottled fruits, of which, upon opening, we find the fruit full size, beautiful color and rich in flavor, equal to any we have ever tasted. Committee: S. C. Evans, C. W. Filkins, James H. Benedict, C. E. Packard, E. P. Moody.

Thanks to Manager and Committees.

The Executive Committee, at a meeting held Saturday, unanimously passed the following resolution:

Resolved, That the thanks of the Riverside Citrus Fair Association are due and are hereby tendered to H. J. Rudisill for the able manner in which he has filled the arduous position of manager of the fourth annual fair, and thanks are also given to the ladies and gentlemen composing the working committees, who have done so much to make this fair so complete in every department.

Cost of an Orchard in Riverside.

Following is a brief statement of the cost of a ten-acre orchard and vineyard in Riverside, and taking care of the same for three years, after which the income will more than cover current expenses.

The original cost of the land suitable for citrus fruits and raisin grapes will be from $150 to $250 per acre, situated on established avenues and in the midst of valuable improved places. With each acre of land the purchaser gets one share of stock in the Riverside Canal company, giving *pro rata* ownership in canals, with water right, the company delivering the water on the land.

Ten acres of land, at $200 per acre	$2,000
Plowing, levelling, putting in order, planting and taking care of place first year, $25 per acre	250
Cost of trees and vines assorted, as are usually used, $50 per acre	500
Ditching and trenching (on place) second and third years, at $15 per acre per annum	300
Water for three years at $2.50 per acre per annum.	75
Interest on purchase price of land three years at ten per cent. per annum	600
Cost of orchard three years old	3,750
Cost per acre	375

—*Riverside Press.*

The King Orange.

EDITORS PRESS:—In answer to your request, I send you the following note on the King orange, of Cochin China, which I am now growing: The plants were obtained from the Botanical Gardens at Sagon, through the kindness of the Hon. John A. Bingham, U. S. Minister to Japan, and Mr. R. N. Ballay, Charge d'Affairs of France in Japan. These oranges are said to be by far the finest oranges grown in any country, and it is with great difficulty that the orange can be had to take out of the country. These plants came to me having the seal of the government upon the package; so there can be no doubt as to the genuineness of the orange.

Riverside. S. R. MAGEE.

CONTRACTS for Star routes service in the Pacific States and Territories, which were let under Gen. Brady for $2,844,165, have just been relet for $1,125,139.

RIVERSIDE COLONY LANDS.

FIVE AND TEN-ACRE TRACTS IN THE

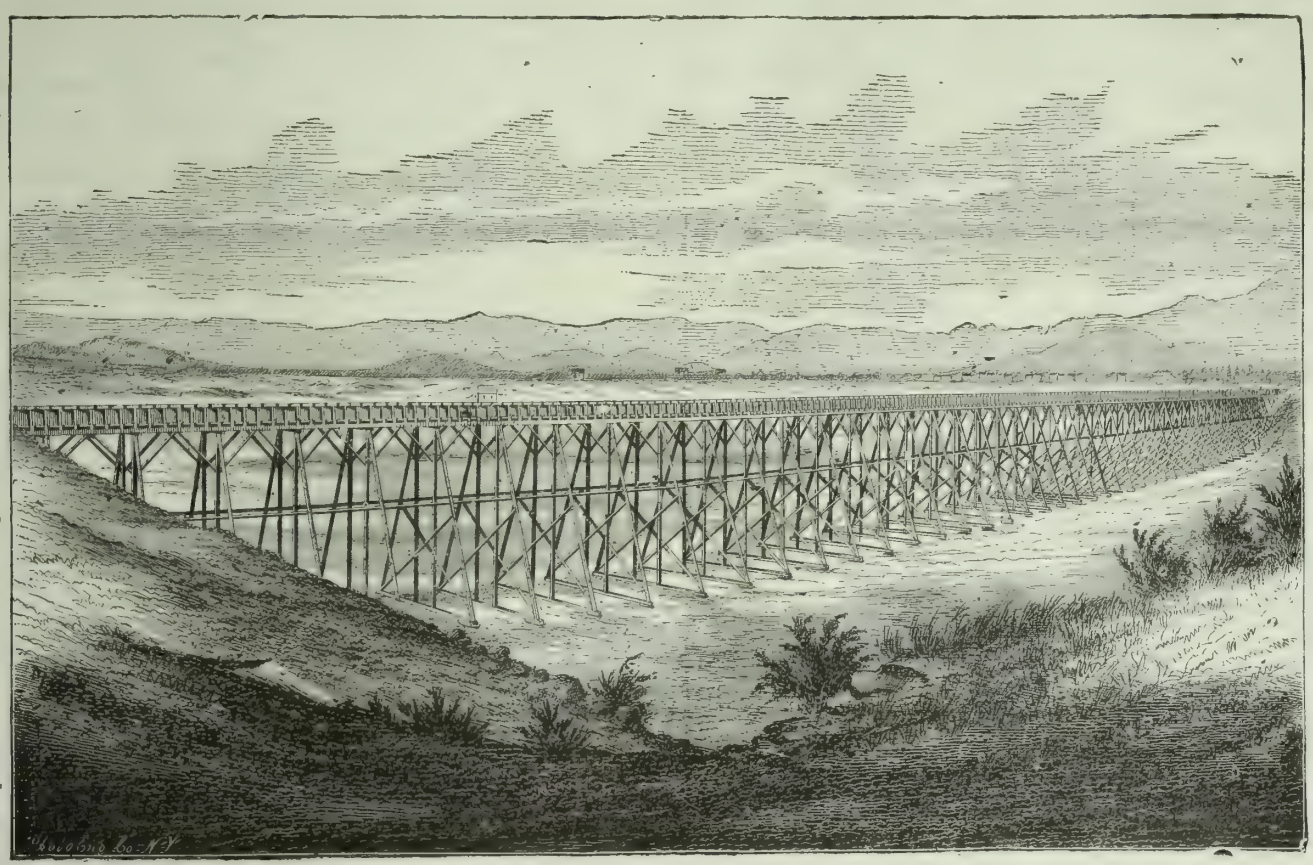
VILLAGE OF ARLINGTON

Comprising one mile square, on the celebrated Magnolia and other avenues; the choicest locations in the whole Valley.

Also, a quantity of other lands scattered throughout the valley,

IMPROVED AND UNIMPROVED.

STREETS ALL GRADED, AND, LAND LINES Planted to CYPRESS.



IRRIGATING FLUME, OR ACQUEDUCT, AT RIVERSIDE, CAL

All these lands are surrounded by

Valuable Improvements,

Many of the residences costing from $5,000 to $15,000 each.

PRICES FROM $150 to $250 PER ACRE,

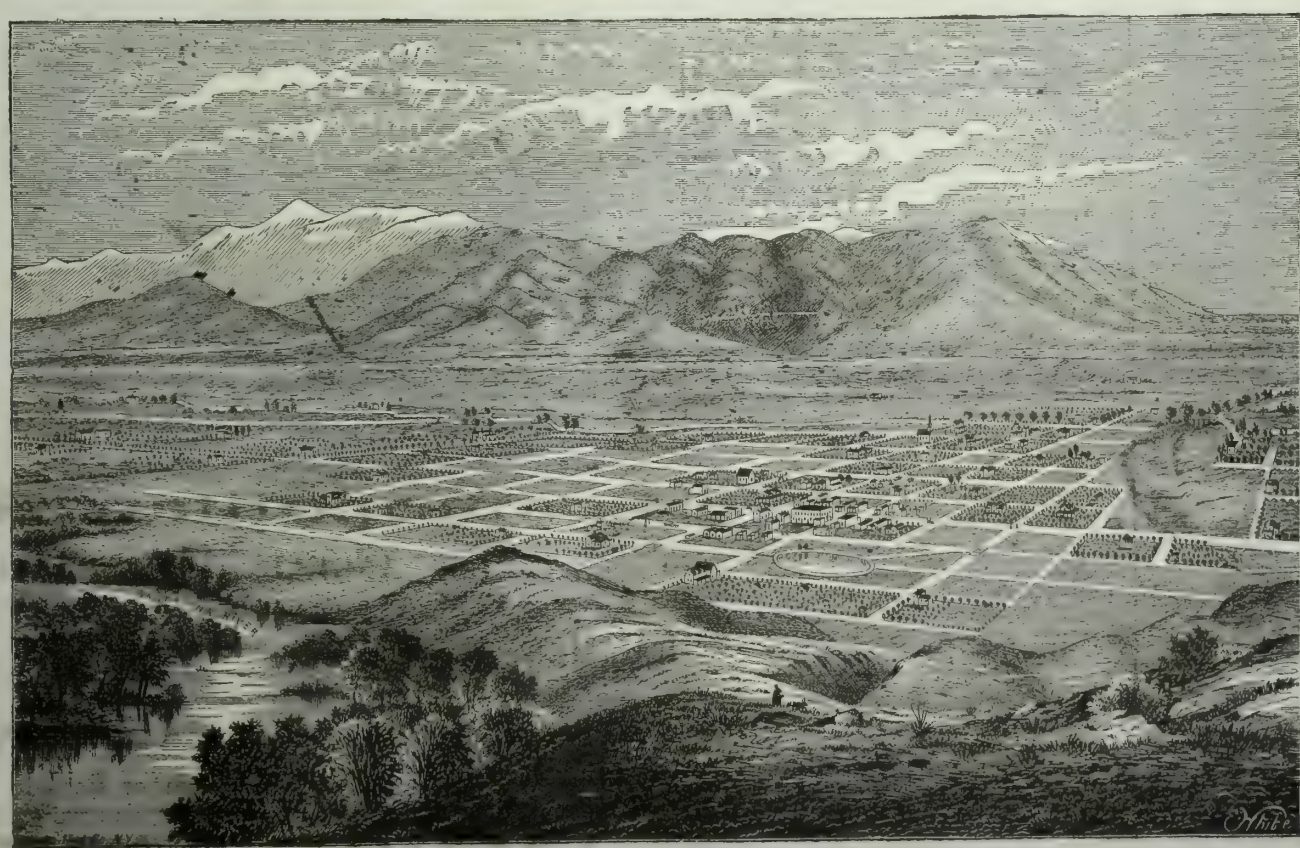
With one share of canal stock attached to each acre, giving perpetual water right (with water delivered to lands), and ownership in canals in pro rata proportion to lands that can be irrigated.

Terms to suit Purchasers, from One to Five Years.

POPULATION ABOUT 2,000.

CHURCHES AND SCHOOLS Well established.

Railroad Facilities EQUAL To any in the State.



VIEW OF RIVERSIDE AND THE MOUNTAINS LYING TO THE EASTWARD.

CLIMATE As Near Perfect AS MAY BE.

THE SOIL IS UNEQUALED, WITH UNQUESTIONED Water Supply.

The Quality of Citrus Fruits and Raisins Universally Acknowledged as Superior.

COME AND SEE FOR YOURSELVES, OR ADDRESS

S. C. EVANS, President, • • Riverside, Cal.

Imported vs. Riverside Oranges.

[From the Riverside *Press.*]

H. B. Everest, President of the Riverside Citrus Fair Association, some time since sent to the firm of Brown & Co., of Boston, for some fine imported oranges, to have them present at the Citrus fair, but on account of a delay they did not arrive until last Saturday. On Monday evening the Executive Committee of the fair appointed a committee of visitors to take these samples and compare them with Riverside fruits. The committee consisted of F. G. King, of Denver, Colorado; E. F. Hubbard, of New York; C. O. Perrine, of Chicago, Illinois, and A. T. Dewey, of San Francisco. The committee met at the residence of H. B. Everest, who invited in the following gentlemen to also make a comparison of the fruits: A. S. White, James Bettner, B. D. Burt, H. J. Rudisill, G. W. Garcelon and L. M. Holt.

The imported fruit was not as large and fine looking as the Riverside fruits were, after making allowance for the shrinkage of the fruit from sweating. The rind was rather thin and of fine texture; the pulp was generally fine textured, and the taste was sweet, but lacked that high flavor and crispness for which the Riverside fruit is so noted. The Messina orange, compared with the Mediterranean Sweet, contained fourteen seeds, while the latter had but one.

The committee, after a careful examination of the fruit, made the following report, which was endorsed by those present:

Report of Committee.

The undersigned, having been requested by the Executive Committee of the Riverside Citrus Fair Association to make a careful test and render an unprejudiced opinion on the comparative merits of Riverside and imported oranges, respectfully report as follows:

We have had placed before us samples of several varieties of imported oranges, forwarded directly by express, on arrival of vessel in the port of Boston, by Brown & Co., March 16, to the Executive Committee. All varieties received were marked "Fine."

The Valencia, classed as No. 1, was compared with the Washington Navel grown at Riverside.

The Palermo, as No. 2, with the Paper-rind St. Michael of Riverside.

The Messina, as No. 3, with the Riverside Seedling.

After giving the several varieties repeated samplings, with a fair consideration for the effect of transportation of the imported fruit, we consider the Riverside fruit decidedly more attractive in appearance, superior in flavor and richer in saccharine qualities.

Respectfully,

F. G. King, Denver, Colorado.
E. F. Hubbard, New York.
C. O. Perrine, Chicago.
A. T. Dewey, San Francisco.

Riverside Progress.

The Riverside *Press and Horticulturist* has displayed commendable enterprise in securing quite complete statistics of the progress of planting and production in the prosperous Riverside colony. We avail ourselves of a compilation of the results obtained, as follows:

Number of acres of irrigable land in hands of purchasers, 5,206.

Number of acres under cultivation, 4,326.

Seedling orange trees in orchard, 121,958; budded orange trees in orchard, 87,456; total orange trees in orchard, 209,414; bearing orange trees, 28,483; seedling lemon trees in orchard, 2,186; budded lemon trees in orchard, 17,768; total lemon trees in orchard, 19,954; bearing lemon trees, 8,401; lime trees in orchard, 8,655; olive trees in orchard, 2,980; apricot trees in orchard, 60,371; other deciduous fruit trees in orchard, 26,721; number of Muscat vines in vineyard, 482,852; other kinds of vines in vineyard, 13,183.

Estimate of total fruit product of the crop of 1881: Boxes of oranges, 9,555; boxes of lemons, 3,804; boxes of limes, 5,001; pounds of apricots, 292,463; pounds of peaches, 258,186; pounds of apples, 48,445; pounds of pears, 24,880; pounds of other deciduous fruits, 46,185; boxes of raisins, 23,791; pounds of grapes sold, 228,111.

The raisin crop will be found by converting the grapes sold for raisins, as many sold their crop for that purpose. The 228,111 pounds of grapes will make 3,802 boxes of raisins, allowing sixty pounds of grapes to the box of raisins. This makes the total raisin crop 27,593 boxes.

By making an estimate of the weight of the above fruit, we find the crop to amount to 2,322,449 pounds, or 1,161 tons. This makes 116 carloads, or over two carloads per week for the entire year.

The above table is incomplete, as it does not include all the fruit produced in the valley, and it is therefore safe to estimate the crop at 125 carloads for 1881 2.

It will be observed that only about one-tenth of the orange trees and a little over one-third of the lemon trees are as yet in bearing, and many of these bear very lightly, as the average yield per tree for the bearing orange trees is but about one-third of a box of oranges to the tree, and less than half a box of lemons to each, bearing lemon tree; whereas, these trees in full bearing will give from five to ten boxes to the tree, according to size and productiveness. In making reports this year our orchardists have classed a tree as bearing if it produced half a dozen oranges; hence the low average yield. When our 210,000 orange trees come into full bearing, and produce, say five boxes per tree, the total yield of oranges alone will be over 1,000,000 of boxes, equal to 40,000 tons or 4,000 carloads. What will be the production of Riverside valley ten years hence?

Regarding the raisin crop, we will say that we now have in round numbers half a million vines in the valley. These vines will yield, in full bearing, 20 lbs. to the vine, or 10,000,000 lbs. This amount of grapes will make, after throwing away the refuse grapes, one box of raisins for every 80 lbs. of grapes, or a total of 125,000 boxes of raisins, weighing, including boxes, 1,562 tons, equal to 156 carloads. In three years from the present time this yield will be reached, or in four years, at the outside.

The Riverside *Press* gives a long list of new buildings erected during the year in Riverside, and closes the showing as follows: Over eighty different buildings or substantial additions have been built during the past year. This does not include many improvements that have been made, such as painting, building of verandas and small additions, and the like, which would swell the total not a little. The list as given above shows a total of $140,225, which we think is an excellent showing for this valley.

The prospects now are that the coming year will be a busy one for our builders, and we confidently expect that the total amount expended in building will be even greater than during the past year.

Riverside Compliments.—When one receives such general kindness from many it is almost superfluous to individualize, but the writer cannot do less than return thanks for extra favors extended by Pres. S. C. Evans, G. W. Garcelon, A. S. White, E. M. Sheldon, T. Cover, A. J. Twogood, A. D. Haight, E. Caldwell and the editor of the Riverside *Press and Horticulturist.*

Dairymen's Reports.—We have received the pamphlet report of proceedings of the American Dairymen's Association from the Secretary, T. D. Curtiss, Syracuse, N. Y. Mr. Curtiss has brought out his report with commendable promptness and it has much of importance to dairymen everywhere. The report is sent to members free, and the cost of membership is one dollar per year. The American association is the pioneer dairy organization of this country, and the present is its 17th annual report. We have also received the fifth annual report of the New York State Dairymen's Association, from Hon. Josiah Shull, Secretary, Ilion, N. Y. It is full of suggestive points. There is no better investment a dairyman can make of a little money than to send for these Eastern dairy reports to see what progress the industry is making.

Chemistry of the Farm.—Orange Judd Co., 751 Broadway, New York, send us a copy of a neat little hand-book of agricultural chemistry, written by R. Warrington, F. C. S., who occupies an important position at Rothamsted, the estate made famous by the experimental work of Lawes and Gilbert. It contains an outline of the chemical principles which underlie farm practices and policies, and should be consulted by all who are relying upon growth of plant or growth of animal as the source of livelihood and competence. Many who have never enjoyed a course of instruction in chemistry can gain many useful truths from the "Chemistry of the Farm" by Warrington. For sale by A. L. Bancroft & Co., S. F.

Sweet Potato Growing.—A pamphlet of 58 pages on the growing of sweet potatoes has just been published by Orange Judd Co., 751 Broadway, New York. It is prepared by James Fitz, of Virginia, and contains full instruction for the growth of the sweet potato from starting the plants to harvesting and storing the crop. The practice is of course that followed in the Southern States, but it will found suggestive to growers everywhere.

Holland Cattle.—"Some Information Concerning the North Holland or Friesian Breed of Black and White Piebald Cattle" has just been issued by the Dutch-Friesian Association. It is edited by the Secretary, Mr. S. Hoxie, Whitestown, N. Y., and contains matter never before given to the American public. It will be found an interesting pamphlet to the stock grower.

The extension of the Utah and Northern railroad to Deer Lodge, M. T., has been begun.

American Driven Wells.

Attention is called to the advertisement in another column of Babcock, Howard & Co., in reference to the American driven well water supply system. These wells are in extensive use in all of the Eastern States, there being 750,000 of them in New York State alone. For obtaining at moderate cost an abundance of pure water they are what are needed in this State. Send for circulars. All letters of inquiry will receive prompt and courteous attention. No. 40 Merchants' Exchange, San Francisco.

BUSINESS MENTION.

Business Announcements of the following enterprising firms appear in the Advertising Department of "Orange Culture in California." They will be found mostly all located in Los Angeles and neighboring southern counties, and among the leading and best houses in their line, wherever situated.

HOWE & HALL, Commission Merchants and Dealers in California Produce, 408 and 410 Davis St, San Francisco.- Page 231.

DALTON & GRAY, Commission Merchants. Produce, Grain, Wool, Hides, Fruits, Etc. 404 and 406 Davis St., San Francisco.—231.

WOODHEAD & GAY, Wholesale Dealers in California Fruits, Nuts, Honey, Trees, Plants and Seeds, 40 and 42 Spring St., Los Angeles, Cal.—232.

THE QUEEN, Fashionable Boot and Shoe Store, 104 Main St., Los Angeles,.—232.

E. T. WRIGHT, County Surveyor, Room 3, Downey Block, Los Angeles, Cal.—232.

J. A VALDER, Dealer in Pictures, Frames, Window Cornices, Artists' Materials, Etc. No. 42 Spring St., Los Angeles, Cal.—232.

PRESS AND HORTICULTURIST, a Weekly Newspaper, published by L. M. Holt, at Riverside, Cal.—233.

PREUSS & PIRONI, Central Pharmacy. Pure Drugs, Medicines, Perfumeries, Etc. 21 Spring St., Los Angeles, Cal.—234.

SAMUEL MEYER, Crockery, Glassware, China, Cutlery, Britannia Ware, Lamps, Fancy Goods, Etc. 43 Main St., Los Angeles, Cal.—234.

S. HELLMAN, Grafting, Budding and Pruning Knives, Pruning Saws and Shears. 8 Spring St., and 95 Main St., Los Angeles, Cal.—234.

JACOBY BROS., Men's and Boys' Clothing, Furnishing Goods, Hats, Etc, Temple Block, Los Angeles, Cal.—235.

F. ADAM, Merchant Tailor Fashionable Styles and Reasonable Rates. 13 Spring St, Los Angeles, Cal—235.

A L. BATH, Wagon Maker, and Manufacturer of Los Angeles Gang Plow and Hollow-Tooth Harrows, 108 Spring St., Los Angeles, Cal.—235.

SEYMOUR & JOHNSON, Proprietors of the Grange Store. Groceries, Eggs, Cheese and Butter. 133 Main St., Los Angeles. Cal.—236.

COSMOPOLITAN HOTEL, Hammel & Denker, Proprietors. Los Angeles.—236.

W. C. FURREY, Ranges, Stoves and Hardware, 33 Spring St., Los Angeles.—236

J. R. McMANIS, Manager of the largest Carriage and Wagon Repository in California. Main St., next door east of Fashion Stables, Los Angeles, Cal.—237.

FIRST NATIONAL BANK OF LOS ANGELES, Capital Stock, $100,000; Surplus, $50,000. F. F. Spence, President; Wm. Lacy, Cashier.—238.

D. D BRUNK, Rustic Work, Lawn Furniture, Gates, Arbors, Etc. Address, Los Angeles P. O —238.

"THE O W. CHILDS NURSERY," Los Angeles, Cal. Trees of all kinds, worked from reliable sources.—238.

A. R. BOOTH, Manufacturer of "Booth's Sure Death" to Squirrels, Gophers, Birds, Mice, Etc. Eagle Drug Store, San Luis Obispo, Cal.—239.

COMPTON, KERR & McCOMAS, Real Estate Agents, Postoffice Building, Los Angeles, Cal.—239.

I. A. DUNSMOOR, Ladies' Fancy Goods, Gents' Furnishing Goods, Hats, Caps, and Fancy Articles, 25 Spring St., Los Angeles, Cal.—239.

B. F COULTER, Dry Goods and Men's Goods. Proprietor of Los Angeles Woolen Mills. 30 and 32 Main St., Los Angeles.—240.

D A. SHAW, Professional Budder and Grafter. Address, Los Angeles P O.—240.

JUDSON, GILLETTE & GIBSON, Law and Abstract Firm, Rooms 12, 13 and 14 McDonald Block, Los Angeles, Cal.—240.

FARMERS' AND MERCHANTS' BANK OF LOS ANGELES. Paid up Capital, $200,000; Surplus, $250,000. I. W. Hellman, Pres't; J. Milner, Sec'y—241.

PERRY, WOODWORTH & CO., Steam Sawing, Planing and Molding Mills, Lumber, Plaster, Etc. 76 Commercial St., Los Angeles, Cal.—241.

CHAS. W. DAVIS, Architect, Rooms 3 and 4, Downey Block, Los Angeles, Cal.—241.

N. C. CARTER, Homes in Sierra Madre Tract for Sale. Address, San Gabriel,.—242.

A. T. BELL, Saddles, Harness, Bridles, Whips, Etc. 115 Main St, opposite Court House, Los Angeles, Cal.—242.

PLATT & PAGE, Leading Jewelers, Watchmakers, Etc. Cor. Court and Spring Sts, Los Angeles, Cal.—242.

DEWEY & CO., Publishers of "Orange Culture in California," "Catalogue of European Vines," "Pacific Rural Handbook," "Fruit Growing in California," "Silk Culture," Etc. 252 Market St., San Francisco, Cal.—243.

REDLANDS COLONY, 150 Acres for Sale at $125 per acre. Address, Judson & Brown, San Bernardino, Cal —244.

C. N. EARL, Continuous Cement Concrete Pipe Machines, for making and laying Pipe for Subirrigation. Los Angeles, Cal.—245.

LOUIS J. STENGEL, Exotic Gardens and Nurseries; all kinds of Trees, Shrubs, and Plants. Los Angeles, Cal —246.

POULTRY AND STOCK BOOK, New Edition of over 100 pages, profusely illustrated. Price by mail 50 cents. For sale by Dewey & Co., 252 Market St, S. F. —246.

R BILLS, Freight and Truck Line. All kinds of Expressage and Hauling Done. No. 7 Market St, Los Angeles, Cal —246.

THE PACIFIC RURAL PRESS, Dewey & Co., Publishers, 252 Market St, San Francisco, Cal.—247.

ASHMEAD BROTHERS, Booksellers and Stationers. Publishers of Works on Florida and Orange Culture, 21 West Bay St., Jacksonville, Florida —248.

MRS N. S MONTAGUE'S Plymouth Rock Chickens, of the Keefer & Watson Strain Cor Adams and Main Sts, Los Angeles, Cal.—248.

H. J. WOLLACOTT, Wines and Liquors, Wholesale and Retail, 40 Spring St., Mohr Block, Los Angeles, Cal.—248.

HENRY HAMMEL A. H. DENKER.

Cosmopolitan Hotel.

LOS ANGELES, CALIFORNIA.

HAMMEL & DENKER, - - - - Proprietors.

Rates, $2.00, $2.50 and $3.00 Per Day,

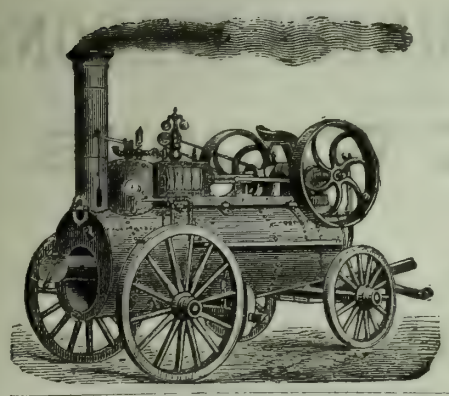
According to Location of Room.

IMPORTANT!!!

That the public should know that for the past ELEVEN years our SOLE BUSINESS has been, and now is, importing (OVER 100 CARLOADS) and breeding improved Live Stock—Horses, Jacks, Short Horns, Ayrshires and Jerseys (or Alderneys) and their grades; also ALL THE VARIETIES of breeding Sheep and Hogs. We can supply any and all good animals that may be wanted, and at VERY REASONABLE PRICES and on CONVENIENT TERMS. Write or call on us. LICK HOUSE, San Francisco, Cal., October 22, 1881 PETER SAXE & HOMER P. SAXE.

PETER SAXE & SON

EVERY PRACTICAL FARMER KNOWS THESE FACTS!



RICE'S
STRAW-BURNING ENGINE

Is the only Reliable Straw-Burning Engine Manufactured.

It has this season an improved Safety Valve, and many important improvements have been made in the construction of the Boilers and Running Gear. The Cylinders are made larger this season, thus increasing their Power, while no addition has been made to the price. Rice's Engine is without doubt the safest and most powerful Engine in existence.

THE "GOLD MEDAL" SEPARATOR!
The Acknowledged Perfection of Threshers

Requires no encomiums. Ask your neighbor and he will tell you just what we claim for it, that **it saves grain where other Threshers waste it, and it will do more work in a given time than any other Thresher made.**

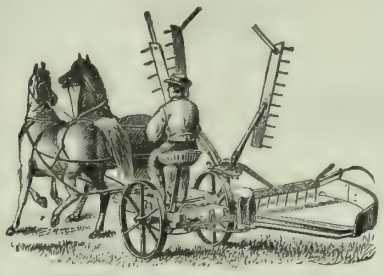
We have an agent in every principal town in the State, and parties desiring to purchase should make arrangements immediately, as the probability is we shall be hard pressed to fill orders.

THE "BUCKEYE" MOWERS
AND
"BUCKEYE"
SELF-RAKE REAPERS

Are the Acknowledged Best Harvesting Machines in the **WORLD.**

An ordinary advertising space is insufficient to contain all the points of Superiority over others. Send for Catalogue giving full particulars.

TAYLOR SULKY RAKE.



"BUCKEYE" SELF-RAKE REAPER.

THE TAYLOR RAKE

Is the Acknowledged

"KING OF RAKES!"

Which is proven by the fact of its having received more than **3,000 First Prizes** and **Premiums** in the United States, and the only **SPECIAL MEDAL** awarded to Hay Rakes was given it at the **Centennial Exposition of 1876.**

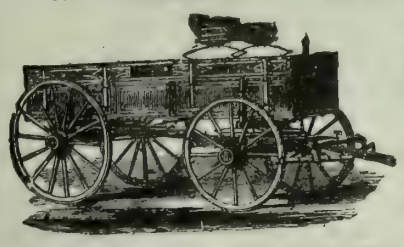
THE CELEBRATED
Schuttler Wagon

Is being manufactured to-day with the same care and precision as it always has been, which fact has gained for it a world-wide reputation for

STRENGTH, DURABILITY AND LIGHTNESS OF DRAFT.

The manufacturers, under their system of manufacture, are enabled to vouch for the perfection of their wagons in every particular, and consequently

We Warrant the Schuttler Wagons to be the best in the World.



The Schuttler Wagons for 1882, as they have always been, are still WARRANTED TO RUN LIGHTER AND WEAR LONGER THAN ANY WAGONS IN AMERICA.

Those sent to this coast are built especially for the trade of California, and the material used and mode of construction especially adapts them to withstand the dry climate of the interior, which is so destructive to the other kinds of wagons in the market.

EXTRA PARTS FOR MACHINERY.

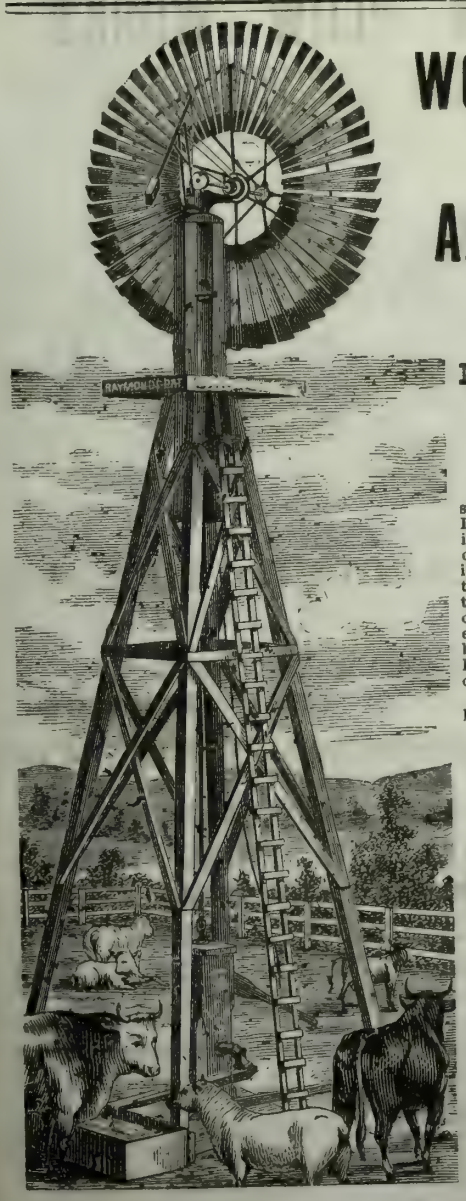
We have Extra Parts for all the leading Farming Machinery sold on the Coast and are enabled to supply Repairs for all kinds of Mowers, Reapers, Headers, Engines, Separators, Seed Sowers and Seed Drills, Horse Rakes, Hay Presses, Plows, Harrows, Cultivators, Windmills, etc. Also carry the largest stock of Hardware on the Coast.

Hodges' Haines' and Hodges' Case's Headers

HAVE 36 AND 40-INCH DRAPERS.

And many important Improvements for this year, and excel any ever before made. The Hodges' maintain their reputation as the BEST IN THE WORLD.

MARCUS C. HAWLEY & CO., San Francisco.



WOODIN & LITTLE'S
IMPROVED
Althouse Vaneless
WINDMILL.

Is the only Perfect Self-Regulating Mill that will take entire control of itself in a Gale.

All who have used it have united in saying that it has superior merits, and is the best Windmill now in use. Its chief points of merit are: Its ability to take care of itself in the severest gale—being so arranged that no increase of wind increases its speed. The material used in its construction and the quality of workmanship being the best. The simplicity of its machinery making it next to impossible for it to get out of order, therefore, when once erected, no further expense is attached to it. The ease with which it runs—starting at the least perceptible breeze, and never stopping unless the wind ceases to blow. It is an ornament to any place, running smoothly, without noise.

It has been improved from year to year, until it is superior in all points of excellence.

Send for Catalogue and Prices of Mills.

We are Manufacturers of

THE IMPROVED ALTHOUSE

WINDMILLS AND TANKS.

Also, Importers of

PUMPS, PIPE,

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BRASS GOODS, LAWN MOWERS, HOSE, GARDEN TOOLS, Etc.

WOODIN & LITTLE,

No. 421 Market Street, SAN FRANCISCO, CAL.

NOTICE!
To Farmers and Stockmen!

You well know the virtue of our H. H. H. Horse Liniment. It has been used for years throughout the entire Pacific Coast, and has been found without an equal as a Liniment for man and beast. We have now added to our list of medicines "The H. H. H. Hoof and Healing Ointment," and the "H. H. H. Condition Powders." No stock-raiser, once having used our medicines will ever be without them in the house. For sale everywhere.

Trade } H H. H. {Mark	Trade } H. H. H. {Mark	Trade } H. H. H. {Mark
Hoof and Healing Ointment	Horse Liniment	Condition Powders.
For Brittle Hoofs,	The most effectual	For Inward Strains,
Fever in Feet,	liniment ever used for	Hide Bound,
Founder,	Ringbone,	Loss of Appetite,
Contracted Hoofs,	Spavin,	Yellow Water,
Sand Cracks,	Sweeney,	Poll Evil,
Quarter Cracks,	Callous Lumps,	Scratches,
Collar Galls,	Old Sores,	Mange,
Harness Galls,	Sprains,	Rheumatism,
Scratches,	Stiff Joints,	Epizootic,
Mud Fever.	Bruises,	Coughs,
Etc., Etc.	Windgalls, Etc.	Colds, Etc.
H. H. MOORE & SON, Sole Proprietors.	H. H. MOORE & SON, Sole Proprietors.	H. H. MOORE & SON, Sole Proprietors.

GARDEN HOSE.
Cotton Rubber-Lined.

BEST IN THE WORLD FOR

Durability and Strength.

Every foot guaranteed. Try it. Also Cotton and Linen and Fire Hose of all sizes.

W. T. Y. SCHENCK, 36 California St., S. F.

A. W. SANBORN & CO.,

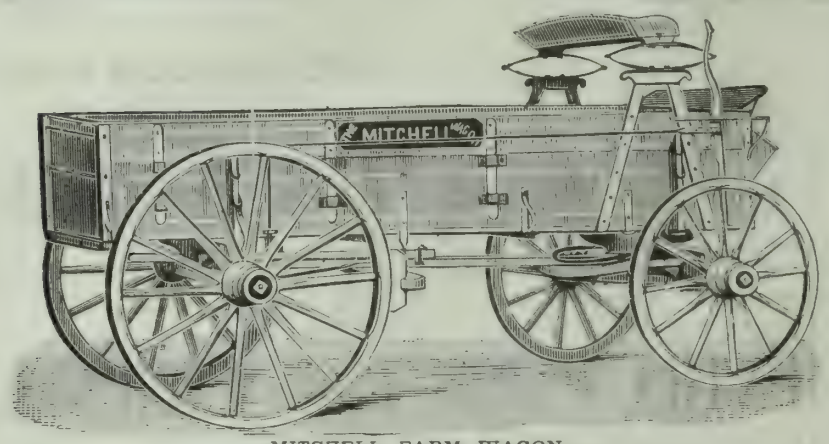
Manufacturers and Dealers in

CARRIAGES, EXPRESS, THOROBRACE & BUSINESS WAGONS,

From their own Manufactory in Manchester, N. H. Also Agents for the

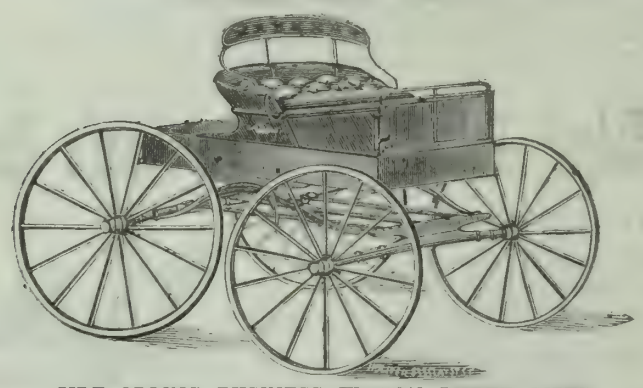
MITCHELL FARM AND SPRING WAGONS.

Nos. 24 and 26 Beale Street, San Francisco.

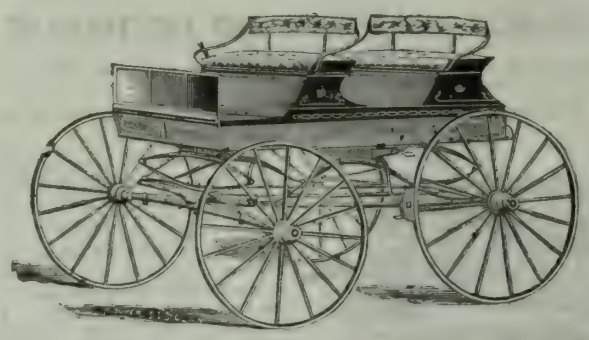


MITCHELL FARM WAGON.

THOROBRACE WAGON—TWO OR THREE SEATS—THREE SIZES.



SIDE SPRING BUSINESS WAGON—THREE SIZES.



FOUR SPRING WAGON FOR RANCH AND FAMILY USE—THREE SIZES.

PHŒNIX ASSURANCE COMPANY,

Of London, England. Established 1782.

BRITISH AMERICA ASSURANCE CO.

Of Toronto, Canada. Established 1833.

WESTERN ASSURANCE COMPANY,

Of Toronto, Canada. Established 1851.

BUTLER & HALDAN, Gen'l Agents for Pacific Coast,

413 California St., San Francisco.

City Agents: { ELI MARKS, W. H. BREMER.

Special Agents: { F. K. RULE. S. E. STRICKLAND.

Farm Property, Grain in Field or Warehouse, at Moderate Rates.

WOODIN & LITTLE,

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Manufacturers of the

NEW IMPROVED

Althouse Vaneless Windmills.

Importers of

PUMPS

Of every description,

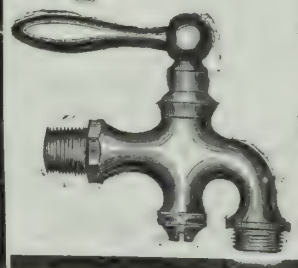
For Hand, Windmill and Power Use.

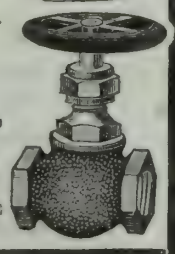
BRASS GOODS,

HOSE, TANKS,

Garden Tools, Etc.

SEND FOR NEW CATALOGUE AND PRICES.





Engraving. Superior Wood and Metal Engraving, Electrotyping and Stereotyping done at the office of the MINING AND SCIENTIFIC PRESS, San Francisco, at favorable rates.

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Willow Dale, Residence of N. C. Carter, San Gabriel, Los Angeles Co., Cal.

Mr. Carter offers this remarkably fine homestead for sale in the following language: "Having decided to remove to the Sierra Madre tract, I offer my place, "Willow Dale," for sale cheap. The place adjoins Gen. Stoneman's fine estate and the Oak Knoll property. It contains 17 acres, with vineyard, orange grove, and a large variety of other trees in full bearing; 2 acres of alfalfa; 3 fish ponds, etc. The water, of which there is a large supply, raises on the land and is piped throughout the place. No place in San Gabriel valley is more sheltered or has less frost.

The Illustration.

The writer well remembers a pleasant visit of several days at the above-named place, in 1879, an engraving of which is published herewith, neatly giving the general "lay of the land," without being entirely *fac simile* in detail. It is beautifully located, and a very valuable place—such, in fact, as is rarely found in the market.

Some years ago the following

Description

Appeared in the leading editorial columns of the Los Angeles *Daily Evening Express:*

It was our fortune, during a ramble through San Gabriel valley, the other day, to step at "Willow Dale," the home of Mr. N. C. Carter. Mr. Carter already has one of the cosiest and best-kept homes in the valley, but we have an idea that it is yet only a hint of what it will be five or six years hence, if the same care and good taste are continuously bestowed upon it which mark its appearance now. Mr. Carter has seventeen acres, covering a portion of the foothills and extending into the valley. The place adjoins that of Gen. Stoneman, and is on the same range of hills upon which are located the residences of Col. Kewen, Mrs. Wilson, J. de Barth Shorb and E. J. Baldwin. The peculiar advantages of these elevated sites is that the hills seem to be literally running over with water. It bubbles up in cienegas along the range and all that is required of the owners is to dig out reservoirs and store it, preparatory to an easy distribution over the valley below. Mr. Carter has several cienegas of this description on the more elevated portions of his place, and, besides, owns a water-right from Gen. Stoneman's ranch. The supply, altogether, we should judge, ought to be sufficient to water six farms like Willow Dale. The very top-most pinnacle of the hill overlooking the place Mr. Carter has sown to oats, and the moisture is sufficient to mature the crop finely.

On the side of the acclivity, at sufficient altitude to overlook the whole valley, is located Mr. Carter's house, a two-story frame structure, painted white, and having about it the air of thrift, neatness and good order. Below the residence, a tract of about seven or eight acres of the valley is filled with vines, being a portion of the original Stoneman vineyard. These vines are all in bearing. There is a young orange orchard on the place which, we judge, will begin to fruit in a year or two. But the great charm of Willow Dale will eventually lie in a series of walks which Mr. Carter is laying out along the hills, back of his residence. These walks will wind in and out among luxuriant growths of poplar, live-oak and willows. Rustic seats in shady nooks will invite to repose; rustic bridges will surmount little zanjas running out of the reservoirs or will lead over miniature canyons. The whole will have a sylvan air and a spice of nature's wildness about it, while at the same time the site commands a view of the valley below in its magnificent state of cultivation. This portion of the ranch will be on the park order, and, when Mr. Carter's ideas are carried out, we defy anybody to point out a more charming glen the world over. The walks are as yet only partially graded, and the rustic seats and bridges are in futurity; but, with the natural advantages at hand, the rest is of comparatively easy accomplishment. Even in its semi-wild state the hillside is charming.

Willow Dale is located about seven miles from Los Angeles city and from San Gabriel R. R. station some two and a half miles.

For further information concerning this property and the terms upon which it is offered for sale, intending purchasers are invited to visit the premises or address the proprietor, N. C. Carter, San Gabriel, Los Angeles Co., Cal.

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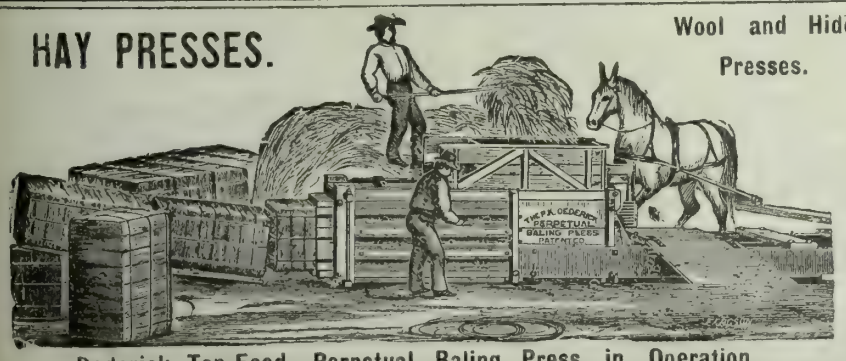

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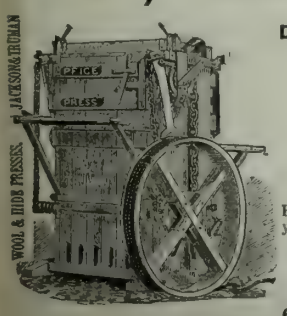

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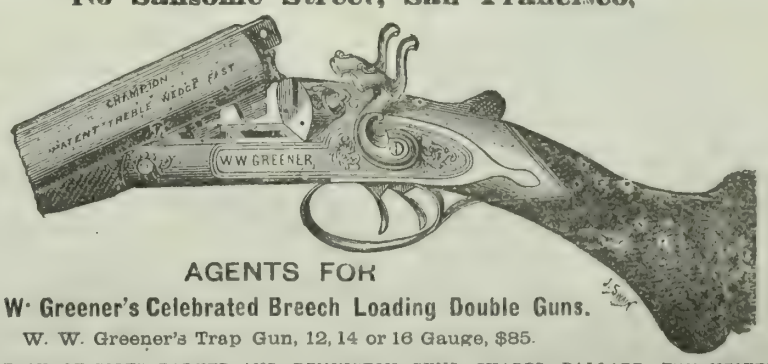

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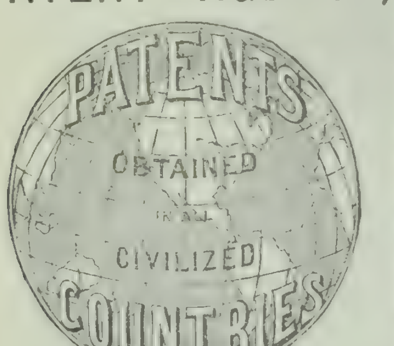

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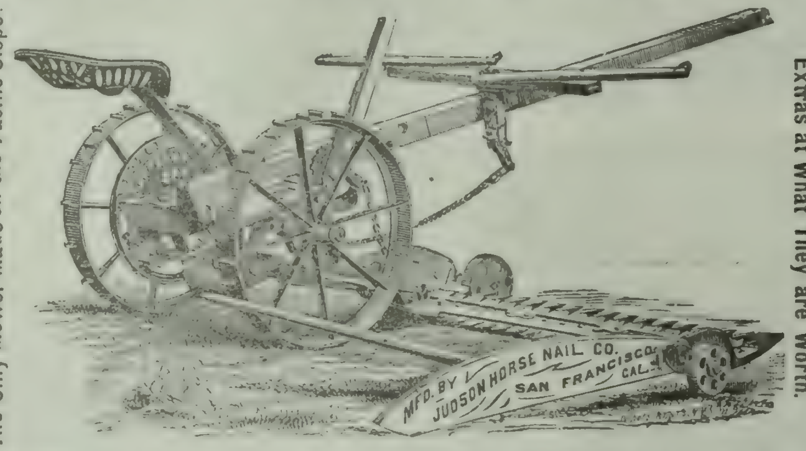

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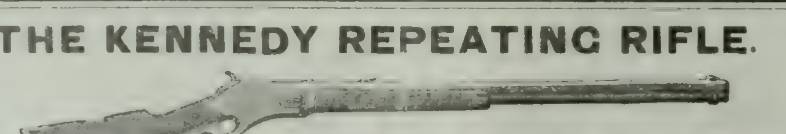

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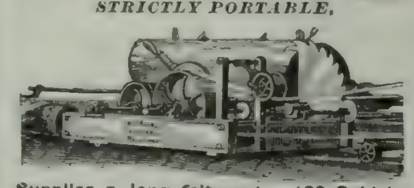

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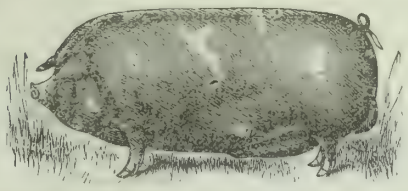

ELIAS GALLUP, Fanford, Tulare Co., Cal.

Breeder of pure bred Poland China pigs of the Black Beauty, Black Bess, Bismarck, and other noted families. Imported boars, King of Bonny View, and Gold Dust at head of the herd. Stock recorded in A. P. C. R. Pigs sold at reasonable rates. Correspondence solicited. Address as above.

LAUREL RANCH!

Thoroughbred
Spanish Merino
SHEEP.

We offer for sale 400 HEAD OF YOUNG EWES AND RAMS. Prices always reasonable and terms liberal. Quality and condition superior to any flock in this State.

J. H. STROBRIDGE, Haywards, Alameda Co.
E. W. PEET, Agent.

LITTLE'S SHEEP DIP.

Price Reduced
TO $1.25 PER GALLON.

Twenty gallons of fluid mixed with cold water will make 1,200 gallons Dip.

Apply to FALKNER, BELL & CO., San Francisco

CARP FISH

FOR SALE.

Can be forwarded by express, or rail or water, with safety. Inquire of LEVI DAVIS,
Forestville, Sonoma County, Cal.

CALVES AND COWS

Prevented suckling each other, also self-sucking by "Rice's Patent Malleable Iron Weaner," used by all stock raisers. Price by mail, postpaid, for Calves till 1 year old, 58c; till 2 years old, 87c; older, $1.15 Circulars free. Agents wanted. H. C. RICE, Easthampton, Mass.

The American Driven WELL WATER SUPPLY SYSTEM

FOR MINING, IRRIGATION, MECHANICAL DOMESTIC & MUNICIPAL PURPOSES
Send for Circulars.
BABCOCK, HOWARD & CO.,
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Importers and Dealers in Guns, Rifles Pistols, and Fishing Tackle, etc.

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Makes to order Gents' Fine French Calf Boots from $6 to $10; Gaiters from $3 to $6; Alexis from $3.50 to $5; Mens' Heavy Kip Boots, $6; Oxford Ties, French Calf, $4; California Leather, $3.50; Men's Working Shoes from $2.50 to $3; Children's Shoes made to order. Persons in the country ordering to the amount of $12, I pay the express charges. I sell nothing but my own manufacture.

75 LOVELY FRENCH CHROMO CARDS with name on 10 cents, Chas. Kay, New Haven, Conn.

Oakland Poultry Yards.

Cor. 17th and Castro Sts., Oakland, Cal.

GEORGE B. BAYLEY,

Importer and Breeder of all the best known and most profitable varieties of Land and Water Fowls.

Brahmas, Cochins, Houdans, Langshans, Leghorns, Polish Hamburgs, Bronze Turkeys,

And the new fowl, AMERICAN SEBRIGHT or EUREKA.

Agent for the PACIFIC INCUBATOR; capacity, 500 eggs. Guaranteed to hatch NINETY PER CENT. of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season. Price, $90. For further particulars send stamp for illustrated circular to GEO. B. BAYLEY, Box 1771, San Francisco.

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NEUMAN'S.

All kinds of Fancy and Staple Groceries, wholesale and Retail, at their Stores,

323 to 331 Sixth St., 1307 Polk St.,
— AND —
1144 AND 1146 FOLSOM ST., S. F.

Goods delivered to any part of the city, or to any railroad, steamer or vessel, free of charge.

Country Orders Specially Solicited.

All such orders must be accompanied by a check or cash. All goods promptly delivered and warranted as to quality.

☞ Orders most respectfully solicited.

SHORT HORNS FOR SALE.

I have for sale at my ranch, near Oroville, Butte county,

12 Young Short Horn Bulls,

From one to two years old. Price from $100 to $200 each.

ALSO

50 Short Horn Cows and Heifers.

All these cattle are red Durham—all thoroughbred. They are offered at private sale to those wishing to secure good stock. MOSES WICK.
Oroville, Butte Co., Cal.

Short Horn Bulls For Sale.

The undersigned now have for sale a few choice Thoroughbred and high grade bulls from the best milk strains Our herd consists of "Young Marys," "Daisies," "Imp Britannias," etc. Prices Reasonable.

HYDE & MOORE, Visalia, Cal.

We have for sale at our farm at Mountain View, thoroughbred

BERKSHIRE PIGS

From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880. Pigs from Imported Boar and Sow, $25 each. From Imported Boar and Thoroughbred Sow, $10 to $20. Our Imported Pigs are as nice Pigs as there are in the State. Address JACKSON & TRUMAN, S. F.

Stock Range.

Parties wishing to purchase good stock raising lands, unaffected by severe drouths, will do well to address the undersigned. The lands can be purchased cheap, in lots from 100 to 2,000 acres. It is partly low table and rolling land, partly clear and level. Good for vine and fruit raising. Will raise vegetables and all kinds of grain. Crops certain every year. Near town and a $10,000 public school house. Price, $3 to $5 per acre. Good local market for fruit, vegetables, grain, poultry and dairy produce. Address the proprietor,

EDWARD FRISBIE,
Anderson, Shasta Co., Cal.

JOHN JENNINGS.

Hooper's South End Grain Warehouses,

Cor. Japan and Townsend Sts., S. F.

First-class Fire-proof Brick Building. Capacity, 10,000 tons. Goods taken from the Dock and the Cars of the C. P. R. R. and S. P. R. R. free of charge. Storage at Current Rates. Advances and Insurance effected

California Inventors

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YOUR NAME on 50 fine Chromos, or 40 Comic transparent cards, 10c. Wise & Co., Clintonville, Ct.

GRANGERS' BANK

Of California,

SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,000,
In 10,000 Shares of $100 each.
Capital Paid up in Gold Coin, $531,200.
Reserve Fund and Paid up Stock, 21,178.

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LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

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TERM DEPOSITS are received and interest allowed as follows: 4% per annum if left for 6 months; 5% per annum if left for 12 months.

BILLS OF EXCHANGE of the Atlantic States bought and sold.

ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1882.

ITALIAN SHEEP WASH.

EXTRACT OF TOBACCO.

Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

SCAB OF THE SHEEP.

The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

For particulars apply to CHAS. DUISENBERG & CO. Sole Agents, 314 Sacramento St., San Francisco.

B. STEACEY,

Lockeford, San Joaquin Co., Cal.,

MANUFACTURER OF ALL KINDS OF

FARMERS' WAGONS,

Buckboards, Family Buggies

Of all kinds and sizes.

Keeps a good supply of well seasoned wood on hand. Blacksmithing and painting departments in connection.

COMPOUND OXYGEN

NEW TREATMENT BY INHALATION, for Consumption, Asthma, Catarrh, Bronchitis, Dyspepsia, Chronic Headache, Debility, Rheumatism, Neuralgia, and all Chronic and Nervous Disorders. Prepared by DRS. STARKEY & PALEN, Philadelphia, Pa. Package contains all directions, and is easily sent by express. Ready for USE AT HOME. MATTHEWS, Forwarding Agent, H. E. 606 Montgomery street, San Francisco, Cal. ☞ Send for Free Pamphlets.

Rare Cabinet of Minerals.

A physician who has long resided in the mines and other parts of California, and gathered a large and valuable collection of minerals and other specimens, offers the same for sale at a bargain. Address "Cabinet," box 2361, San Francisco.

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At fair rates of interest and

FARMS BOUGHT AND SOLD.

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Good Crops Every Season Without Irrigation.

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Address *"Exchange & Mart,"* Santa Cruz, Cal.

MERRILL'S PATENT REIN HOLDER.

This is a sure and certain preventative to keep horses from running away. **Price $2.50.** Address W. P. MERRILL, Florin, Sacramento Co., Cal.

SAN FRANCISCO MARKET REPORT.

(CONTINUED FROM PAGE 261.)

ONIONS—There is great variety in quality, some going at $1 @1.10, while others drop to 40c ⅌ ctl.

POTATOES—Potatoes are now in fair supply, and prices have dropped off a little.

POULTRY AND GAME—Turkeys have advanced again to old figures. Fowls are a little lower.

PROVISIONS—There is a fair trade, but rates are unchanged.

RYE—Rye continues dull. No sales on call. Bids and offers were: No. 1, September, $1.35 bid, $1.50 asked; No. 2, September, $1.25 bid, $1 40 asked; October, $1.15 bid, $1.40 asked.

VEGETABLES—Mushrooms and asparagus are now selling by the box at rates given in our list. Rhubarb and Green Peas are considerably lower.

WHEAT—The Wheat market continues steady, but rather quiet. There is the regular movement on the outside, but little or nothing on call. The only sale on call Tuesday was 1,000 tons No. 1 White, Port Costa, seller 15, $1.60. Bids and offers were: Extra choice, April, Port Costa, $1.6[illegible] bid; May, $1 61¼ bid, $1 65 asked; June and August, $1.6[illegible] bid; September, $1.6[illegible] bid. No. 1 White, April, $1 60 bid; August and September, $1.6[illegible] bid, $1.6[illegible] asked; October, $1.57½ bid, Port Costa; No. 2 White, April, alongside, inspection waived, $1.57½ asked. No. 1 Amber, April, $1.60 asked; No 2 Amber, seller 10, $1.57½ asked.

WOOL—The first spring Wool is from the San Joaquin valley, and is quoted nominally in our list this week. The price is, of course, not yet fixed. Nothing has come up from the southern coast yet.

Domestic Produce.

WHOLESALE.

WEDNESDAY M., April 5, 1882.

BEANS & PEAS.	
Bayo, ctl	3 00 @3 25
Butter	3 75 @4 25
Castor	3 50 @4 00
Pea	4 15 @4 50
Red	2 [illegible]
Pink	2 [illegible]
Large White	3 00 @3 2[illegible]
Small White	4 45 @4 50
Lima	— @[illegible]
Field Peas, b'lk eye	1 5 @1 75
do, green	2 00 @2 25
BROOM CORN.	
Southern	3 @ 3½
Northern	4 @ 6
CHICCORY.	
California	4 @ 4½
German	6½@ 7
DAIRY PRODUCE, ETC.	
BUTTER.	
Cal Fresh Roll, lb	25 @ 26
do Fancy Brands	— @ 27
Pickle Roll	— @ —
Firkin, new	24 @ 25
Eastern	18 @ 20
New York	— @ —
CHEESE.	
Cheese, Cal., lb	14 @ 16
EGGS.	
Cal. Fresh, doz	21 @ 22
Ducks	— @
Oregon	— @ —
Eastern, by expr'ss	— @ —
Pickled here	— @ —
Utah	— @ —
FEED.	
Bran, ton	12 50 @13 00
Corn Meal	36 00 @37 00
Hay	10 00 @1[illegible] 00
Middlings	@13 00
Oil Cake Meal	— @27 50
Straw, bale	62½@ 70
FLOUR.	
Extra, City Mills	5 25 @5 50
do, Country Mills	4 75 @5 00
do, Oregon	4 75 @5 12
do, Walla Walla	4 50 @[illegible] 00
Superfine	3 50 @4 25
FRESH MEAT.	
Beef, 1st qual'y, lb	7 @ 7½
Second	5 @ 6½
Third	4 @ 4
Mutton	5 @ 6
Spring Lamb	8 @ 12½
Pork, undressed	[illegible] @ 7
Dressed	8 @ 9
Veal	7½@ 8
Milk Calves	7½@ 8
do, choice	— @ 10
GRAIN, ETC.	
Barley, feed, ctl	1 45 @1 50
do, Brewing	1 70 @1 75
Chevalier	1 [illegible] @1 67½
Buckwheat	1 50 @1 75
Corn, White	@
Yellow	1 50 @1 55
Small Round	@
Oats	1 20 @1 67½
Milling	1 70 @1 72½
Rye	— @2 1[illegible]
Wheat, No. 1	— @1 62½
do, No 2	1 57½ @1 [illegible]
do, No. 3	1 45 @1 50
Choice Milling	— @1 65
HIDES.	
Hides, dry	18 @ 19
Wet salted	9½@ 11
HONEY, ETC.	
Beeswax, lb	23 @ 25
Honey in comb	14 @ 18
Extracted, light	9 @ 10
do, dark	7½@ 8
HOPS.	
Oregon	20 @ 21
California, new	12 @ 25
Wash. Ter	19 @ 20
Old Hops	@ —
NUTS Jobbing.	
Walnuts, Cal	10 @ 11
do, Chile	7½@ 8
Almonds, hd shl lb	8 @ 1[illegible]
Soft shell	14 @ 15
Brazil	10 @ 11
Pecans	13 @ 1[illegible]
Peanuts	6 @ 6½
Filberts	14 @ 15

ONIONS.	
Red	— @ —
Silverskin	35 @ 75
do, choice	1 00 @1 10
Oregon	@ —
POTATOES.	
New, lb	4½@ 5
Early Rose	@2 00
Petaluma, ctl	1 75 @1 [illegible]
Tomales	1 70 @1 [illegible]
Humboldt	1 8[illegible] @1 [illegible]
" Kidney	@
" Peachblow	@ —
Jersey Blue	@ —
Cuffey Cove	@
River, red	1 90 @2 00
Chile	1 50 @1 60
do, Oregon	— @ —
Oregon Peerless	1 70 @1 80
Sweet	1 00 @1 25
POULTRY & GAME.	
Hens, doz	5 [illegible] @[illegible] 50
Roosters	5 00 @[illegible]
Broilers	6 00 @ 7 50
Ducks, tame, doz	6 00 @ 7 [illegible]
Mallard	2 [illegible] @ 2 50
Sprig	1 50 @1 75
Teal	75 @ [illegible]
Widgeon	1 00 @1 12½
Geese, pair	1 75 @2 25
Wild Gray, doz	1 75 @2 00
White do	50 @1 00
Turkeys	14 @ 17
do, Dressed	14 @ 17
Turkey Feathers, tail and wing, lb	10 @ 20
Snipe, Eng	2 00 @2 25
do, Common	50 @ 75
Quail, doz	75 @ [illegible]
Rabbits	1 00 @1 25
Hare	1 50 @1 75
Venison	5 @ 7
PROVISIONS.	
Cal. Bacon, extra clear, lb	13½@ 14
Medium	13½@ 14
Light	14 @ 15
Lard	13 @ 16
Cal. Smoked Beef	11 @ 12½
Shoulders	9 @ 10½
Hams, Cal	12 @ 1[illegible]
do, Eastern	1[illegible] @ 1[illegible]
SEEDS.	
Alfalfa	12 @ 13
do Chile	— @ —
Canary	3½@ 4
Clover, Red	14 @ 15
White	45 @ 50
Cotton	— @ 20
Flaxseed	2½@ 3½
Hemp	— @ 5
Italian Rye Grass	25 @ —
Perennial	25 @ —
Millet, German	10 @ 12
do, Common	7 @ 10
Mustard, White	1½@ 2½
Brown	2½@ [illegible]
Rape	[illegible] @ 2
Ky Blue Grass	20 @ 25½
2d quality	16 @ 18
Sweet V Grass	— @ 75
Orchard	20 @ 25
Red Top	[illegible] @ 1[illegible]
Hungarian	8 @ 10
Lawn	30 @ 40
Mesquit	10 @ 12
Timothy	9 @ 10
TALLOW.	
Crude, lb	6½@ 7
Refined	9½@ 10
WOOL, ETC.	
FALL 1881	
San Joaquin	10 @ 13
do, Lamb	13 @ 15
Southern Fall	10 @ 12½
do lambs'	13 @ 14
Northern, free	1[illegible] @ 20
do, defective	14 @ 16
Mountain, free	16 @ 18
do, slightly seedy	13 @ 15
Humboldt & Mendocino	20 @ 21
SPRING 1882	
San Joaquin, free	1[illegible] @ 20
do, fair	17 @ 18

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., April 5, 1882.

FRUIT MARKET.	
Apples, bx	1 [illegible] @ 3 00
Bananas, bnch	2 50 @ 4 00
Cocoanuts, 100	6 00 @ 7 00
Cranberries, bbl, 12	[illegible] @ 1[illegible]
Limes, Mex	8 00 @10 00
do, Cal, box	2 00 @10 00
Lemons, Cal, bx	2 00 @ 3 50
Sicily, box	[illegible] @ [illegible] 50
Australian	— — @— —
Oranges, Cal, bx	3 00 @ 4 50
do, Tahiti M	— — @— —
do, Mexican	1[illegible] @[illegible]
do, Loreto	— — @— —
Pears, bx	— — @— —
Pineapples, doz	8 00 @ 9 00
DRIED FRUIT.	
Apples, sliced, lb	7 @ 7½
do, evaporated	10 @ 11
do, quartered	— @ 7
Apricots	— 15 @ — 17
Blackberries	— 14 @— 16
Citron	— 28 @ — 30
Dates	— 9 @ — 10
Figs, pressed	— 4 @ — 6
do, loose	— 3½@— 5
Nectarines	— 14 @ — 15
Peaches	— 11 @— 11½
do pared	— 14 @— 18

Pears, sliced	— [illegible] @ 6½
do whole	— 7 @— 8
Plums	— 5 @ 6
Pitted	— 13 @— 14
Prunes	— 9 @ 1[illegible]
Raisins, Cal, bx	@ 2 [illegible]
do, Halves	— — @ 2 75
do Quarters	— — @ [illegible]
Eighths	@ 3 25
Zante Currants	8 @ — 10
VEGETABLES.	
Artichokes, doz	@ 50
Asparagus, bx	1 [illegible] @ 1 [illegible]
Beets, ctl	@ [illegible]
Cabbage, 100 lbs	75 @ 1 00
Carrots, sk	— 75 @— 90
Cauliflower, doz	[illegible] @ 1 00
Garlic, lb	— — @ 1½
Lettuce, doz	— 10 @
Mushrooms, bx	— 75 @ 1 00
Okra, lb	— 5 @— 8
Peas, green, lb	— 4 @ 6
Parsnips, lb	@ [illegible]
Rhubarb	— 4 @— 6
Squash, Marrow fat, ton	18 00 @20 00
Tomatoes	— 15 @— 18
Turnips, ctl	— — @— 75

Try the Rural Press for 25 Cts. a Month.

Tell your friends that they can have the PACIFIC RURAL PRESS mailed to them one month on trial for 25 cents. Four back Nos. will be added on receipt of 10 cents additional—making eight copies for 35 cents. It is a handsomely printed and illustrated home journal. Mail it to friends abroad.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

LIVERY STABLE IN OAKLAND. We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

POSTMASTERS having their attention directed to this notice by the publishers, are requested to act as agent for this paper (whenever they can do so without interference with our published list of solicitors), and we will allow them a favorable commission on subscriptions, as per terms published elsewhere.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances. The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

A TURNED LEAF will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.

Wells' New Hop Circular.

We have received a specimen copy of Emmet Wells' new hop circular, that is, a copy of the new series of the old and well-known publication. Mr. Wells proposes to furnish his new circular only to actual subscribers, and the price is $5 per year in advance. Specimen copies sent free. Address Emmet Wells, 69 Pearl St., New York.

The Latest Style Improved Alden Evaporator,

For Preserving Fruits, Vegetables, etc.

Latest Improved Alden Drier.

In the evaporator shown in the above cut we retain the Alden process of [illegible] the fruit in currents of heated [illegible] air, while the capacity is greater and the cost [illegible] than in the old style Alden machines which have vertical chambers. The new style having the [illegible] chambers, requires no hoisting apparatus to [illegible] work nor build [illegible] they can be set up, taken down and moved any [illegible] by any one in a few hours. Thousands of them are [illegible] in the Eastern States, giving perfect satisfaction. They are simple, compact, portable, and easily [illegible] and operated. They are substantially made of the best material, and the fruit frames have galvanized wire [illegible] the smoke [illegible] the [illegible] holes in its bottom, so that all the [illegible]. The stove can be used for house warming [illegible] operate [illegible] the evaporator, and the product is equal to the best Alden fruit. The loaded frames are moved up through the upper and down through the lower chamber on rollers, as shown, which gives them a line of travel of 33 ft. We [illegible] this style of evaporator. No 1 is 17 ft. long and has 33 frames, 39 inches square each, giving a [illegible] capacity [illegible] bushels of apples per day. Price, for everything complete, on board cars, [illegible] No [illegible] ft long and has [illegible] frames, 27 inches square [illegible] capacity, 20 bushels per [illegible]. We [illegible] to furnish the [illegible] Alden apparatus for large factory purposes at reduced prices.

Intending purchasers should calculate the number of feet of surface of our frames for comparison and so determine which drier gives the greatest capacity, and if they will also examine the [illegible] work [illegible] of our Evaporators, [illegible] the products of the various driers into the market they will discover which is the best and cheapest Evaporator. For further information and prices of territorial rights, Address,

ALDEN FRUIT CO.
220 Sansome Street, San Francisco Cal.

News in Brief.

GENERAL HURLBUT, U. S. Minister to Peru, died suddenly at Lima on March 28.

THE Senate passed a resolution appropriating $10,000 for a monument over the grave of Jefferson.

MRS. MACKAY denies the report of the engagement of her daughter to Philippe de Bourbon.

MARK SHELDON, the well-known Sewing Machine agent, has removed to 9 and 11 First Street.

C. W. SMITH, an old resident of Grass Valley, and well known throughout the State died on Sunday.

JESSE JAMES, the notorious train robber, was killed near Kansas City, by a country boy, on Monday.

A BILL will be introduced in the House authorizing the use of the polariscope in fixing the duties on sugar.

THE St. Petersburg *Golos* says that the police are preparing for the further expulsion of Jews from Moscow.

GARRETT W. RYCKMAN, the oldest in age of the pioneers on this coast, died in this city at the advanced age of 84.

THE Denver Board of Education has named the elegant new school building, now being erected, "Longfellow," in honor of the dead poet.

IN Candelaria, Nev., the water company sells water at five cents a gallon. Enterprising peddlers run water carts in opposition, and sell water at three cents a gallon.

THE oil wells at Newhall, Los Angeles county, are now producing constantly and favorably. They are all located within the radius of a single mile. The product is acknowledged superior for steam fuel and lubricating, but not so desirable for illuminating as from some other localities. Two carloads a week are shipped regularly for steam fuel at the quicksilver mines. Mr. Edwards' patent petroleum burner for steam boilers beats all Eastern devices, and seems destined to make crude petroleum a favorite steam fuel.

LOS ANGELES is improving in its daily press. The *Times* is its latest addition. The new sheet has a sprightly make-up, is handsomely printed, and has a clean and enterprising appearance. If on as good acquaintanceship we find other members of the fraternity as genial as Mr. Mathes, we should regard Los Angeles a happy field for journalistic labor.

P. S. RUSSELL'S CULTIVATOR, shown in model but not for competition) at the Citrus fair, appears to be a very creditable improvement by a Riverside inventor and patentee.

WE sincerely regret the loss of some very fine samples from the orange exhibit of Mr. S. Richardson, of San Gabriel, before testing them.

SEND name and address to Cragin & Co., Philadelphia, Pa., for Cook Book free.

Orange Trees.

10,000 Seedling,

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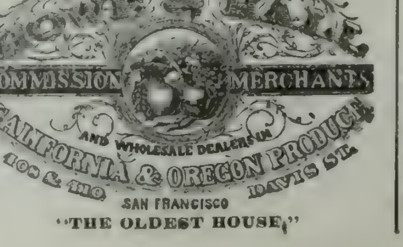

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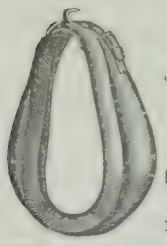

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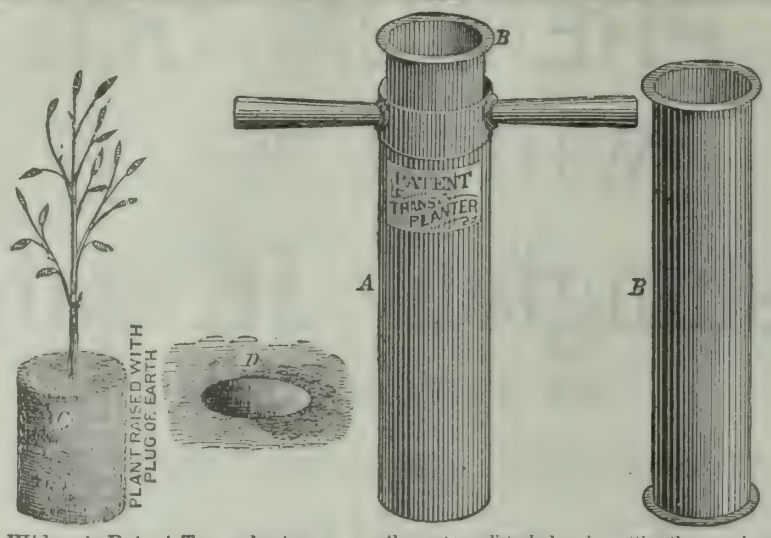

Widney's Patent Transplanter.

There are few inventions possessing so high a degree of labor-saving qualities as the above named. Referring to our engraving, the operator, placing both hands on the handles shown, presses the outer cylinder, *A*, into the ground, and raises with it a column of earth sufficient to leave a hole of the required depth to receive the plant. The inner cylinder, *B*, rests on the surface of the dirt brought up, and ejects it by downward pressure of the operator's thumbs, when the instrument is thrust over the plant into the ground, and brings up with it a plug of earth which is forced quickly and snugly into the first excavation. By a rapid twisting motion a smooth, easy drawing cut is made by the thin edge of the cylinder as it enters the ground. Pouring a trifle of water around the plant fills the slight crevices around the plug and perfects the work. An important object is accomplished by taking the plant or tree, with a solid plug of earth around the roots, undisturbed, and resetting the same in a hole, around which hole the ground is undisturbed and ready to receive and nourish the young roots, thus leaving the plant in as near its natural growing condition as possible.

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The Fertilizer should be sown by hand on the ground when it is moist like seed, and then harrowed. About 400 pounds is the quantity for an acre. Price, $40 per ton.

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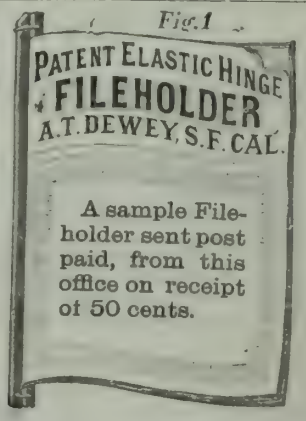
Fig. 1



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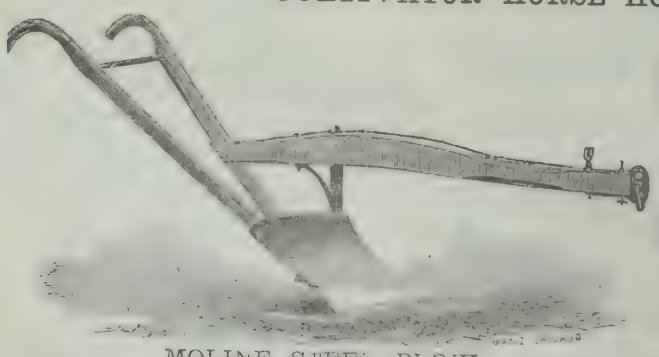

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PACIFIC RURAL PRESS

LIVE STOCK EDITION—TWENTY-FOUR PAGES.

Volume XXIII.] SAN FRANCISCO, SATURDAY, APRIL 15, 1882. Number 15

Artificial Production and Care of Fowls.

In these days of progress, while great improvements are being made in the higher branches of science, invention has not disdained to invade the humbler walks of every day life. Already the labors of the farmer and artisan have been so materially lightened that they are often but little more than a pastime. Improved washing machines, churns and cheese making apparatus, have also lightened the indoor labor of the farm to a great degree.

Invention has not, however, stopped at the amelioration of mankind, but has extended its benefits to the lower animals and fowls. The occupation of the nervous clucking, petulant hen, who with so much importance and apparent discomfort, advertises her willingness to take charge of a family and try to add to the ranks of spring broilers, is passing away. It has been usurped by the many patent automatic eccaleobions, and dame Partlett is unceremoniously returned to the ranks of the producers, the instant she makes her ambitious views known.

One of the best, cheapest and most practical devices of this kind, which we have ever seen, is now in use at the well-known establishment of Mr. Geo. B. Bayley, on the corner of Castro and 16th street, Oakland. The incubator itself consists of an exterior case, about four and one-half ft. high, two ft. four inches wide, and two ft. deep from front to back. Within this case are placed series of drawers, sliding in and out from the front, having wire gauze or foraminous bottoms. These drawers are just deep enough to hold the eggs, and are surrounded by double metallic walls forming chambers, so arranged that the contained hot water will circulate continually through them, and the heat therefrom will be directed upon the eggs in the same manner that it is from the body of the hen. The boilers, lamps and regulating devices are of the simplest description. No attempt has been made to employ voltaic or other automatic regulators; but very little attention is needed to keep up the proper temperature.

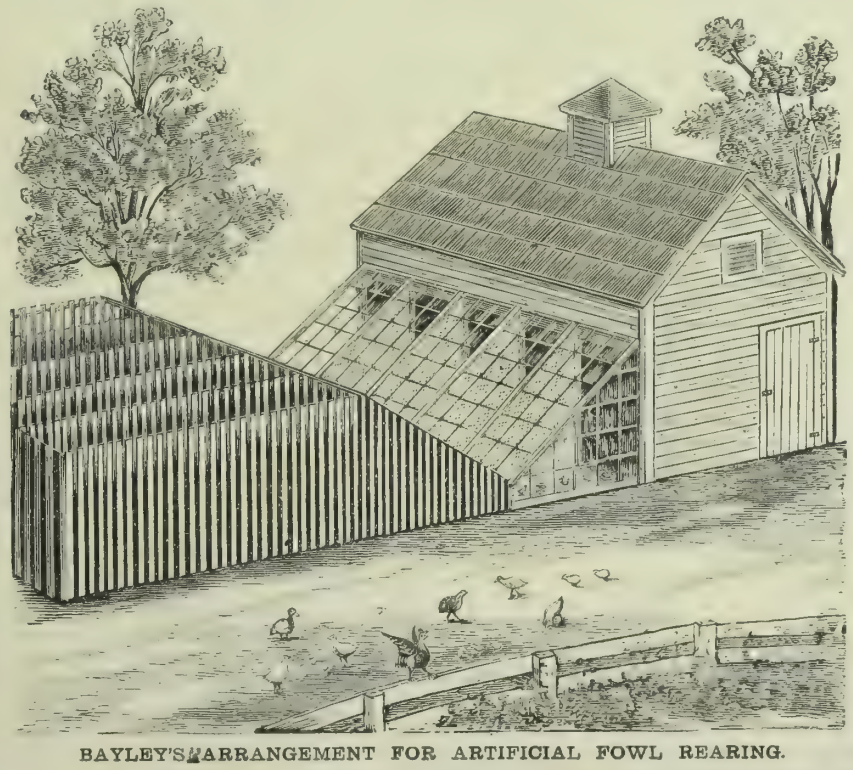
The size above described accommodates 560 eggs, and the amount of oil used for the lamps in hatching out this number of eggs, will not exceed three gallons. The temperature is regulated by means of a thermometer, which is placed in the water at the top, and this indicates the actual temperature much better than when a thermometer is laid among the eggs, as in the latter case it will not be shown, sometimes, within ten degrees. Two other sizes are made at present, one accommodating 280 eggs and the other 180, the prices being respectively $90, $65 and $45. Between 9,000 and 10,000 chickens were hatched out with this apparatus last year.

As soon as hatched, the chickens are placed in shallow boxes about a foot square, and covered with a blanket or cloth, being allowed to remain for 24 hours, after which they are turned out into pens. The chicken-house may be cheaply constructed, or any old shed may be utilized. A southern exposure at one side is preferable, and this side may be open and fitted with inclined sash, glazed like a hot bed, the sash extending nearly to the ground. From the edge of the sash open pens extend a short distance away from the building, forming a continuation of the divisions inside, and having gates by which the chickens may be kept inside the house in stormy weather. The pens are made of laths, or other light strips of wood, placed so closely together that the chickens cannot escape.

The only care necessary is to watch the young chicks, and when they commence to huddle together, showing that they are cold, they must be taken up and placed in the boxes, then covered with a blanket, sack, or other material, its thickness depending upon their age or the coldness of the weather. They will soon become warm, and may again be turned out. The amount of care and watching will depend upon the weather and the age, becoming less as they grow, until, at six or eight weeks, they may be turned into large pens or allowed to run free. At night, they are also placed in the boxes, and need no other care.

This plan is claimed to be much better than any use of artificial mothers, heaters, or regulators, as, when artificial mothers are used, the chickens are apt to crowd to the center, where some will inevitably be suffocated. They are apt also to neglect to feed, and generally do not thrive as well as by the method above described. The temperature of the house may be easily regulated by means of doors or windows. Very few chickens are lost. Any person of ordinary intelligence can attend to the whole operation of the incubator and the subsequent care of the young chickens, and the hen can attend strictly to her duties without any thought or uneasiness as to the future welfare of her eggs.

The incubators are being manufactured, and may be obtained from Mr. Geo. B. Bayley, Castro and 16th Sts., Oakland, Cal.; from whom, also, any information, regarding the care of fowls, may be obtained. The engraving on this page shows the exterior of the chicken-house which we have described, and will aid greatly in understanding the arrangement.



BAYLEY'S ARRANGEMENT FOR ARTIFICIAL FOWL REARING.

The Live-Stock Markets.

It has been a winter of unusually high values for meat stock in San Francisco. Available cattle have been picked up in all of the near-by districts, so that there is a scarcity for local use in many counties. The distant fields, which have largely supplied our markets during the last few years, are being drawn upon by buyers from the East, and there is every prospect that San Franciscans will pay higher for their meat in the future than in the past. This prospect will undoubtedly lead to the keeping of more stock on California farms. Hitherto, there has not been much encouragement to fatting cattle on small farms, because the price has been low, but if the value offers a fair profit, it will open the way for satisfactory work, and will have a beneficial effect upon many worn lands. In Nevada, whence a great part of San Francisco beef is brought, there is much confidence in the outlook for the meat-producing industry for several reasons. These are sketched by the Reno *Gazette*, and as the conditions will have an effect upon the nearer growth of cattle, we quote as follows:

For over 11 years, cattle have been cheap. In 1869 they sold for ten cents, and a few sales were reported as high as thirteen cents. In December, 1880, they were going at three and a half to four cents, and some were sold for two and five-eighths cents per pound. The latter were poor cattle, of course, but to-day they would sell for six cents. This winter sales at nine cents have been reported. The causes that brought down prices were several. One was hard times East, another was dry years in Nevada, which left the ranches short of feed and cut the supply in the hills very short. Several hard winters scared people and a good many were so anxious to get out that they knocked prices in order to sell. Then vast herds were driven in from Texas several times. Heavy sales from Oregon, Washington and the North and points to the south helped to fill the San Francisco markets. Most of these causes have been removed. The pendulum has swung back and forth in Nevada, and the true capacity of the State determined. There is more feed raised by irrigation, more hay stored up and much more capital invested in solid improvements to protect stock in hard winters. The demand from the East seems to be unlimited. The Eastern capacity for Nevada beefsteaks and roasts is practically insatiable. The Humboldt country has been full of buyers for a year, and thousands and thousands of head have been driven to Wyoming and Colorado. Last year the late spring rains brought excellent browse on all the mountain ranges, and this winter will secure a like result for 1882. Cattle men say the western half of Nevada had as much feed last year as it had when cattle first came in. There were enormous crops of hay and grain last year, and cattle were needed to eat them up just when there was a big demand for beef cattle for California and stock cattle for the East. Combined with all these circumstances, there has been an improvement in the breeds of Nevada cattle. Considering, therefore, the growing markets in California and the East, and the improved facilities for storing feed and raising hay and grain in Nevada, it is plainly to be seen that there is no immediate prospect for a depreciation in the price of beef.

THERE is a severe famine in Zululand. Crops have failed because of the drouth.

The Census and the Forests.

Many of our readers will remember the visit of Prof. C. S. Sargent to this coast last summer. He came as a special agent of the U. S. Census Office to obtain information concerning our forests. We recently received some advance proofs of parts of his report alluding to some of the Eastern States, and ere long the Pacific Coast States and Territories will no doubt be described and forest maps made. The reports which Prof. Sargent has already issued show that great prodigality has been characteristic of the treatment of forest areas in the United States.

The maps of Michigan, Wisconsin and Minnesota, for example, show with startling distinctness how rapidly the pine woods of the lake region are melting before the ax, and the figures appended enable us to calculate with reasonable accuracy how long the devastation can continue. New England has squandered her pine, and so have New York and Pennsylvania, and now are drawing upon the final reserve.

In the three states named Professor Sargent estimates that 82,000,000,000 feet (board measure) of merchantable pine remain standing, while the cut for the census year ending May 31, 1880, amounted to over 7,000,000,000 feet. It must be assumed that the lumber marketed every year will increase as the country grows, so that it is safe to assert that when another census comes to be taken there will be no pine forest remaining—or at least none of sufficient extent to make any show on the map. The lake region has been so thoroughly explored that there remains no chance of discovering any considerable bodies of timber which have not been included in the count. We know just what we have, we know that this must soon be lost, and we know, too, that no provision has been made for any future supply. We know that the great brown areas of Profesor Sargent's maps, which are so rapidly encroaching upon the forest green, represents territory upon which nothing is left but stumps. Small trees and great have been indiscriminately slaughtered. No young trees have been left to grow up to their full girth and stature. The lumber has been sawed in the most extravagant way, as if the purpose had been to get rid of the forest as quickly as possible. Timber has been squared in the woods, leaving the ground covered with dry chips and score blocks to feed the fires which have desolated whatever the ax and saw may have chanced to leave, and burned out of the soil itself its capacity to support pine growth.

It is useless now to mourn over what has been done, although it is plain to see that the supply of needed pine could have been sustained indefinitely in growing forests if trees below a certain standard size had been left. But we have forests of other timber trees in the Pacific States, of yellow pine in the South, and hard wood in considerable quantities scattered all over the Union. The warning sounded by this report ought to awaken public sentiment and bring about some concerted action for checking this wanton waste of the national wealth. If owners of woodland fully realized what their property would be worth a few years hence, lumber would not be exported at a price which barely pays for the labor of preparing it for market. The Government, too, might be induced to throw some restrictions about the sale of its timber land. And if private owners and Government officers were properly instructed, we might hope for the adoption of some conservative policy, under which our remaining forests could be preserved to yield a rich annual harvest for an indefinite period. It is plain that if our forests are swept away at the rate of millions of acres every year, the white pine is only one of our trees which will be practically exterminated. It should be remembered, too, that the direct pecuniary loss to the country is only one of the evils entailed by this destruction.

CORRESPONDENCE.

We admit, uncensored, opinions of correspondents.—EDS.

Wayside Notes.

Written for the RURAL PRESS by MRS. L. J. DARIN.]

I like white horses! There were two white ones on the home farm—steady old Liza and Jerry—that I used to drive when I was a girl; many a snow-drift have they taken me safely through, and it was not their fault that I sometimes got my reins crossed and so turned them into the ditch or up the bank. They showed very plainly that they were mildly astonished at my first efforts at driving, and I believe they knew very well that they could have done much better if I had not tugged at the reins at all. Never would Liza have turned down into the brook of her own accord, when she was going decorously along in a funeral procession; neither would Jerry, on another occasion, have run the wagon wheels into a neighbor's fence and sent the boards flying about me as though there was a hurricane abroad, if he had had his own way about turning the corner. All I can say for myself is that I am a "self-educated" teamster, and used to be absent-minded.

My early adventures have often been recalled during some few weeks past, while riding after white Charley and white Kit. Thanks to these steady goers, I have seen some of nature's pretty pictures in Stanislaus and Tuolumne counties. Starting out from Oakdale, where I have spent most of my time, we leave behind us one pleasant picture—the thriving little town itself, set in among the beautiful oaks that give it a cozy homelike look, dear to the hearts of the inhabitants. A backward glance shows the white church spire above the green branches, which is a great addition to the picture for, in all our memories of the dear home villages in the East, the church spire shows clear against the sky, and we somehow like this reminder of old times.

At Knight's Ferry I saw large orange trees and picked oranges for the first time in my life. It did seem strange to see the trees so tall and beautiful, with their smooth green leaves and golden fruit, looking as fresh as though it was not the coldest, frostiest winter our "oldest inhabitant" can remember. I was told that even near this famous "hot town" of Knight's Ferry there has been a small pond frozen hard enough to skate upon, if skates had been obtainable. "But we did have a good, old-fashioned slide on the ice," said my informant, who is a "weighty man" in most matters, and probably gave it a very fair trial.

But one more word about the orange trees. I was told that seedling trees stand the cold much better than those that are budded on lemon stocks, and that trees brought from the lower counties and set out here are almost sure to be killed by frost. All the trees I saw in bearing were seedlings, come up from the seed planted here eight and ten years ago; but the fruit is large and of excellent flavor. Many of the oranges measured 10 inches around. These grew in the garden now belonging to Mr. Thos. Roberts, but which was formerly the home of my own dear sister, Mrs. Mary J. Locke. The two oldest orange trees were planted and bore fruit for two years before she left here, and we have always called them her trees. I well remember standing with her beside them.

At Red Mountain vineyard, near this town, many improvements have been made by the owner, Mr. A. Schell. It is the largest vineyard in this part of the State, and has the most complete machinery for grape crushing and wine making. The buildings are very large and plentifully supplied with vats and casks of enormous size; one cask, holding 10,000 gallons, would make a comfortable cabin for a small family. The long wine cellar, cut into the rocky hillside, could hardly be surpassed anywhere. We were shown and allowed to taste some most excellent raisins cured here; they had the delicate bloom upon them which is so much prized by the makers and consumers.

Feed has been rather scarce in some parts of the county. In going toward the Tuolumne I saw several flocks of sheep; the tiny lambs looked ready to perish with cold, and the old ones seemed quite discouraged at the repast spread before them.

There is quite as good a chance to get lost riding about the great open country, with rarely a signpost to point the way, as there is in the city; and, owing to the careless directions given us by a boy, we did turn old Kit off the right road to Chinese Camp, and went meandering through the fields to an old stone quarry or abandoned gold mine, where the road suddenly ended. We stood up in the buggy and "viewed the landscape o'er," rather anxious to disbelieve our own eyes, but finally concluded we must turn back to the road we had left. We soon after passed through Golden City, a camp of some few houses built up a year or two ago, when a gold mine was discovered on the ranch of Mrs. Olsen a few miles from Lagrange. The mine is said to be worked out now; at least the gold seems to be gone and only copper remains.

After passing the Crimea house, there was such a change in the landscape! For two miles the road wound about between ranges of red mountains or high hills, dotted all over with chaparral bushes of the faintest blue, or smoke color; and back of these, near red mountains, were far-off blue mountains; such a bright, deep blue, that if I had seen them so painted in a picture I should have called them too high-colored. And the red mountains, the red valley and the little red stones along the roadside I should have thought too high-colored, also, I might have condemned even the pretty smoke-colored bushes in a picture, if I had not seen them in reality. Then, just as we were leaving this odd bit of scenery and coming to some every-day sort of gray rocks, what should we see among them but a band of snow-white Angora goats. Such a pretty sight it was—so much more picturesque than the poor, shivering sheep we had seen a few miles back, for the goats did not seem to mind the cold at all.

A little farther on we came to Mount Pleasant, the home of your correspondents—John Taylor and Ada E. Taylor, his daughter. Having met Mr. and Mrs. Taylor some years ago, I promised myself the pleasure of calling a few minutes on my return; but, being obliged to take another road, I did not pass Mount Pleasant again. At Oakdale, however, I met Mrs. Rancher, who has so pleasantly entertained your readers from time to time. I was truly glad to see her, and hope I may sometime in the future meet her again.

I visited Modesto about the first week in March, and, as we rode zig-zag around the quarter-sections on our approach to it, I was sorry to see that the grain made rather a scanty showing of green blades on some of them; but the late rains brought it forward with wonderful rapidity, and the present warm weather will make all nature rejoice. The farmers say: "Now, if we can have a few more good showers, we'll have fair crops yet."

Modesto—city of the plains—is seen some miles away when coming from the north; but going out the other side across the ferry, the ground is not so level, and there are trees also that obstruct the view, so that we soon lose sight of it. Yet at the ranch of Mr. H——, five miles away, there is often a mirage in the early morning, and Modesto is suddenly brought into sight, and so very near that you can look along the streets and see carriages passing through them. The buildings on a ranch 2½ miles away are brought so close that the pickets on the door-yard fence can be counted, and the chickens are seen running about inside. I don't think you can hear them crow, however; neither can you ask your neighbors what they have for breakfast. The mirage leaves that part to the telephone for the present.

In coming down on the boat from Stockton, I saw Vallejo for the first time, having always passed it in the night before. But this time it happened to be "St. Patrick's Day in the morning," and the boat stopped there till about 9 o'clock waiting for a delegation who wished to come to San Francisco for the celebration. The town looked so beautiful in the morning light, with its setting of green trees and grassy slopes, that I was glad to accompany a pleasant young lady from Stockton through one of its streets, so that we could have it to say that we had been in Vallejo. We had a fine view of the navy yard, barracks, etc., opposite; also, the queer-looking prison-ship, where the soldiers are shut up for a few days if they get drunk or offend in other ways. As we passed out by it, heads appeared at its many windows, and handkerchiefs began to wave right cheerily. I suppose the poor fellows wished they could go, too. The boat was now well crowded, and the band gave us some lively music. Every available seat was occupied; but, by the kindness of my traveling companion, Miss Nellie G——, I fell heir to half a chair for the rest of the trip.

Carpinteria.

EDITORS PRESS:—We are now having another downpour. It commenced raining last evening, about 6 o'clock, and has kept it up almost without intermission ever since 10 A. M.; and it looks now as though it might rain for a week. Some of the farmers make wry faces over it, for it necessitates another plowing of land, especially on heavy soils, but all accept it with cheerful hearts.

I came down a week ago, and was much surprised to see the improvement manifest on all sides. Farmers generally are cleaning up their places. Where, a year and a half ago, you could see unsightly patches of nightshade and other weeds, now all has disappeared, and instead some kind of crop is growing. The valley has put on an air of thrift that I never saw before. Houses are painted, gardens planted and cared for. Some will probably ask, "What has brought about such a radical change?" The answer is, "Lima beans." Last year's crop and prices enabled all to pay off their debts and have something left. Now they know their homes are their own.

This little valley is certainly the loveliest spot I ever saw. After being absent for nearly eighteen months, at least most of the time, it looks more beautiful than ever; and the price of land—why, you can't touch it at any price. There is a piece of eleven acres that, two years ago, could have been bought for $1,400. Now, the owner has refused $2,400. It is not for sale. People seem to be crazy on the Lima bean question. Every acre of land that will produce beans is being prepared. The fruit prospect was never better. All kinds of trees are laden with bloom, and we never have late frosts to injure it. There is one thing, however, that will have to be met, and the sooner the orchardist makes up his mind to it the better, for if delayed too long it will work great injury; that is, the scale insect. I have visited some orchards that are badly affected, both here and near Santa Barbara.

Some have gone to work in earnest and have almost entirely cleaned their trees. One in particular that I saw last fall, that seemed to be past cure. The owner was completely discouraged. I tried to persuade him to spray them with lye, but he thought that it would cost more than the trees were worth. I was in his orchard on Saturday, and found he had been at work. He had sprayed his trees three times with a solution of concentrated lye; one pound to three gallons of water, and the result is that there are very few insects to be found, and his visage has shortened up in proportion to his success. It certainly looked like a hopeless task. He says he applied one pailful to each tree. The trees are seven or eight years old. Since he has had such success, none need to dispair.

As I finish this, the sun is shining. It is the first time we have seen his face since a week ago to-day. But it has been quite warm all the time. H.

Carpinteria, Santa Barbara Co.

San Benito County Notes.

EDITORS PRESS:—The almost panic apprehensions of a dry-season failure, that seemed to pervade all classes a few weeks since, was well dispelled by the abundant March rains, and the bow of promise still keeps bright by the ample dews, fogs, and warm April showers. Hollister and its beautiful surrounding valleys, bordered by hills of rich verdure, seems like some grand palatial residence or country villa, where despotic power spared nothing that seemed desirable to complete a grand panorama of beauty and luxury. The picture as a whole, just at this season, when grain fields, fruit trees, and all flowering plants, with the various ornamental transplanted foresters, are vying with each other in early display of spring costumes, is one of beauty and grandeur not easily over-rated.

Hollister, the county seat of San Benito Co., is yet very young, with population less than 2,000, yet enjoying all the benefits of a thorough municipal government, and many of the advantages usually reserved for larger towns. They seem proud of their well-graded public schools, and from miles distant may be seen the lads and lasses, by various conveyances, hastening to these citadels of democratic-republican institutions. The city shows but small amount of wealth display in residences, churches, hotels or manufacturing establishments; not even the county, as yet, has been guilty of erecting fine and costly buildings, but is quietly elaborating legalities and equities, in quarters cheap beyond comparison with any county of my acquaintance. This I view as best of good sense management, to let the pioneer settlers get their high priced "grant" lands paid for, and residences and barns erected and free from mechanics liens, before they are taxed heavily for premature grandeur in public edifices.

The monument of individual folly, or lack of common-sense views, erected a few years since as a college edifice, has long stood idle—gone through changes of ownership, of stern necessity, and is now being opened as a private high school by an able teacher from the East, Mr. S. Morton.

Speaking of college reminds me of a conversation once held with a gentleman in a small village of about 300 inhabitants, where it was evident that their public school of two grades was not in a very promising condition, or of much manifest interest to society, when I remarked that a well-qualified, live teacher might make a private school pay there, he promptly responded: "Yes, a *college* would pay first-rate here." And sure enough, the next news was, the village was to have a college; and this same individual was announced as the president thereof. The faculty, one professor assisted by his better-half, which half amounts to the whole when the faculty is called off on duty as the county surveyor. But why should anyone object to parents naming their children to suit themselves, and that, too, in their tender infancy? Academy, high school and grammar school are words almost obsolete, and who cares, if wisdom and happiness are promoted thereby.

Crop Prospects.

Some say, seldom were better in all this vicinity than at present. The acreage is not quite so much as would have been planted had the rains fallen earlier. The storehouses are not empty. Some farmers are carrying yet two years' wheat, and were therefore not anxious to spend much on an unfavorable prospective crop. The grist mill of Shackelford & Co., in Hollister, has been thoroughly revised, corrected, improved and enlarged by an army of high-toned millwrights, experts and engineers, and successfully starts up under the persuasive belting of a new 100-horse power engine. So much for the bread prospects in San Benito.

Mark for San Benito.

Last year, Mr. A. M. Thompson, a renter, sold his fine crop of wheat for a good price, and bid adieu to Benito friends and neighbors to try the gilded offers of C. J. Jones, a San Francisco agent, of "lands in southwestern and western Texas." He spent the winter in looking for the promised land and the other inducements presented by this agent, and reluctantly came to the conclusion that the public should be warned against taking much stock in Jones' Texas sheep and land talk. Mr. Thompson passed on up as far as Michigan with his family, and there came to the conclusion, that they had left a better State than any they had visited—so hastened back to Hollister. "Southwestern Texas I found a rougher place than ever California dared to boast of, and is yet too rough to justify taking a family there," is the substance of Mr. Thompson's verdict, and his old friends honor his good judgement, and give him a hearty welcome.

English Ferrets as Ratters.

Mr. Thompson brought back with him four English ferrets as an experiment, to test their ability to cope with rats, squirrels, and gophers. He took one of his pets out into a grain field and introduced him to a squirrel hole where a squirrel had just entered. After considerable delay the ferret returned, showing signs of having had a feast on blood. He next sent him after a rat that had taken a hiding under a small street-drain bridge. The rat escaped by a very hasty retreat. So far the experiment promises success.

San Felipe.

About six miles from Hollister is truly the garden spot of San Benito county. Here each one gets his flowing artesian water at small cost, and has very choice soil for fruit, berries, alfalfa, beets, or almost any production. Sheep, cattle, horses and hogs are handled with profit. Tobacco raised here has proved equal to much that is imported and seems to be yearly improving in its quality, by the skillful manipulations of J. D. Culp, who has some highly improved grounds, especially prepared by wind-breaks of cedars, underground drainage, and irrigation system combined, which seems very cheap and excellent.

E. A. Sawyer is one of the largest and most successful of the farmers of mixed order—takes pride in good-blooded horses and rears some choice specimens. Sheep and dairy cattle have their share of his attention, while fruits and ornamental shrubery are not neglected. Donnelly & Dunn whose mansion is on the Santa Clara side of the San Felipe creek, are also carrying on extensive and varied farming.

E. J. Turner has a beautiful piece of land, which looks as if the owner lived on it. But he happened not to be at home on my calling. I was especially interested to see his newly invented adjustable roller. It had been described to me as the "boss roller" for all purposes and all shapes of ground, adapted even to roll top and both slopes of a levee at the same time. But I failed to see it, as it was off on another ranch. I am told that this is not the only invention he will show the people. Yes, some farmers can think and invent, as well as work and pay royalty for the patents of another.

A Cheese Factory.

Mr. C. S. Putnam, a man of large experience, in New York State, in cheese making and factory management, has purchased some land for erecting a cheese factory. He has already a few hundred cows engaged in the immediate neighborhood, and trusts to his work for enlarging his patronage. Receives the milk in cans by weight; factory furnishes cloths, coloring, etc., returning cheese ready for boxing at two cents per pound for making.

This is a very productive settlement, lying on both sides of the creek, and some of the places mentioned are in both Benito and Santa Clara counties. I have omitted Mr. Buck's very ornamental and very tastefully decorated grounds, conservatories, fish lakes and lily ponds, with his trees and park drives, etc., simply because I could not do any justice to it, and skipping over scores of his neighbors without a passing notice will not seem so unpardonable if his is left out.

This artesian belt has no fears for dry seasons. A few acres, with good management, ensures a livelihood. I judge it a healthy community, as I saw no doctor's sign, but instead a first-class neighborhood meat market on wheels. The special interests of the county are looked after by two able newspapers, published in Hollister, and the outlook at present is very favorable for general prosperity.

April 4, 1882. B. W. C.

RIGHTS OF NEIGHBORS.—There are numbers of statutes in the records of different countries protecting neighbors from injury by each other's carelessness or misdeeds. In some of the English colonies, for instance, if you were to turn a pair of rabbits down in some parts, you would be liable to six months imprisonment with hard labor. If your neighbor did not cut down his thistles or other seed-spreading weeds, he could be summoned before the magistrates, who would order him to cut them down within a reasonable time, and if he did not do it, it would be done for him at a much greater cost. No man had a right to do anything at all calculated to injure his neighbor. This principle is embodied in the new insect laws of this State, and promises to be of great benefit. It would seem that the same principle should prevail in the debris destruction which is now threatening so many of our farmers.

THE fence or no fence question will be a prominent issue in the next election for members of the Legislature in the Walla Walla, W. T., region. Farmers want a "no fence" law, and will support candidates so pledged, regardless of party.

HORTICULTURE.

The Woolly Aphis.

EDITORS PRESS:—It will be remembered, by the readers of the RURAL, that some two years since we sent to your office, for examination, some small limbs or twigs from my apple trees, which seemed to be diseased, and which was described by the RURAL as resembling limbs or branches over which milk had been thrown, and they *did* have just such appearance. It will also be remembered that, on examination at the RURAL office, no insects were discovered. As we have been interrogated, by letter, in regard to the disease and the remedy therefor, we beg to be allowed to respond through the columns of your valuable journal.

The first appearance of the disease is a sickly appearance of the small limbs or twigs, and small, partially developed leaves, and *no* long, tender shoots on the ends of the diseased limbs, followed finally by the above-named white film. The diseased limb (or whole tree, as the case may be) has an unhealthy appearance, shedding its unhealthy bloom on young fruit; or, should the fruit remain on the tree, it is diminutive, knotty and almost worthless.

After making much inquiry, and failing to gain any information on the subject, I turned to Shafer's "Household and Farmer's Cyclopedia," and examined the whole list of orchard pests, and found one described, and named "apple tree root plant louse." We hastened to the apple orchard, dug up a small, badly diseased tree, and placed a section of its root under the microscope, and found it literally covered with insects. The insect is not exactly microscopic, as it can be detected by the unassisted eye, but is not easily examined without being magnified. It is, perhaps, about one-thirty-sixth of an inch in width and somewhat longer. The roots of trees were covered with a white cotton-like substance, and also contained many knots or warty excrescences. This white, cotton-like substance is sometimes seen above ground on the small branches, but is rarely seen above ground. The color of the insect is reddish yellow. The remedy recommended by the above-named cyclopedia is laying the roots bare and drenching them with hot water. After reflection, we concluded to try a remedy whose active properties or offensive qualities would remain with it longer than the heat would remain with the water. We laid the top roots bare and deposited a quantity of strong caustic lime over the roots and covered it up again with dirt or soil. This was done just before the fall of the winter rains; and if, during the coming summer, I find them enjoying that strong, alkaline "benefit," I will communicate the intelligence to the RURAL. The cyclopedia above referred to does not give the scientific name generally given by entomologists in describing insects, and we have thought that perhaps the insect is one belonging to the order *Hemiptera*, one of the many species being popularly known as "woolly aphis." The movements of the insect are dull and sluggish, but will soon spread through an orchard. On close examination, we found the roots of trees affected by them whose tops looked healthy and vigorous, and which bore an abundant crop of good fruit, but perhaps were more recently affected. We are certain that the disease spread from a certain tree which gave signs of the disease soon after transplanting, and no doubt was discased when I purchased it from the nurseryman. H. J. DENNISON.

Nordhoff, Ventura County, Cal.

[The insect is no doubt the woolly aphis.—EDS. PRESS.]

Orange Culture.

[In an address on orange growing, Thomas A. Garey gave interesting recollections concerning the history of orange growing in Southern California, closing with the following remarks pertinent to the present occasion:]

You residents of Riverside are here with your wealth of fruits, spread out before us, to testify to the full adaptability of this section to successful citrus fruit culture. Your triumph is complete. Time has proven that you are in the right place, and that the forebodings of disaster from winds were not well grounded.

How wonderful the change. In 1870 the jack rabbit and the coyote held full and undisputed right and rule, alone and undisturbed in this rich valley. Now we are amazed at the granduer and extent of your citrus fruit orchards.

These orchards were not in existence twelve years ago; now miles and miles are traveled in inspecting your orange groves. A neat and thrifty town is built up; a live newspaper to proclaim your advantages and defend your rights; and the crowning glory of your energy, thrift, industry and enterprise, your pavilion, dedicated to the worship of the Goddess Pomona, stands forth as a living witness of your wonderful and unexampled success.

Ladies and gentlemen, I confess to you tonight, I have always been an enthusiast in orange culture. I have the disease as bad tonight, if disease it is, as I had it fifteen or twenty years ago. I believe it has struck in, and that there is no cure for it; well, then I am destined to die an enthusiast.

As I could not believe in 1865, that no more orange orchards would be planted, so in 1882, I am still imbued with the same idea, and the orange orchards of to-day are but the harbingers of what will be planted in the near future. Yes, inhabitants of Riverside, Arlington, San Bernardino, San Diego, Orange, San Gabriel, Pasadena, Los Angeles, and others assembled here, my advice is, plant orange and lemon groves, and when nature's God shall bless your labors with golden fruit, bring specimens of it hither, to these annual reunions, and in friendly rivalry, compare each with one another's product, and then be judged righteously by those selected for the purpose, that by "your fruits you may be known." Let faith abide in you, that you may depart with a resolve to let your works be known again and again until you shall have arrived at the acme of perfection in citrus fruit culture. All of us have much to learn, and on these occasions we receive lessons of great value to all.

Look about you in this ample hall, and behold the wealth and symmetry, the grandeur and beauty spread out before you, and in such lavish profusion. Will this not inspire us with new life and cause us to depart hence, with a firm resolve to endeavor to produce from year to year, by applying the knowledge we gain, a better product. Right here I beg to lay down a few fundamental principles underlying successful citrus fruit culture.

First—The location must be suitable, for if it be faulty, all will be wrong, and we cannot then reap the full measure of success.

Second—Variety must be considered. If this be neglected, Cover's Riverside Navel will be likely always to bear away the highest prize.

Third—An ample supply of water for irrigation must be at hand. Want of water may cause all other favorable conditions to pass for naught.

Fourth—Quality of soil must be considered, for not all land in favorable localities will produce a first-class orange. We may also include the best method of managing an orange orchard properly. The management comprises the cultivation and fertilization of the soil. Irrigation, pruning, the best and most successful methods of destroying injurious insects, and also of preventing them from attacking an orchard; the best method of picking, sorting, sweating or drying, labeling, wrapping and packing.

It is creditable to you here that you are taking the lead in preparing citrus fruits for market, in an attractive manner. It is incontrovertible evidence of the industry, intelligence and progressiveness of the Riverside people.

It is pleasant to note that Pasadena, Orange, and some other portions of our country, are clearly following in your wake. You have my best wishes for your continued success, and hope your settlement may continue to grow until you will be compelled to add stones to the hight of your pavilion, and wings to its sides, to accommodate the products and the people who visit you.

THE PUBLIC LANDS.

The Forfeited Railroad Lands.

EDITORS PRESS:—From the drift of opinion as expressed by the newspaper press on this coast, as to the prospect of the Southern Pacific R. R. gobbling up the proposed Atlantic & Pacific R. R., thus preventing the latter from being pushed through California and brought in competition with the former road, one would infer that such competition promised immunity from extortionate travel and freight charges, and upon this ground a general wail of regret has gone up, that we are possibly to be deprived of the expected new monopoly. Possibly if the people were very generally aware of the sacrifice they would be expected, or required, to make to the A. & P., in the way of land grants, they would withhold their sympathy. And then, in truth, we cannot rely upon competition to remedy the evil of excessive carriage rates. Those who have made this matter a study, both in Europe and America, are agreed in the opinion that the only way to protect the people, and to prevent such extortion, is by restrictive laws and governmental control. With this sort of protection the public are as safe in their interests with one road as with two, and without rigorous, lawful and strict measures, the people are not insured against imposition by any number of roads. Capital could combine after as well as before a second road and, sooner or later, it would be sure to combine, in some shape, to increase its power and earnings, if left to itself. The will of railroad management is often the will of powerful stock gamblers, and always the will of selfish capital.

The land originally set aside by Congress, in aid of the Atlantic & Pacific R. R., was about 42,000,000 acres. This grant lapsed in July, 1879, in consequence of the non-compliance, on the part of the Atlantic & Pacific R. R. Co., of their part of the agreement. There was not a mile of railroad, at that time, west of the Mississippi river, built by, or belonging to such a company, and, further, the company had not at that time an *honest* existence. No road had been built and no preparations had been made to build the road. The lands naturally reverted back to the Government. It only lacked a recognition of this fact by Congress, who, setting the land aside, must, it seems, return them before they can be legally recalled by the Secretary of the Interior and Land Commissioner.

This red-tape business did not prevent the people from seeing the lands were open to settlement, and many have taken up homes, and are ready and anxious to file homesteads and pre-emption claims upon them. But Congress has grossly neglected its duty to the country, to the discouragement of honest settlement and enterprise, and to the encouragement of scheming stock gamblers and land grabbers. Why in the name of political economy has Congress thus failed in its duty? is a natural question, if the grant is really forfeited.

The matter has been brought before Congress repeatedly. The A. & P. grant, however, is not the only lands involved by lapse of time. The Northern Pacific forfeited 30,000,000 acres, and divers other speculative railroad schemes to monopolize Government lands have, in the aggregate, forfeited some 150,000,000 acres.

This represents in cash value as many million dollars. Is not this a throne behind the political power at Washington? Suppose all these several interests combine to prevent honest legislation and the return of the lands where they belong to the people; combine to obtain regrants, or what not, to obtain this 150,000,000 acres of land. What proportion of the 150,000,000 representative dollars could they, the thieves, afford to give the guardians of our liberties—our Representatives—for favoring their "enterprise?" How many such dollars would go begging for takers is a problem for Credit Mobelier investigators.

The old defunct A. & P. R. R. Co. was resurrected by the combining of this throne behind the power. It would be "a dangerous precedent" to allow the returning of these lands. The will of the people must be controlled. Congress must be but a tool in the hands of the men whose business is issuing and gambling in stocks, and who build and own railroads as a means to the end of monopolizing lands and enslaving the nation. Already legislation is dictated in their interests much too largely.

What is to be the final result, we, who work for, wish for, and pray for the triumph of justice and right, can but tremblingly await and hope, while we watch. Whether the reported Southern Pacific purchase is a pretense to enlist public sympathy, and so aid the A. & P. scheme in regaining control of the 42,000,000 acres and ruining thousands of settlers is a matter for conjecture. At any rate, the people should individually urge their Representatives in Congress to stand firm and work to return these lands to the rightful heirs, the people.

Alma. MOUNTAINEER.

THE DAIRY.

Sweet Cream Butter.

The last report of the American Dairymens' Association contains some remarks of the well-known English agricultural chemist, Prof. Voelcker, concerning the manufacture of butter from sweet cream, which will be found of general interest, whether one adopts the practice or not, He said:

Cream consists of a certain proportion of water and fatty matters, and a small proportion of casein. If this latter element were absent, the principal difficulties in the way of butter making would be at once overcome, because it is due to the rapidity with which casein turns sour that butter obtains the rancid taste which we sometimes detect. If by any means we could separate the fatty matter from this casein or curd matter, we should get excellent butter; and it is on this account that I believe dairy farmers will never obtain the first quality of butter from whole milk, certainly not the same quality as that which is obtainable from cream. The composition of cream varies greatly, and the same remark applies to the fatty matters of which it is constituted. This circumstance I attribute in a very large degree to the feeding of the cows. The richer the quality of the cream, the richer will be the quality of the butter made from it.

My belief is that the finest quality of butter is produced from pastures which contain a great variety of herbs, some of which might even be ranked as weeds. The question is, can ordinary pasture produce first-quality butter? and I answer, decidedly, if you take proper precautions to prevent the cream turning sour before it is churned. This sourness, let me repeat, is the great hindrance in making high-class butter.

Many persons deem this a small matter, and unconsciously allow the cream to get somewhat sour before making butter; but if you desire to produce good, sweet, keeping butter, you must churn cream as sweet as possible.

But how are you to prevent cream getting sour? In the first place, you must carefully look after all the people employed in and about the dairy, to see that they always have the importance of cleanliness before their eyes; and above all, see that those who milk the cows do so with clean hands. Secondly, you should be sure that the cows are perfectly "stripped," because if this is not done, it is the means of sowing the germ of rancidity, Then, when the milk is drawn from the cow, it ought to be cooled down directly to 55°, so as to take the animal heat from it. In order to prevent rancidity, it is very important that the cream should be churned at once. In small dairies, however, this is impracticable, and in such cases, every endeavor should be made to prevent the casein from turning.

And here let me say, do not churn too quickly. Do not be in too great a hurry and turn irregularly, because if you do, failure will almost certainly result. Turn steadily, at about 45 or 50 revolutions per minute. As soon as butter comes—and this you can tell by the noise—it is time to stop the churn and deal with the butter kernels. Strain off the buttermilk, put some cold water into the churn, and turn it again two or three times; this will have the effect of washing the butter. Perhaps the best way is to incorporate the smallest quantity of salt or salt water into the churn, so as to distribute the salt evenly among the butter. I do not recommend too frequent washing, as this only results in the butter losing that fine, natural flavor which it should possess. Other utensils should be cleansed with boiling-hot water. In butter making, everything depends upon scrupulous cleanliness, the use of plenty of hot water (or steam, if it is available) followed by cold water. Whenever you have the means for setting milk for cream, I strongly advise you to do so. If you take care to keep cream as closely as possible to a temperature of 55° to 57° Fahr., you will not only get a larger produce of butter, but also a butter of a better flavor.

In the art of butter making, chemistry is not required. It is a simple mechanical operation. Some people are of opinion that a certain degree of sourness in cream is necessary to obtain good butter. My experience has taught me differently, and I denounce the sour-cream theory as radically wrong. There is an opinion that the longer cream continues cold the worse it becomes. Sometimes a novelty, if carefully investigated, proves to be far more useful when thoroughly worked out and practically tested than the experience of the man who has been going on in his own way for 20 years. A great many such men maintain at the present time that the best quality of butter can only be made if the cream is allowed to turn a little sour. This is a great mistake. The sweeter the cream, the better the butter will turn out, other circumstances being equal.

Milk is a mechanical mixture, not a chemical compound. It is well to remember this, because it is not by chemical means that we separate cream from skim-milk, but purely by mechanical means.

Although my profession is that of a chemist, I would impress upon you that the less chemicals you use, or the less you attempt to meddle with chemical agencies in the separation of butter from the cream, the better will be the result. If you pour off the butter milk as soon as the butter comes, you will have butter much more free from the cheesy or curdy envelope which originally encased it in the cream globule. And you will never make first-rate butter unless you preserve a regular temperature in churning. The temperature should never rise above 60%. It should be rather below than otherwise. The requisites for successful butter making are, a well constructed dairy, not subject to great fluctuations of temperature; a dry floor, perfect cleanliness, appliances for introducing hot or cold water, or steam; and in the last place, washing it moderately and salting it in the churn. If you want to make first-rate, firm, fresh butter, there is no secret; no great chemical skill is required, only ordinary attention to a few simple principles; and by observing them I warrant that you obtain for your butter a better price.

WARM CARS FOR POTATOES.—Potato prices often run high here in the winter because the heavy freezes in Nevada prevent the shipments from Salt Lake. It is likely that heated cars may be used in this traffic if rates should run high enough to warrant it. We read that a car has been in use for several months on the Maine Central road, which is said to obviate many of the difficulties heretofore experienced in transporting potatoes in freezing weather. It was built at Waterville, Me., by the American Freight-car Heater Co., and is thus described: "It may be called a warm-air car. The requisite heat is obtained from four 8-inch kerosene burners, which are attached beneath the floor of the car and covered with iron plates. The burners are fed from an adjacent oil-tank, which holds about 35 gallons—enough for 10 days' use. The car is so constructed that the heat from the burners is conveyed between the lining all around the freight, so that an even temperature of 35° can be kept up as long as the oil holds out, at, it is said, a comparatively trifling expense."

SPEAKING of the deep interest now being taken in the development of the wheat prospects of the Pacific coast, a New York steamship agent stated Saturday that he knew of three steamships which would soon sail from England for the Pacific coast, around Cape Horn, carrying coal and iron, and returning with wheat.

SCIENTIFIC PRIZE OFFER.—A prize of $550 is offered by the Royal Italian Scientific Institution at Venice, for a "statement of the hypothesis recently advanced by physicists on the causes of the phenomena of light, heat, electricity and magnetism."

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of Grange and all national Granges are respectfully solicited for this department.

Lecturer's Communication, National Grange, P. of H.

APRIL, 1882.

Subjects for subordinate Granges for this month are Nos. 7 and 8.

Question 7—Is organization and co-operation a necessity among farmers?

Suggestions—By isolation, farmers live single-handed and are at the mercy of corporate power, and are compelled to submit to the assumed authority unjustly exercised by corporations. Other classes and interests have organizations for the purpose of co-operation, and by the application of its power have gained many advantages, and the farmers made to bear burdens of injustice that a just government should seek to remove. But by co-operative efforts, employed by corporations, through the political instrumentalities to control legislation and government, such removals are prevented, and the burdens of farmers annually increased. By united and consolidated efforts of the farmers *only* can they protect their own interests and secure justice to themselves. Such consolidation cannot be made, nor the efforts employed, without thorough organization. Hence, organization of the farmers is an absolute necessity, and strict co-operation must be employed in all Grange work. By thorough organization and co-operation the farmers can accomplish desirable results.

Question 8—Systematize farm work with a view of obtaining desirable results?

Suggestions—Decide what you can best produce, considering land, tools, teams, help and surroundings. Arrange place of operation, adopt some practical system, and then follow it as closely as circumstances and seasons will admit. Thought and system, properly employed, can be made a profitable substitute for much of the hard labor on the farm. Diversified crops, mixed husbandry, may be made profitable. Exchange thought and experience upon these questions, so as to profit by the educational advantages in the Grange. Demonstrate by public and private acts the necessity and usefulness of Grange organization, and our influence will be exerted for good in the community in which we live and with those with whom we are associated.

Sacramento Granges and Slickens.

There was a general gathering of the grangers of Sacramento county at Enterprise hall, Walsh's station, last week. The *Bee* says: Some 600 persons were present, including the Masters of the various Granges in the county, and visiting grangers from Stockton, Roseville, Sutter county, and other localities. Many farmers addressed the assemblage on current subjects, such as the Sunday law, hydraulic mining, the farmers' picnic to be held near Freeport on May 1st, and matters pertaining to the general good of the people. George Ohleyer, of Yuba City, spoke with much earnestness upon the evils inflicted on the farmers and the State generally by hydraulic mining, and excited the interest of his audience, many of whom followed in a similar strain. The meeting thereupon adopted the following preamble and resolution:

WHEREAS, the business of hydraulic mining, as at present conducted (by using the State's river channels as casements), is destructive of the best interests of the State, and if continued will render our rivers unnavigable and destroy the homes of thousands of our people, and in the destruction of our rivers will turn all our products from the rivers to the railroads; therefore, be it

Resolved, That it is the duty of the State to preserve her river channels, to stop the usurpation by the hydraulic miners of the channels of our rivers as casements for their tailings.

FARMERS' AND GRANGERS' PICNIC.—The farmers and Grangers of Sacramento will hold their annual picnic at Beach's grove, at Freeport, May 4, 1882. The committee of arrangements are P. G. Riehl, J. G. Hite, D. G. Webber, Wm. Johnston, Stanton Myers and J. A. Moore. The committee say that "the parties who advertised to hold a picnic at Beach's grove, under the name of Farmers' picnic, May 1st, have recently advertised their picnic as the Farmers' and Grangers' picnic. They, by that means, undoubtedly intend to mislead people, as the Farmers and Grangers' picnic will be held at Beach's grove, May 4th, as heretofore advertised, notwithstanding the assumption of the name by parties who advertise to hold a picnic on May 1st under that name."

SONOMA GRANGERS' PICNIC.—The Granges of Sonoma county will hold one of their best meetings, in this city, on Saturday, April 29, 1882. At 10 o'clock A. M. there will be a private meeting for members of the Order only; but at 1 o'clock P. M. the doors will be opened for all, especially for farmers. Every Grange and every Granger in the county is invited. Among those who are expected from a distance are the Master, the Overseer, the Lecturer, the Steward and the Secretary of the State Grange, and others of prominence in the Order. Exemplification of secret work, addresses, good music and a pleasant time is promised to all who attend.—*Santa Rosa Republican.*

TEMESCAL GRANGE holds an afternoon meeting at 1 P. M., Saturday, April 15th.

Prices and Productions of California Wool for the Last Ten Years.

Compiled by ALBERT MONTPELLIER, Cashier and Manager of the Grangers' Bank.

MONTHS.	Brands.	Clips.	1872	1873	1874	1875.	1876	1877	1878.	1879	1880.	1881.	1882
			Price per lb. Cents.	Price per lb. Cents	Price per lb. Cents	Price per lb. Cents	Price per lb. Cents	Price per lb. Cents	Price per lb. Cents	Price per lb. Cents	Price per lb. Cents.	Price per lb. Cents	Price per lb. Cents
JANUARY	Northern.	Spring	35	40		—	—	—		—			
		Fall	23@30	18@25	16@23	18@21	13@17	15@20	15@20	12@18	20@30	17@25	16@20
	Southern	Spring	33	36		—	—			—			
		Fall	15@25	13@17	13@17	10@15	9@13	10@14	9@13	9@12	14@20	14@16	10 15
FEBRUARY	Northern	Spring	38	40		—	—	—	—	—			
		Fall	24	29	21	30 15	22 17	23 15	16 15	20 15	20 12	18 20	30 17 25 16 20
	Southern.	Spring	34	38									
		Fall	16	24	14	19 12	16 10	16 9	15 9	14 10	14 9	12 14	20 14 16 10 13
MARCH	Northern	Spring	45	50	20	25 21	25 18	24 15	18 19	24 20	25 15	19 32	37 17 25
		Fall	22	28	18	24 14	18 14	18 15	16 14	18 15	20 11	17	— 16 21
	Southern.	Spring	35	44	15	19 17	20 15	19 11	14 15	18 14	20 12	16 27	32 14 16 — —
		Fall	15	21	12	16 10	13 10	14 8	12 8	12 10	14 9	11 —	— — — 10 13
APRIL	Northern	Spring	45	55	21	25 22	17 21	25 15	19 19	25 20	24 15	20 25	30 20 23
		Fall									—		
	Southern	Spring	37	46	12	18 18	23 17	20 11	14 13	18 15	20 11	14 20	25 15 19
		Fall											
MAY	Northern	Spring	44	53	19	23 22	28 22	27 15	19 22	28 21	25 17	24 27	30 25 27
		Fall											
	Southern.	Spring	35	43	12	18 15	21 16	21 10	14 13	19 14	20 11	15 20	25 17 21
		Fall								—	— —		— —
JUNE	Northern	Spring	48	50	19	23 26	33 22	27 16	21 23	29 18	24 18	28 27	32 25 30
		Fall	—							—			— —
	Southern	Spring	35	42	10	18 18	24 13	20 11	15 15	20 12	20 12	18 18	25 17 20
		Fall	—	—		—	—		—		— —	—	— —
JULY	Northern.	Spring	36	45	20	25 24	30 22	27 15	19 26	32 19	26 18	28 27	32 24 30
		Fall	—	—					—		—		
	Southern.	Spring	32	27	12	19 16	22 12	20 10	14 18	24 12	18 12	19 17	24 15 21
		Fall	—	—							— —	— —	— —
AUGUST	Northern.	Spring	30	38	*20	25 *24	30 23	28 *15	20 *24	30 *18	24 *17	26 *27	32 22 30
		Fall	16	20	14	18 16	20 12	16 13	18 16	20 14	18 18	27 25	30
	Southern.	Spring	22	30	13	20 17	23 14	21 *10	14 *16	22 *12	19 *12	18 *18	25 15 18
		Fall	11	15	11	15 13	17 9	12 8	12 11	15 9	12 13	17 17	24 11 04
SEPTEMBER.	Northern.	Spring											22 20
		Fall	14	18	14	20 15	21 12	15 14	19 14	18 13	18 17	24 15	22 — —
	Southern.	Spring	—										
		Fall	10	14	10	15 12	16 9	12 9	13 10	13 8	12 12	17 11	15 10 14
OCTOBER	Northern.	Spring	—										22 20
		Fall	16	22	15	21 16	23 13	17 15	21 14	18 14	20 20	26 18	25
	Southern	Spring											
		Fall	11	16	12	16 12	16 10	14 10	14 10	13 9	13 14	18 12	15 10 16
NOVEMBER	Northern	Spring											
		Fall	18	24	16	22 15	21 14	18 15	21 16	21 13	18 21	30 18	25 16 20
	Southern.	Spring											
		Fall	12	17	11	16 12	16 10	14 10	14 11	15 9	12 15	19 12	15 9 15
DECEMBER	Northern	Spring											
		Fall	17	23	16	23 16	22 15	19 15	21 16	21 13	18 21	30 17	25 16 20
	Southern.	Spring	—	—	—	— —	— —	— —	— —	— —	— —	—	
		Fall	12	17	11	17 11	16 10	14 10	14 11	15 9	12 15	20 14	16 9 13
Average price per Year	Northern.	Both Clips	Cts 32	Cts 21	Cts 23	Cts 19	Cts 17	Cts 21	Cts 19	Cts 20	Cts 25	Cts 23	
	Southern.		" 26	" 15	" 16	" 17	" 12	" 14	" 13	" 14	" 19	" 17	

Price Nominal. *Years of Highest Price. †The Spring Clip now coming into market, the Fall Clip quotations are omitted until next season. ‡The Fall Clip now coming into market, the Spring Clip quotations are omitted until next season.

Total Production of California Wool for the Last 12 Years and Value of Same.

Years.	Spring Clip	Fall Clip.	Pulled Wool.	Total Product Per Year.	Average Price Per Year.	Total Value Per Year.
	Lbs.	Lbs.	Lbs.	Lbs	Cts.	
1870	10,799,550	6,928,176	82,840	17,810,566	14	$2,493,479
1871	13,134,680	9,052,508	1,000,000	23,187,188	26½	5,744,604
1872	13,[illegible],248	9,709,846	1,000,000	24,023,094	20	[illegible]
1873	18,049,519	12,905,650	1,200,000	32,155,169	18	5,787,930
1874	21,002,276	17,085,505	1,211,000	39,358,781	19	7,674,962
1875	22,746,730	19,225,493	1,560,000	43,532,223	18	7,825,890
1876	30,065,519	24,235,451	2,250,000	56,550,970	14½	8,159,893
1877	29,118,628	20,785,272	2,800,000	52,703,900	17	9,224,182
1878	21,438,900	17,563,600	2,400,000	41,402,499	16	6,624,400
1879	23,134,125	20,644,235	3,125,000	46,903,360	17	7,975,571
1880	22,873,870	20,700,374	2,500,000	46,701,905	22	10,136,313
1881	23,774,977	18,424,982	1,004,810	43,204,769	19	8,208,886
Totals for 12 Years				466,996,674		$86,861,716

The Prospective Demand for Mohair.

A prominent breeder of Angora goats sends us a copy of a letter received from the Tingue Braid and Plush Co., concerning the demand for mohair, as follows:

In reference to your inquiries: There is no limit to the consumption of mohair in future manufactures, provided the breeders and growers will keep always in mind the fact that the standard in the raw fiber must be the product of thoroughbred animals. In the breeding of grades, pure-blood sires, always used, gives the only assurance that crossing with the common goat will give a merchantable mohair that manufacturers can rely upon for immediate and abundant supply, as is well illustrated in the Angora industry at Cape Colony. It is also essential that the growers or commission men, in the purchase of mohair, sort and grade it, as is done by the Asiatic and African producers, that manufacturers, like ourselves, may know what they are buying. The sending into the market of good, indifferent and positively useless material in the same bale is compelling us to make our purchases of mohair abroad, to abtain raw material which we can rely on. We do not hesitate to say that the goods we have made from the best quality of American-grown mohair are better and more salable than those made from imported material, and were the American product to be had in quantity, reliably sampled, we would use it in preference. If, as we understand, Angora goats will live and thrive where sheep cannot exist, we do not see why breeders and growers cannot produce mohair—as do the shepherds of the countries we have referred to—at prices ranging with those of the grades of wool and yet yield them a handsome profit. The better the material, the more profitable the result to all parties. We are in the market as constant purchasers, and have no fear of the production of such a material as we need and use being in excess of the wants or ability of the industry to purchase, if produced by the shepherds in harmony with our suggestions.

WHEAT GROWERS' MEETING.—The Wheat Growers' Association of California met Tuesday morning, in Grangers' hall, corner California and Davis streets, pursuant to the call of the President, H. M. La Rue, and after the transaction of the routine business, adjourned to meet in Stockton, on Tuesday, May 2, 1882, at 2 P. M. The Committee on By-Laws and Constitution was instructed to be ready to report at that time. A large number of new names have been submitted for membership, but it is expected that the meeting at Stockton will be very largely attended by representative wheat-growers from various sections of the State, as business of great importance to the wheat interests will come before the meeting.

DEATH OF REV. L. HAMILTON.—The friends of Rev. Laurentine Hamilton, in all parts of the State, will be pained to learn of his sudden demise last Sunday morning. While reading his sermon he was stricken with serous apoplexy in his pulpit, and died without recovering consciousness. Rev. Mr. Hamilton was greatly loved by his people, and his death causes profound grief. Memorial services were held last Sunday in the Independent church, Oakland, and further services, significant of the bereavement of the church, will be held next Sunday afternoon.

THE arrival of immigrants at New York is likely to greatly exceed in the next two months anything ever before known.

Agricultural Notes.

CALIFORNIA.

LOS ANGELES.

BROOM CORN.—Los Angeles *Times*. Farmers would find it profitable to devote more attention to this valuable product, in view of the fact that it is easily cultivated and realizes a good price at all seasons of the year. The Los Angeles broom factory is compelled to import large quantities from the East on account of the small amount raised in Southern California. It will grow well in any soil adapted to corn, and the ground must be prepared the same as for corn. About two and one-half quarts of seed is sufficient for one acre. It endures drouth better than corn, and possessing a thick foliage, it protects itself against weeds, thus requiring less cultivation. A good yield of brush is about one-third of a ton to the acre. It is cut in a green state and cured under well protected sheds. The seed, when mixed with corn and ground, makes valuable feed for stock and poultry, especially young chickens. The yield of seed is fully equal to that of corn, and requires less expense to harvest. Compared with wheat or corn, as a crop, broom corn is more profitable, and always in demand. The Los Angeles broom factory furnishes seed gratis to those who will undertake its cultivation, and it is to be hoped that the farmers will hereafter give this subject the attention it deserves.

SOLANO.

THE VACAVILLE CANNERY.—Cor. Dixon *Tribune:* The country hereabouts is being resettled, and with the new faces, come improvements. George Brougham, late foreman for Libby, McNeil & Libby, the Chicago meat packers, has established a fruit cannery in the brick warehouse. The engine, boiler and necessary machinery for making cans and packing fruit, is being rapidly put in place. The establishment will have a capacity of 15,000 cans per day, and during the season will employ 200 hands. Vegetables, as well as fruit, will be canned, and an immense business will be done in string beans, sweet corn, sweet peas, tomatoes and asparagus. These vegetables will be hereafter staple crops, and at the low price of one cent per pound, will yield the grower $50 per acre per annum. No more wheat, therefore, will be grown in the Vacaville fruit belt, and the wheat farmer will have to "beat his gang-plow into a pruning hook," or emigrate to Dixon or Montezuma. Before establishing his factory at this place, Mr. Brougham carefully investigated the horticultural resources of Los Angeles, San Jose and Santa Rosa, but found nowhere fruit so admirably adapted to the purposes of the canner. Fruit grown by irrigation is too watery and insipid, and the coast fogs destroy the color of the apricot, and ruin it for canning. This season's pack, estimated at 1,000,000 cans, is contracted to a Chicago house, and it is Mr. Brougham's ambition to enlarge his factory, until he can employ 1,000 men and make the Vacaville fruit belt household words wherever the choicest California goods are used. The inauguration of this pioneer manufacturing industry will help this section in many ways. A home market for fruit, without the expense of freight, boxes, packing, commissions or stealage will almost double the profits of the grower.

SONOMA.

OLIVE CULTURE.—Petaluma *Courier:* Wm. Hill, of this city, in addition to his large planting of vines and fruit trees on his Forestville ranch, is setting out quite a number of olive cuttings. Mr. Giovanini has some olive trees now in bearing in the same neighborhood, which have grown from cuttings planted four years since. Mr. Appleton, of Sonoma valley, is also setting out an orchard of olive trees. Mr. Hill says the trees now in bearing near Forestville are healthy vigorous growers, and the fruit is large and very fine. We have heard of a few trees in this city and other places in the county which are promising.

SUTTER.

THE APPROACHING HARVEST.—Yuba City *Farmer*, April 7: At no time in the history of Sutter county has the outlook for a bountiful crop been brighter or more encouraging to the agriculturist. The floods of a year ago left but little grain to be harvested, and as the land in grain was small, the breadth to be turned over in summer-fallow was correspondingly large. Thus it is that we have one of the best prospects for a large wheat crop ever seen in the county. These remarks apply with equal force to portions of Yuba and Butte counties. The present warm weather is melting out the snow very fast, and all danger of a flood may be considered passed, and the crop reasonably assured.

TUOLUMNE.

EDITORS PRESS.—The deluge of rain, which we in the foothills enjoy, seems to have been general all over the State. We can only express gratitude for nature's bountiful supply of life-inspiring rain. Crops are insured generally. The gardens are now in bloom. It is a season of anxiety for fear of frost; hitherto, no damage has been done, and hopes are entertained for a safe passage through this month. Appearances denote an abundant crop. The peaches are now formed and will soon be past danger. The feed for stock is abundant. The flowers cover the hillsides, and all nature rejoices for the spring time; life and beauty is everywhere apparent. I find a grand truth in the fact of the foothills enjoying the warmth of

the "Thermal Belt." Capt. Harwick informs me that the fig tree is killed by frost. On the plains, some seven miles from Modesto, Stanislaus county, the wood is frozen so as to kill large limbs, and even large trees, a thing I have not experienced for 25 years, having fig trees of that age in continuous bearing. This is the natural home for fruit, both for quality and success. I am glad to notice a revival of enterprise in horticulture, and a desire to excel in the very best varieties. Business seems to receive an impetus from railroad prospects, all of which seems probable.—JOHN TAYLOR. Mt. Pleasant, April 9, 1882.

YUBA

SHEEP AND WOOL.—Marysville *Appeal*, April 8th: Sheep shearing will soon begin, probably in a week or two. The late change from chilly to warm weather has been very beneficial to the lambs. It now appears that the mortality among them was not so great as was at first supposed. Stock men said a while ago that probably 50% of the young lambs had perished from exposure. But several owners of large bands of sheep now report that the loss of lambs will not exceed 10% or 15%. Sheep have been unusually prolific this spring. Four ewes, belonging to Mr. James Traynor, each dropped four lambs, and triplets have been numerous. The *Farmer* says: "Fred Tarke will save all his lambs, and has a fine band of them. Mr. Gould, who lives on the Honcut, has had splendid success with his, and will save 95% cent. Sumner Paine, residing on the Sacramento river, below Meridian, will save 100% of his lambs, and will have a fine band of the immature muttons. Mr. Lybecker says the spring clip promises to be quite heavy, the sheep are in excellent condition, and there has been just sufficient rain to clean the wool and put it in first-class order." No spring wool has yet been received at the Marysville Woolen Mills.

J. R. Rose's Breeding Farm.

The stock ranch of J. R. Rose, in Sonoma county, was lately visited by a reporter of the Petaluma *Argus*, and from his account we prepare the following sketch: The rolling hills, pastures rich in alfillerilla, clover and wild oats, the low lands between his residence and San Pablo bay, covered with luxuriant and waving alfalfa, present a picture seldom seen and nowhere excelled. Large and substantial barns and stables, fences and paddocks may be seen. A large reservoir, on a point 180 ft. above the house, is kept full of pure spring water from the hills above, and conducted wherever needed, and is freely used upon the lawns and flower-beds about the house. In short, almost everything desirable on a well-appointed stock farm can be found here. Mr. Rose has for many years been extensively engaged in raising cattle and horses, and his drove of Devons always leave the State fair well decorated with ribbons. He has discarded all breeds except the Devons, and of this breed it is an admitted fact that he has the largest and finest herd on the Pacific coast. Mr. Rose has roadsters of a high order, and as well bred for trotters as any in the land. He has no track, and never races, and only trains enough to make his colts bridle-wise when they are sold. With his large number of fine-breed mares, and Gen. McClellan, Jr., at the head of the harem, Mr. Rose will produce trotters and roadsters equal to the best. In fact, he already has more fine colts, from one week to three years old, than could be described in one issue of the *Argus*. While old Mac's blood ought to suit the most fastidious seeker after trotters, that of his son is still more fashionable, as it contains on the side of his dam, who was by George M. Patchen Jr., the blue blood of the Bashaws and the Clays, back to imported Messenger. The young horse also has a double cross of Bellfounder, though somewhat remote, as he received one from his mother through the Patchens. Mr. Rose is crossing the Percheron and McClellan, and producing fine specimens of the "horse of all work." They make very stylish, active and large horses, such as are so much sought after by the wealthy brewers of San Francisco. The team at the bay that is attracting the most attention to-day is a matched span of half-bred Normans owned by the Philadelphia brewery, closely resembling several that may be seen upon this ranch. Among those noted, especilly worthy of mention, are Shellamon, a dark dapple gray three-year-old, by the Duke, and from the dam of Nellie R.; Hugo, his brother, one year younger, and Andy, by Crown Prince; also a two-year-old, more stylish, but not near so large as Hugo. A black colt, by crown Prince and a McClellan mare, was led away that day, having been sold to Mr. Shafter, of Marin, that was very handsome and large for his age. He weighed a little over 1,300 lbs., was 23 months old and 15¾ hands high.

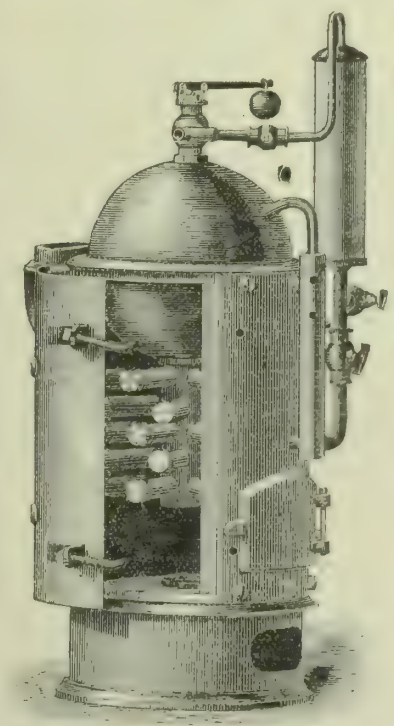
HIGHLAND SPRINGS SANITARIUM.—We notice that Dr. C. M. Bates of this city has recently succeeded Mrs. J. C. Goods in the proprietorship of that popular and healthful resort known as the "Highland Springs Sanitarium" located at Highland Postoffice, near Clear Lake, Lake county. The sanitary affect of its mineral waters are well known.

THE Probate Court has ordered that $600,000 of the O'Brien estate be distributed and that $1,000,000 be reserved for possible creditors.

Woolsey's Steam Dairy Heater.

In the year 1870, Mr. J. S. Woolsey, the inventor of the steam generator shown on this page, came to California, bringing with him a practical knowledge of cheese making, acquired in the now famous district of Ohio—"The Western Reserve." Being of a practical turn of mind, he saw the necessity of a boiler that would furnish steam for a cheese vat, and also run a small engine for pumping water, combining simplicity of construction, economy in fuel and absolute safety in operating, at a cost which would be within the reach of even small dairies. He believes he has met all these requirements in the construction of the machine which we illustrate. There is no rivet work whatever in the boiler, which is made of short pieces of wrought-iron pipe, so constructed as to give the greatest possible fire surface, and to make it perfectly safe, because the effect of expansion and contraction is borne by each piece of pipe independently, and whatever water the boiler contains is always nearest the fire. Should it be necessary from any cause, one or more pieces of pipe can be removed without disturbing the others, and replaced by anyone having a pipe wrench.

Economy in fuel is obtained from the great fire surface of the boiler, and the small surface of the fire-grate, which is only ten inches in diameter in the larger size generator, requiring only a small amount of fuel to keep it covered and thereby preventing the cold air from coming in contact with the boiler. In this particular, it is claimed that no steam generator of like capacity heretofore invented can at all compare with it. One hundred and ten pounds of



Woolsey's Dairy Heater and Steam Generator.

steam has been raised in 20 minutes from cold water, using only one stick of four-foot redwood about six inches square.

But two sizes have thus far been made, either of which will run a small engine, the larger one having a capacity equal to four-horse power. The price of this size is $200, and the smaller one $85.

The absolute safety, and economical working of this machine make it available in a wide range of work. For bath houses and laundries it is excellent, as a given quantity of water can be heated by injecting steam into the tank (or other vessel containing it), from the generator in a much shorter space of time and a less consumption of fuel than by applying the fire directly to the bottom of the vessel, and the steam may be conveyed in a hose or pipe a distance of 100 ft. or more. It is well nigh indispensible to any well-regulated farm. It will run an engine to pump water or saw wood, furnish steam to cook feed for stock, heat water for the bath room, or to scald hogs, cleanse the dairy buildings and implements, or for any other purpose desired, the steam being conveyed through pipes or garden hose, the necessary connections being made.

Although but recently invented, a goodly number are now in use and a large and increasing demand is expected. Mr. Woolsey personally superintends the construction of every machine, and fully guarantees his work. This generator and the improved steam cheese vat it was designed to operate, has received the highest praise from cheese makers. Mr. J. J. Harshmann, of the Anchor cheese factory, in Los Angeles county, who published a record of his product for the year 1881, in the RURAL, used Woolsey's steam generator and cheese vat, and the results obtained are highly satisfactory. Anyone interested in the apparatus can obtain fuller particulars by addressing, John S. Woolsey at Gilroy, Santa Clara county Cal.

Wheat on Hand in the East.

Hon. J. R. Dodge, statistician of the Department of Agriculture at Washington, sends us a statement of the amounts of wheat in the hands of growers in the specified States at the dates mentioned, as follows:

STATES.	March 20, 1882.		March 20, 1881.	
	Per cent of crop.	Bushels.	Per cent of crop.	Bushels.
Ohio	25	9,630,000	30	14,937,143
Indiana	18	5,643,540	28	13,934,692
Minnesota	19	6,830,880	24	9,694,967
Iowa	23	4,197,040	28	9,289,897
Missouri	17	3,467,830	28	8,277,678
Kansas	15	2,986,350	26	5,287,360
Nebraska	21	2,906,400	23	2,972,216
Total		35,662 040		64,393,953

Assuming these results as representing approximately the grain in the hands of farmers, there is still a quantity in the hands of grain dealers, in country and city, a considerable portion of which may be traced in commercial records of stocks on hand.

The consumption of wheat during the four remaining months, for over 14,000,000 people of these States, would be about 21,000,000 bushels, some of which will be supplied from flour already manufactured. In five of these States very little seed will be required for spring wheat. In Iowa and Nebraska, spring-wheat States, and for a small area of spring wheat in the others, about 8,000,000 bushels will be needed for seed, leaving 28,000,000 bushels for consumption and market, nearly half of which may possibly be spared as a surplus. There is also a small surplus in Michigan, Wisconsin, and Minnesota, and on the Pacific coast.

These figures show that the coming crop will find a much clearer path before it than did the crop of 1881. This will no doubt have a good effect upon opening prices.

Look out for Last Year's Fruit Boxes.

EDITORS PRESS:—I respectfully call the attention of fruit growers to the necessity of disinfecting all empty fruit packages kept since last season. On the 3d inst. I examined a lot of empty packages at the steamboat landings in this city. They were sent from San Francisco last November, and have been left exposed to the weather since that time on the wharf. I found 33 pupæ and 26 larvæ of the codlin moth. By placing the pupæ in a warm place, eight perfect moths emerged from the pupæ cases yesterday. The codlin moth may be expected to appear in the orchards within the next 14 days. Therefore fruit growers should disinfect all empty fruit packages on their premises immediately.

By dipping empty packages in boiling water containing one lb. of concentrated lye to each 25 gallons of water used, and letting them remain in this solution two minutes, all insect life in the packages dipped will be destroyed, and it will well repay the grower that attends to such disinfection.

MATTHEW COOKE, Horticultural Officer.
Sacramento, April 11, 1882.

VEGETABLE OR ANIMAL FOOD.—Our esteemed contributor, John Taylor, of Tuolumne county, writes us at length, taking exception to our dissent from his view that the annihilation of the hog would be a blessing to mankind, and asking us to take up the argument in favor of using animal food. We have neither the space nor the inclination for the discussion. The issue is an old one and we do not care to reopen it on its general merits. We are quite willing to give our dietetic reformers an opportunity to describe their materials and outline their philosophy, as a matter of news, and those who desire to worry their inwards can experiment with the new substances and ideas, but we do not propose to adopt their diet nor to dispute their views—unless it be to register a dissent when too sweeping a claim is made. Every one ought to know enough to take what agrees with him and eschew what does not—and that is the whole philosophy of the diet question. If you do not like hog, help yourself to the hominy.

Volunteer Testimonials of Those Who Have Used Booth's Exterminator.

CAMBRIA, CAL., August 5th, 1879.

A. R. BOOTH, *Dear Sir:*—The case of your Squirrel Poison you sent us is good, and has given entire satisfaction. Our customers prefer it to any other. Will order more soon as this is sold. GRANT, LULL & CO.

SAN LUIS OBISPO, CAL.

A. R. BOOTH, *Dear Sir:*—We have tried your Squirrel Poison, and find it the best and cheapest of any that we have ever used, and recommend it to all who wish to get rid of the rodent.

STEELE BROS., Coral de Piedra,
JAS. H. BLACKBURN, Paso de Robles,
P. MCARDEL, Los Osos,
N. NUCKOLS, Old Creek,
and many others.

LEPLAY, the celebrated engineer and scientific writer is dead.

News in Brief.

IT is probable that a Signal Service station will be established at Cape Mendocino.

MARK SHELDON, the well-known Sewing Machine agent, has removed to 9 and 11 First Street.

THE Rev. Charles Wadsworth, who died in Philadelphia April 1st, was well known in this city as former pastor of Calvary Presbyterian Church.

THE Union Pacific Railroad Company's financial balance sheet for the past year shows an excess of receipts over expenditures of $13,111,153.

GUITEAU has sold to a circus manager the suit of clothes he wore when he shot President Garfield, and a sculptor is making a bust of the assassin.

IT costs this country eight hundred times as much for intoxicants as it does to pay salaries of the clergy. The figures are $2,200,000,000 and $60,000,000.

OUR importations of iron and steel, cutlery, machinery, firearms, tools, saws, hardware and other manufactures of these materials amounted last year to $46,668,171, against $63,963,252 for the previous year.

THE American Board of Foreign Missions at Bonter, has been advised by cable from Constantinople that in a region of Turkey, three times as large as Massachusetts, the people are starving by reason of the ravages of locusts. An urgent appeal for succor is made.

JUMBO, the big elephant from London, has been safely landed at New York. As soon as he touched American soil he was treated to a quart of whisky, which he swallowed with a satisfaction becoming any toper. Jumbo conducted himself most appropriately upon the voyage.

ACCORDING to the New York *Sun*, there is a perceptible slackening in the demand for railroad materials. The steel-rail mills have plenty of orders, and the locomotive works have not yet begun discharging men; but locomotives which a year ago were worth $15,000 are now to be had for $12,000.

A LARGE force of workmen are engaged at Indio, a station on the desert, about half way between Los Angeles and Yuma, putting up an eating house, a bunk house for employes, and a roundhouse with six locomotive stalls. Indio is to be made the end of a freight division, and will no doubt prove a great relief to railroad men.

THE motion of the Star route case defenders will probably be overruled and the cases set for the last week of this month. The trials will last two months. Attorney-General Brewster has given up his project of managing the Star route cases in person, and will rely on Mr. Merrick, giving occasional encouragement by his presence in the court-room when convenient.

STAHLSCMIDT and Ward report that the British steamship *Euphrates*, 1,716 tons, the British ship *Escombia*, 1,957 tons, the ship *Blue Jacket*, and the ship *W. J. Rotch* sailed about ten days ago from Hongkong. The steamship has between 2,000 and 2,500 Chinese, and the ships about 1,000 more. The steamship is due this month. The Chinese are intended for railway work, and other shiploads will follow.

IT is said that Charles Crocker is contemplating the erection of a magnificent art edifice on his property on the north side of Post street, between Kearny and Dupont. The building is to be five stories in hight, the two upper stories to be rented to artists, and the ground floor to be used as stores, while the remainder of the building will be made the home of the Art Association, Society of Decorative Art, and other art societies.

THE Eastern Railway Company of France has just made a new essay in the application of electricity. A train equipped with the most recent and improved electrical apparatus proceded from Paris to Gretz. The carriages were connected by electric communications, the brakes acted by electricity, and all the compartments of the thirteen carriages composing the train were lighted by electric lamps. The results of the experiments were completely satisfactory.

CHINO RANCH.—We recently learned that Mr. Richard Gird, the owner of this extensive rancho, has the past season, built some 50 miles of wire fence. He attaches laths along the top wire by means of staples, the ends of the laths being about one foot apart. This costs but $4 to $5 a mile extra, and prevents all stock from breaking the wires by accidental contact. Mr. Gird has lately purchased Hancock Johnson's Short Horn herd of 120 head, including 24 thoroughbred bulls. He has also made other extensive and notable purchases. The Chino ranch embraces much excellent land and Mr. Gird seems destined to make advantageous use of it in the raising of improved stock, and we shall look with interest for a full account of his enterprise in the nesr future.

CATTLE BREEDERS' MEETING.—We receive a note from Robert Ashburner, Secretary, informing us that the annual meeting of the California Short Horn Breeders' Association will be held at the office of Montgomery & Wright, First St., San Jose, at 11 A. M., Tuesday, April 18, 1882. Essays, addresses and discussions will no doubt be in order, and matters of interest to breeders will be brought out.

Thoughts on a Tramp.

(Written for the RURAL PRESS by JOHN MONTGOMERY.)

Thou sturdy vagrant of the rural way!
Come hither, Tramp, I would dissect thee, stay.
Thou art a tenuous phantom-myth, a shade,
A feather in the scales, when fairly weighed
'Gainst human excellence. But to me
Thou art a study, such, the grub may be,
Though scant in outward lineaments of worth,
Denied by nature at its barren birth—
Yet, take thee all in all, the bad and good,
A proper subject, thou, to furnish food
For one square meal's reflection. Take thy place,
That I thy mental portraiture may trace.

Within thy moral mechanism, say,
What locomotive speeds thee on thy way,
Thus to run a side-track, wholly thine,
In opposition to the common line?
Is it innate turpitude impels?
Or can it be a haughty soul rebels
Against the load society would pile
On thy broad shoulders—cares of every style,
Social and domestic? All around
Exists a struggling multitude, close bound
In meshes of their duties, laws and grave
Responsibilities, who fear to brave
The censure of their fellows. Dost thou scorn
These men of care by racking conflicts torn?

Naught to thee the philosophic quest,
The search for subtle rules to guide thee best.
No tortuous road for thee to wealth or fame,
The nearest path to happiness thy aim.

Let's criticise thy logic. Who the sage,
Thou or the farmer? battling against the rage
Of storms and all elements combined,
Hitching his hopes to fleeting clouds and wind,
From whose moist forehead fall more teeming drops
Than heaven deigns to send his thirsty crops.

Thou or the merchant? he whose anxious brain
On the soft pillow seeks repose in vain;
Debtors, faithless, haunt his sleepless eye;
To free the grasp of creditors he tries;
Crushed by these spectral incubi he lies.

Thou or the candidate? Doth his lot
Awake in thee, O Tramp, an envious thought?
To independence lost his soul is bowed
In humble homage to the voting crowd;
No free-born thought he speaks in accents bold,
Stunted his mind to fit the party mold.

Given the problem: Which of two to choose,
A life of freedom, leisure and repose,
Or one by cares and heavy burdens pressed;
Thou'st chosen that, my tramp, which suits thee best:
To feel the heart exult in roaming free,
Untrammeled over highway, plain and lea,
To hear the birds' perennial concert sweet,
To press the perfumed blossoms at thy feet;
No east, no west, no north or south to draw
Thee from thy caprice dear—thy only law.
Rich in certain wealth for one day's need,
Rich in to-morrow's hopes—'tis bliss indeed!

Nordhoff, Ventura Co., Cal.

No Third Mrs. Perry.

"She ain't the same sort as your first wife, Henry," said Mrs. Perry, with an ominous closing of her upper lip over the lower one.

Mrs. Perry called herself a devout Christian. All through the country she was held in estimation as one of the salt of the earth, comforting beside a sick bed, efficient in a neglected household, and welcome everywhere. And when Alice May came to the old homestead, as her son's second wife, she naturally looked up with reverential affection to the venerable white-capped old lady.

"Sweetheart!" the young husband had said, looking fondly into the eyes of his bride, as they stood under the blossoming boughs of the quince trees on that soft May night when first he brought her home, "do you think you can be happy here?"

"Oh, Harry," the young wife had replied, "it is like a little paradise,"

But Mrs. Henry Perry soon found out that Lilac farm was something more practical than her ideas of paradise.

"Don't know how to churn!" said Mrs. Perry, senior, in amazement. "Why, Alice, where were you brought up? Harry's first wife thought nothing of churning 20 lbs. of butter of a morning, besides doing all the housework, and getting breakfast for four hired men."

Alice colored to the very roots of her luxuriant chestnut-brown hair.

"I know nothing about the country, dear Mrs. Perry," she said, for she was too shy to use the tender term "mother," unless by the special invitation which had not yet been accorded. "I was educated, you know, at a boarding-school; and after I graduated I taught school until I met Henry, and——"

"I dare say," said Mrs. Perry, dryly; "but if you are going to be a farmer's wife it is high time you acquainted yourself with some of the duties pertaining to your position. My son's first wife, now, was a model."

Alice looked eagerly up.

"Please, Mrs. Perry," said she, "tell me what she used to do. Of course, I have had no experience, but——"

"Well," said Mrs. Perry, looking up to the top fringe of the curtains and touching the tips of her fingers reflectively together, "she had a faculty, Dorothy had. She was a famous cook. She baked fresh pies every day, for no one can be expected to like stale pies. Her hot breakfast biscuits were like flakes of snow, and we mostly had waffles for supper, with honey and fresh apple-sauce. She always got up at four o'clock of a Monday morning to do the washing. Henry's shirts have never been the same since Dorothy was removed. And I wish you could have seen her ironings. The sewing circle met here once a month, and the teas Dorothy got up were the talk of the neighborhood. And there was a 'Sister of Industry meeting' here once a fortnight, and the 'Singers' Symposium' every other Friday. She was a noble-hearted Christian, Dorothy was! And then she did all the family sewing. She could not reconcile it to her own conscience and her husband's income, she said, 'to hire such work done.'"

And Alice, who had committed the enormity of having a dress made by a dressmaker, colored scarlet and hung her head.

"Then at butchering time," proceeded relentless Mrs. Perry, senior, "Dorothy always made the tripe and sausage-meat and corned the ham herself; and she cleaned house four times a year. She was a masterhand at quilting, and she always made her own bonnets. A woman can save so much for her husband in that way. As for the butter and cheese, I think, if she hadn't died so suddenly, poor thing, that she could have beaten any record in the country!"

Alice sighed deeply. How could she, a slender, inexperienced girl of 20, hope to cope with these marvelous attainments?

"Henry never told me all this," said she.

"I suppose he has thought of it many a time," said Mrs. Perry, senior. "But perhaps he didn't like to allude to it while you was playing on your melodeon and reading your books. Dorothy never got any time to read!"

"But if you'll teach me," pleaded Alice, "I will do my best to learn"

She locked the melodeon, put away the the books and portfolio, and her basket of fancy needle-work, and set herself resolutely to work to fill the place of the departed Dorothy.

"Why, what a little housewife you are," said Henry, laughing when she showed him the tray of golden butter that she had churned, and succeeded in burning her fingers at the ironing fire and reducing her pretty complexion to scarlet, in cooking buckwheat cakes for breakfast.

"I want to be one," said Alice, wistfully.

She cut up squares of bright colored calico into patch work, she studied the cookery-book until her head ached, she caught a heavy cold working over butter in the damp dairy house, and sprained her wrist washing clothes, which, after all, looked dim and dirty. She rose early and went to bed late; she counted eggs, mixed up whitewash, made herself sick chopping up sausage meat, and strained her back lifting a kettle of pickles off the fire, and still she strove resolutely on.

"I should like to do just what Dorothy did," she said to herself. "I don't think Henry is quite pleased when I am so busy in the kitchen of an evening that I cannot spare time to come in and hear him read the Waverly novels aloud. And my feet ached so this morning with the cream skimming that I could not walk with him to the haying ground. But I am doing my duty, and that ought to be reward enough!"

That same afternoon, however, poor Alice was forced to flee to her own room with sick headache, and seek the refuge of her pillow. There Mrs. John Bonney, a cheerful little neighbor, found her.

"Sick, are you?" asked Mrs. Bonney.

"I'm not very well," acknowledged Alice.

"Ah," said Mrs. Bonney, "I thought so!"

"What do you mean?" asked Alice.

"Why, you've been killing yourself by inches!" said Mrs. Bonney, "as fast as you could. I've seen it all. I'm not your next-door neighbor for nothing."

"I am trying to do my duty," pleaded Alice, with filling eyes. "I'm trying to be like my husband's first wife!"

"Fiddlesticks!" said Mrs. Bonney. "Like Dorothy Parker, indeed! Why she was nothing on earth but a household drudge, and she finally drudged herself to death, without anybody being particularly sorry for her. She never visited, she never read, she never kept up with the progress of life's march around her. Any machine could have filled her place."

"Mrs. Bonney, you ought not to talk so," said Mrs. Perry, uneasily.

"It's the truth," said Mrs. Bonney. "However, do as you please. It's a privilege which people generally claim. I have observed; kill yourself if you like. Perhaps the third Mrs. Perry will be a little more sensible."

So Mrs. Bonney put the bouquet of tea-rose buds, which she had brought, into water, and tripped laughingly home. While Alice, clasping her hands over her throbbing temples, tried to ask herself which was right, herself or Mrs. Bonney, and in which direction the path of duty really and actually lay.

And it was at this critical moment that she heard the nasal, monotonous voice of her mother-in-law downstairs talking to her husband, and uttering the sentence which opens our sketch.

"She ain't the same sort as your first wife, Henry," said Mrs. Perry, Sr. "And she never will be, let her try as she will. She hasn't got the faculty, you see."

She lay there quite still and quiet, with closed eyes. She never opened them when Henry Perry himself tiptoed into the room, and believing her asleep, tiptoed out again, muttering to himself:

"Poor little daisy, she is entirely done up!"

The next morning, however, Alice rose and dressed herself with care.

"Bless me," said Mrs. Perry, Sr., "where are you going, Alice?"

"To the village," answered Alice.

"What for?" cross-questioned the elder matron.

"To engage a dressmaker and seamstress, first," said Mrs. Perry, Jr., "and to get a strong girl to do the housework, next."

"A——girl!" screamed the old lady. "Dorothy never——"

"No," said Alice; "I know she never kept a servant. But Dorothy cleaned and churned and sewed herself out of the world. I've no intention of settling my own career in that sort of a way. I find that I can't do the work of this farm myself without breaking down my health, and shutting myself out of the world of books and science. I do not think my husband desires such a sacrifice——"

"Of course I don't," said Henry promptly. "The house has been as lonely as a convent since you buried yourself in the kitchen and dairy. I married you for a companion, not a drudge. Have half-a-dozen servants, if you like, Alice, only let us have books and music and pleasant wood-lawn walks again."

"Thank you, dearest," said Alice, as she kissed his forehead.

Mrs. Perry, Sr., rolled up her eyes and clasped her hands, and declared *sotto voce* she didn't know what this world was coming to.

Mrs. Bonney was feeding chickens at her own door when Alice Perry returned from her walk to the village.

"Are you better?" asked this young red republican, smiling cordially.

"Thanks!" Alice answered, "I am much better. I have just engaged a sewing woman and a stout Swedish servant girl to do the housework at the farm. I am no longer ambitious to do as Dorothy did."

And Mrs. Bonney waved her sun bonnet in the air, and exclaimed:

"Bravo! There will be no third Mrs. Perry, after all."

And her words were prophetic.

Importance of Warm Clothing.

EDITORS PRESS:—I will venture to say that nine-tenths of the diseases that afflict mankind are due, primarily, to cold (excepting, of course, accidents and hereditary diseases), and my experience and observation have convinced me that they are preventable, in most cases. The prophylactic with which this may be accomplished is not new; it is simple, more agreeable and cheaper than medicine, and accessible to all. It consists in the conservation of the heat of the body by proper and sufficient clothing. Science, ancient and modern, teaches us the great truth, that energy of mind and strength of body are the effects of warmth, while depression of spirits and bodily weakness result from cold. Heat is vigor and life, and cold is disease and death. This is a wide subject and embraces other questions, but I shall confine myself to the important one, namely, "clothing."

We all know how easy it is

To Catch a Cold.

When the circulation is accelerated, and the blood thrown upon the surface, opening the pores of the skin and producing perspiration, we need only to expose ourselves to a draft to bring on a chill and sneezing, followed too often by most serious consequences. The chill is the result of the rapid evaporation of the moisture, by which process a great deal of heat is abstracted from the body. Weakly persons and children are most susceptible, and our north wind is particularly severe upon such persons when exposed to its refrigerative power under the conditions above named. The same agency, also, abstracts heat, though in less degree, by radiation, even when the body is in its normal condition. Comparative protection against these great evils may, however, be secured by insulating the body with good non-conducting clothing, which retains the heat and prevents *rapid* evaporation. If the over-heated body is allowed to cool off *slowly*, the danger is greatly mitigated, if not wholly averted. It is not the heaviest or thickest material which is the warmest. Wool is an excellent non-conductor, and is 300° better than cotton, and still better than linen. One thickness of wool is the equivalent of four thicknesses of cotton or linen in point of conductivity, and is also far more porous than the fiber plant. The latter absorbs the moisture and sticks to the body, leaving no air between and forming only one smooth evaporative surface, from which the moisture quickly evaporates, producing cold, whereas a wool or hair cover, being never entirely soaked, does not cling closely to the body, but forms a surface which is broken by air bubbles, permitting the moisture to percolate to and evaporate *slowly* on the outside, thus conserving the heat, while the skin remains in a blood rich state, and may perspire more freely than when exposed to a quick refrigeration, by evaporation and radiation from cotton or linen clothing. The

Importance of these Facts

Cannot be over-estimated, and people who wish further light and testimony, are urgently referred to the works of Dr. Pettenkofer, Prof. of Hygiene at the University of Munich, and Dr. Jaleger of Stuttgart, who have chosen, with highly satisfactory results, and earnestly recommend, for the conservation of the heat of the body, "only the material which nature has given for the same purpose to those mammals which are the most nearly related to man, namely, animal wool, even avoiding pocket and other linings of cotton."

In conclusion, I beg to say that I have tested the value of woolen clothing upon my own person and the members of my family with the most happy results. Several years ago our under-clothing consisted mainly of fiber plant; and we frequently contracted colds, resulting in obstinate chronic catarrhal and bronchial difficulties beyond the reach of approved pharmaceutical measures. We adopted the "normal clothing"—some members wearing double woolen-flannel under-garments—and since then have not only not taken any fresh colds, but the chronic difficulties referred to have disappeared, and this explains my enthusiasm over woolen clothing, and excites my sympathy for the little children who suffer most from improper and insufficient clothing, my observation being that a large majority wear no woolen clothing at all, and only a very few, especially girls, wear woollen under-clothing below the hips; below, the short, loose skirts are only a shield against the wind, while below the knee the only covering is a thin cotton stocking. In the light of these facts people, especially women, should strive to overcome the inertia of established habits and public opinion, and adopt the normal clothing of Pettenkofer and Jaeger, which will certainly increase the longevity of the community and enhance its comfort and enjoyment. LAYMAN.

The Farmers and the Saloons.

EDITORS PRESS:—Hollister seems already to feel the dead certainty of the temperance-reform success, and has made improvements in its water-works that insure an ample supply of water, even should every citizen of the county sign the pledge, and every saloon close its bars against the thirsty ranchmen, who are now accused of being the largest supporters of the many Hollister saloons. This is too grave a charge to be believed, and must only be considered a slanderous rumor; and many sensitive farmers with respectable families are determined to prove an *alibi* from now on till close of harvest. But the question is passing around in earnest, "Who supports this large number of saloons?" Some of the farmers are now almost forgetting their daily chores—are losing sight of some of the politicians' sure cures for high taxes, and insurance agents' policies for life and property, and think they see some work of reform right within their reach, that is not second in importance to any national issue, or any question in political economy or pertaining to domestic happiness. "Yes," we say, "who supports them? and for whose special benefit do they run? What are the real practical benefits reaped by the people as individuals and as a community?"

But especially would I like to know how much I, as a farmer, am benefited by the liquor retailer as expressed in the average saloon. During the harvest season, almost every neighborhood has heretofore been favored with a temporary saloon, as if it were for some important purpose; and now it does seem sensible and in order to inquire and honestly talk over the whole subject, as you do about curl-leaf, smut and blight, and whether anybody knows a better remedy for these enemies to man's success than has yet been tried. The country towns are trying to do what they consider reform work. They meet strongly organized forces, opposing every forward move. But some claim that the uncertain position of farmers, if not openly avowed friends of the saloon, is the reformer's greatest source of discouragement. Yes, Mr. Timid, this is a very delicate question to touch. You had better save your popularity, and let others get the ice well broken. Nicknames may be hurled at those who attempt to work on the problem of the "greatest good to greatest number," or who believe that in some sense "I am my brother's keeper."

A 20-stamp quartz mill was being erected in Nye county, Nevada. A small cabin was erected near by, for a saloon, the owner of which coolly remarked: "I expect to have more men working for me than the mill company will employ." Another in the same business, in Colusa county, Cal., claimed to have more men working for him than Dr. Glenn employed on his 60,000-acre farm. A few years since, in Mendocino county, the lovely little valley of Potter was favored with two saloons. The inquiry got out, "Who supports them?" It was repeated, and the common response was soon heard: "Not I," "Not I." And the result was death by quick starvation to both institutions before the day of option voting; and no signs of deep mourning spoke of the community's bereavement. But this little letter only wishes to mention, as a matter of news, that farmers in this, as well as in other parts of the State, are becoming interested in the question of how to secure harvest hands that will be ready to do full labor-service on Monday morning. All agree that a Sunday drunk unfits for work on Monday—disqualifies physically and mentally. I will not try to solve this problem for them, for they are fully equal to the task when they join forces and take their position for self-defense.

B. W. C.

OLDEST TIMBER IN THE WORLD.—The ancient temples of Egypt are believed to contain the oldest timber in the world, in the shape of dowel pins, which are incorporated with stone work known to be not less than 4,000 years old. These dowel pins, according to the appearance they present, are thought to have been made from the tamarisk or shittim wood—in ancient times a sacred tree in Egypt.

The Man With the Flail.

It carried the beholder back to 30 years ago, when the thrashing-machine was heard only at rare intervals, and the honest farmer spread his golden stalks on the clean barn floor and flailed away with such tempered blows that not a kernel was broken. The man who had it, sat down on one of the benches in the West Circus park. The rare sight of such an article halted every pedestrian, and the man had to keep explaining over and over: "Well, I'll have some beans to shell out this fall, and I kinder thought 'twould be easier to flail 'em out. The hardware man told me he had to send to Vermont for it." Pretty soon along came a gray-headed alderman, and when he saw that flail he looked ten years younger all at once. "I handled that for over ten years," he said, as he picked it up and spit on his hands. "Seems like old times to get hold of this hickory again." He stepped out one side to give the crowd an exhibition on the grass, and his success was great. At the second blow the flail end hesitated in mid-air, wobbled about and finally came down with a whack on the patriot's head, making him see more stars than a winter's night ever brought out. He dropped the weapon with the remark that he was already ten minutes late in keeping an appointment, and he was rubbing his skull as far down the street as he could be seen. The next man to try it was one who got off a passing car under the idea that a dog fight was in progress. "A flail? Ha! ha! Why, I haven't seen a flail since I was married," he chuckled, as he reached for it. "I presume I have flailed a thousand bushels of wheat in my time. You boys stand back there." The boys retreated, and the man lifted the flail on high and patted the grass in a vigorous manner. "Yes, my stint used to be 20 bushels a day," he continued, "and though I do say it myself, I ——" something happened. He dropped the flail, seized his jaw and danced off as if he had springs under him, and although a dozen voices asked what hit him, he refused to tell. By-and-by a third man came sailing along, and when he saw the flail he remarked that his father had used one like it nearly all his life, and was called the smartest flailer in New Hampshire. "Can't you use it?" inquired one of the crowd. "Why, of course. If you boys want to see how our fathers got their wheat to mill, I'll give you a little exhibition. Here, Bub, hold my hat." He buttoned his coat, moistened his hands and began work. The first blow nearly broke a man's knee; the second cracked against a boy's elbow; and at the third the flailer grabbed the top of his head and sat down, with a subdued look in the corners of his mouth. "Well, I guess I'll be jogging along," said the owner of the flail, as he rose up. "It's all in getting the kink of it. A feller who makes twists and wobbles a special t tidy, won't git his head broke over twice a day, but a green hand might as well sit down under a brick-kiln durin' a tornader. Day, gentlemen." *Detroit Free Press.*

WOMEN'S STRENGTH.—The strength of women lies in their hearts. It shows itself in their strong love and instinctive perception of right and wrong. Intellectual courage is rarely one of their virtues. As a rule they are inclined to be restless, and excitable, allowing their judgments and actions to be swayed by quick emotions of all kinds, but above all, it is in their hopefulness and endurance that they find their chief power. Who is the last person to give up hope in the case of a member of the family who has apparently gone to the bad? What mother or sister with deep and ardent love for such will ever cease to cherish hope or endure suffering on their account? The patience of women is proverbial, and their whole lives are bound up in their affection. Few people will deny that love in one form or another makes up the beauty of life to women. It enters into all she does. Any work outside her immediate circle is undertaken most often from pure desire to help some one else to know something of the mysterious happiness of love. Unlike men, women chiefly look for personal intercourse with those for whom they are working. If their interest lies among the poor, they are desirous of sympathetic personal acquaintance with them; and very little work of a lasting kind has been done by women without their own influence of love being brought to bear on the individual case.

TRUE MUSK, which is used so largely as a perfume, is taken from certain glands in the musk deer; but its high price has caused Mr. Fairthorne, an American pharmacist, to substitute the similar secretion of the musk-rat. For a long time the Russians have used these skins to scent and preserve their garments; but no attempt has hitherto been made, we believe, to extract the perfume in a serviceable form. Mr. Fairthorne takes ten or twelve musk-rat skins, and cuts them into small slips. These are allowed to macerate for a week or two in a pint of alcohol, with the addition of two drachms of soaked lime. On filtering the liquid, a very fragrant tincture, having a musky smell, three times stronger than the ordinary extract of musk, is obtained. Mr. Fairthorne employs it instead of the real tincture of musk for the manufacture of eau de Cologne.

THE *Nineteenth Century* contains a protest against the Channel tunnel, on the ground that it would involve England in military dangers and liabilities from which the island has been free.

YOUNG FOLKS' COLUMN.

Science Club.—No. 7.

All communications for this department should be addressed "RURAL PRESS Science Club," Berkeley, Cal.]

Notes on Collecting.

One of the interesting facts in the collection of shells is their local distribution. The collector will find the same shells within a few miles of coast under widely dissimilar circumstances, and again, where the surroundings seem in every way similar, he will look in vain for the shells he naturally expects to find.

And shells are undoubtedly greatly influenced by their surroundings, the same shells showing a marked difference in their proportions and colors. Collectors could materially aid one another by publishing a list of their species, and the situations in which they are found; whether on sandy beaches, exposed points of rocks, or in bays and sheltered coves.

I publish in this report of the "Science Club" the following list of shells collected by myself at Moro bay, Foro Point, and two miles of sandy beach between these two points. I give the names of only such as I have taken alive and know to be here:

Moro bay: Moneceros lapilloides, Lunatia lewissii, Cerithidea sacrata, Littorina scutulata, Acmæa patina, Cardium corbis, Tapes staminea, Macoma secta, M. nasuta, Saxidomus nuttallii, Schizothœrus nuttallii, Tholadidea penita, Zirphœa crispata, Mopalia muscosa, Ostrea lurida.

In the bay there are vast numbers of the little "shield urchins" or "sand cakes" (Scutella striatula) and a few very large starfish.

Foro Point: Purpura saxicola, P. canaliculata, Littorina planaxis, Chlorostoma funebrale, Acmæa patina, A. pelta, A. persona, A. spectrum, Lottia gigantea, Mytilus californicus, Mopalia muscosa, Ischnochiton magdalensis. Here there are found great numbers of the common five-fingered starfish—yellow and purple and occasionally a fine specimen of the polygonal-shaped variety.

Sandy Beach: Nassa fossata, Olivella biplicata, O. bœtica, Pachydesma crassatelloides, Tellina bodegensis, Donax californicus.

At Moro rock, at the entrance to the bay, there are found a great many abalones (haliotis). Here, I think, in deeper water, are the rock oysters (Hinnitits gigantea and Anomia lampe), as I find these shells frequently washed out on the beach.

I intend soon to visit other points on the coast of this county, where I hope to find some species I have not yet met with. I trust some others of our shell collectors will give us a list of their species and the benefit of their experience in collecting.—G. W. MICHAEL, Jr., Moro Bay, San Luis Obispo Co.

Exchanges Wanted.

C. K. Tower, Nevada City, Cal., writes: "I have gold, silver and copper ore, gold and rock sulphurets, crushed, petrified, agatized, carbonized, opalized and silicified wood, petrified pitch, manzanita wood, shells from the Sandwich islands, and moss agate. These I will exchange for Indian relics, ocean curiosities, fossils, rare minerals, or anything suitable for a cabinet.

A. W. Butler, Secretary of the Brookville Society of Natural History, Brookville, Indiana, offers Eastern for Pacific Coast land and fresh-water shells. Send list of duplicates.

Chas. C. Allen, Eureka Springs, Arkansas, will be glad to obtain some of our common land and fresh-water shells in exchange for those of Arkansas and Florida. Correspondence solicited.

Miss Edith Bradley, San Buenaventura, Cal., wishes to exchange the natural history forms of the southern coast with members of the "Club," which, of course, will or nill, are the subscribers of this paper. Those interested outside, we suppose, may be called honorary members.

Frank Harrison, Princeton, Bureau county, Ill., wishes "shells, petrifactions and specimens from the Big Tree region, Yosemite valley, Geysers; ores (ex-cept lead), and Indian relics. I have fresh-water shells, fossils and corals from Florida."

Mrs. S. F. Lewis, Stony Point, Sonoma county, would like to exchange several species of our northern-coast shells for those of southern beaches.

John L. Legro, Franklin Falls, New Hampshire desires to exchange fine polished chiastolites and many other minerals for those of California; by the way, some of the finest specimens of Suisun marble and onyx, that we have seen, we found in the cabinet of Mr. Roth of Petaluma; some cut and polished favosites from Iowa were not only beautiful, but very interesting. Our Californian aragonite makes a handsome appearance in a cabinet. Some of our beach pebbles are very valuable. We do not mean those little quartz forms our children gather in bottles, but those larger and often rounded stones which contain madrepores—choanites, ventriculites and other zoophytes which they so highly prize in Europe and which must have flourished in our seas, ages ago. Nothing would delight us more than to travel, hammer in hand, from Del Norte to San Diego in search of them.

Several questions have been asked the "Club," during the past few weeks—how to make naturalists' dredges, preserve insects and birds, and for data with regard to the geology of California. We have answered by letter.

The Little Children's Watches.

Yesterday, an old man entered a Little Rock store, and, taking from his pocket an old buckskin pouch, he emptied two coins on the counter, and then, after regarding the silver for a few moments, said:

"Mister, I want to buy some goods to make a dress."

"That money is mutilated, old gentleman. This twenty-five cent piece has notches filed in it, and this fifty-cent piece has been punched. You see, they have been abused. I can't take them."

"Abused," said the old man. "Abused?" and he took up the fifty-cent piece and looked at it tenderly. "And you won't take it on account of the holes. Heaven grant that I did not have to offer it to you. Years ago, when my first child was a little girl, I punched a hole in this coin and strung it around her neck. It was her constant plaything. At night when she went to bed we'd take it off, but early at morning she would call for her watch. When our John—you didn't know John, did you? No. Well, he used to come to town a good deal."

"Where is he now?" asked the merchant, not knowing what to say, but desiring to show appreciation of the old man's story.

"He was killed in the war. I say, that when John was a little boy, I strung this quarter around his neck. One day his watch got out of fix, he said, and he filed these notches in it. He and his sister Mary—that was the girl's name—used to play in the yard and compare their watches to see if they were right. Sometimes John wouldn't like it because Mary's watch was bigger than his, but she would explain that she was bigger than him and ought to have a bigger watch. The children grew up, but as they had always lived in the woods they were not ashamed to wear their watches. When a young man came to see Mary once she forgetfully looked at her fifty cents. "What are you doing?" asked the young man, and when she told him she was looking at her watch, he took it as a hint and went home. After this she did not wear her watch in company. Well, Mary and the young man married. John went off in the army and got killed. Mary's husband died, and about two years ago Mary was taken sick. When her mother and I reached her house she was dying. Calling me to her bed, she said: 'Papa, lean over.' I leaned over, and, taking something from under her pillow, she put it around my neck and said: 'Papa, take care of my watch.'" The old man looked at the merchant. The eyes of both men were moist. "Do you see that boy out there on the wagon?" he said, "Well, that is Mary's child. I wouldn't part with this money, but my old wife, who always loved me, died this morning, and I have come to buy her a shroud." When the old man went out he carried a bundle in one hand and the "watches" in the other.

GOOD HEALTH.

BEANS AS FOOD.—The nutritive value of beans is very great—greater than almost any other article of food in common use. Considering their richness, they are probably the cheapest food we have, but somewhat difficult of digestion, probably owing to the fact that we rarely cook them enough and masticate insufficiently. In preparing beans for the table, they should first be well soaked in cold water and then thrown into boiling water and cooked until of a medium consistency, between a fluid and a solid, neither too thick nor too thin. They require some acid on them when eaten, and a sufficient amount of salt to render them palatable. They may be eaten with potatoes or other vegetables which contain more starch and less albumen, rather than with too much bread or meat. In Germany there is a process patented by which beans and all leguminous seeds are reduced to a very fine flour, and rendered capable of being used as food by the most delicate persons. We have samples of this flour, which equals in fineness the best wheat flour, and it is used extensively for making soups for invalids. These soups are worth a hundred times as much as beef tea. There is a fortune awaiting any one who will prepare a flour from beans as perfect as this flour from Germany. Bean soup, rightly made, is exceedingly delicious and wholesome, and ought to be used more extensively than it is.—*Sanitarian.*

A REMEDY FOR TOOTHACHE.—Dr. F. P. Atkinson describes, in the *Practitioner*, an English medical work, a novel form of treatment for toothache, to which he was led by Dr. Murrell's results with nitro glycerine in angina pectoris. Being afflicted with severe toothache, and proceeding on the similarity in effect following the employment of nitro-glycerine and nitrate of amyl, he applied to the aching tooth cotton wool, saturated with Richardson's compound anæsthetic ether, which contains the nitrate. Instant relief ensued, which was maintained for four hours by a pledget of wool previously soaked in laudanum. Dr. Atkinson adds that a 1% solution nitro-glycerine has the same effect in stopping pains as nitrate of amyl; and thus a means of relieving a most distressing complaint is opened up.

DOMESTIC ECONOMY.

LADY FINGERS.—Take one pound of powdered sugar, and one pound of sifted flour, warm a pan, put in the sugar, break into it fourteen eggs, beat both together with a whisk until light; then add the grated yellow rind of two lemons and the flour, and mix well and lightly in; now put your batter into a pointed canvass or gutta-percha bag, having a round, tin nozzle at the pointed end, and press out the mixture in the form of fingers upon sheets of paper; dust them with fine sugar, and bake in a quick oven to a delicate fawn color. When cold turn over the sheets, and with a brush wet the paper, and in a few minutes the biscuit will come off easily; stick two together, and they are done.

MAKING CHOCOLATE.—Grate one ounce of of chocolate, put it in nearly one pint of cold water, set it on the stove and let it come to a boil, then add one quart of cold milk and as much sugar as you have chocolate. Let it once more come to the boiling point. Stir it carefully from the bottom. When the sugar is entirely dissolved take it from the stove and to the quantity here given add one teaspoonful and a half of vanilla. If you can have a little cream, whip it and drop one spoonful in each cup before pouring the chocolate in. Of course the quantity of chocolate can be varied, if not to your taste.

SPONGE PUDDING.—Take twelve eggs, one quart of sweet milk, one-quarter pound of sugar. Make a blanc-mange of the milk and flour, adding the sugar when cooked. When cool, add the eggs, the whites and yelks having been beaten separately and as light as possible. Pour the mixture into a pudding dish, place the dish in a pan of boiling water, and put it in the oven. Bake till firm. Be careful not to bake too long. Serve hot or cold with whipped-cream sauce, flavored and sweetened to taste.

RESTORING VELVET.—It is not always convenient to hold a bulky piece of velvet over a tea-kettle when the pile has been flattened by shop wear or by water spots. An easier way is to wet a towel thoroughly and fold it over a hot iron. Hold the iron, wrapped in this way, directly over the spotted part of the velvet, so that the steam will reach that part. Do not let the iron touch the velvet, as it is only the steam that is wanted to lift the matted pile.

PANDOWDY.—Wash a quart of dried apples, soak them over night in cold water, stew them soft in the same water, with sugar and spice to make them palatable; put the apple sauce thus made into an earthen baking dish with a tablespoonful of butter, and cover it with a rich paste. Bake the dowdy until the crust is done; then remove it from the oven and break the crust down into the apple with a spoon. Use it hot or cold.

INDIAN PUDDING.—One quart of milk, two heaping tablespoonfuls of Indian meal, four of sugar, one of butter, three eggs, one teaspoonful of salt. Boil the milk in the double boiler. Sprinkle the meal into it, stirring all the while. Cook twelve minutes stirring often. Beat together the eggs, salt, sugar and half a teaspoonful of ginger. Stir the butter into the meal and milk. Pour this gradually on the egg mixture. Bake slowly one hour.

LOAF CAKE.—Take three cups of sponge dough (like pancake batter), one cup of sugar, one cup of flour, three eggs, beaten separately, one-half teaspoonful of soda, dissolve in a little warm water; one teacupful of raisins, nutmeg and cinnamon to taste. Beat sugar and butter to a cream; make it as you do a cake, before you mix with the dough. Put in the raisins the last thing. Let it rise the same as bread and bake an hour.

HINTS ON IRONING.—If starch sticks to flat-irons it can be removed in a much better way than to scrape it off with a knife, as the particles are almost sure to fall upon the garment you are ironing, and so make trouble; tie a lump of beeswax in a clean bit of cloth, and rub the hot iron on this; it will remove the starch at once. Always wash flat-irons before using them, even when they look clean.

APPLE FLOAT.—Pare and core twelve large green apples, boil or bake in as little water as possible, and press through a fine hair sieve when cold; sweeten to taste, add the whites of two eggs well beaten, and then beat the whole together until stiff. Grate nutmeg over it. To be eaten with cream.

BROWNED POTATOES.—Mash your potatoes with milk, butter and salt; heat as irregularly as possible in a dish, and hold a red-hot shovel close to them. They will brown more quickly if you glaze them with butter so soon as a crust is formed by the shovel; then heat it again and repeat the browning.

STEAMED PUDDING.—One coffee cupful of buttermilk, one-third of a cupful of sugar, one egg, a little salt, a heaping teaspoonful of soda, about three and one-half teacupfuls of flour and one small cupful of raisins. Steam two hours.

BAKING PIES.—To prevent the juice of pies soaking into the under crust, beat the white of an egg, and brush the crust with it. To give a rich brown to the upper crust brush that with it also.

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SAN FRANCISCO:

Saturday, April 15, 1882.

TABLE OF CONTENTS.

GENERAL EDITORIALS. — Woolsey's Steam Dairy Heater; Wheat on Hand in the East, 285. The Mammoth, 289. The Week; Dairymen Organizing against Oleomargarine; Meeting of the State Horticultural Society, 288.
ILLUSTRATIONS.—Bayley's Arrangement for Artificial Fowl Raising, 281. The Mammoth—from a Restoration by Prof. Henry A. Ward, 289. Woolsey's Steam Dairy Heater, 285.
CORRESPONDENCE.—Wayside Notes; Carpinteria; San Benito County Notes, 282.
HORTICULTURE.—The Woolly Aphis; Orange Culture, 283.
THE PUBLIC LANDS.—The Forfeited Railroad Lands, 283.
THE DAIRY.—Sweet Cream Butter, 283.
PATRONS OF HUSBANDRY.—Lecturer's Communication, National Grange, P. of H.; Sacramento Grange and Slickens; Farmers' and Grangers' Picnic; Sonoma Grangers' Picnic; Prices and Productions of California Wool for the Last Ten Years; Total Production of Wool for the Last Twelve Years and Value of Same, 284
AGRICULTURAL NOTES, from the various counties of California, 284-285.
HOME CIRCLE.—Thoughts on a Tramp, (poetry); No Third Mrs Perry; Importance of Warm Clothing; The Farmers and the Saloons, 286. The Man With the Flail; Women's Strength, 287.
YOUNG FOLKS' COLUMN. — Science Club—No. 7; The Little Children's Watches. 287.
GOOD HEALTH.—Beans as Food; A Remedy for Toothache, 287.
DOMESTIC ECONOMY.—Lady Fingers; Making Chocolate; Sponge Pudding; Restoring Velvet; Pandowdy; Indian Pudding; Loaf Cake; Hints on Ironing; Apple Float; Browned Potatoes; Steamed Pudding; Baking Pies, 287.
QUERIES AND REPLIES.—The Præparturiens Question; Alaska Evergreen Blackberry; Failure with Short Cuttings, 290.
AGRICULTURAL ENGINEER.—Farm Engineering, 290.
POULTRY YARD.—Poultry Diseases on the Pacific Coast, 292-294.
THE STOCK YARD.—Judging Stock at the Fairs, 294
MISCELLANEOUS. — Imported Lemons in California, 290. Can Insects Discriminate Different Colors, 294. J. R. Rose's Breeding Farm, 285.

Business Announcements.

Poultry—Geo. B. Bayley, Oakland, Cal.
White Lead & Rubber Paint—Whittier, Fuller & Co., S. F.
Agricultural Implements—Baker & Hamilton, S. F.
Big Hedge Poultry Yards—San Mateo, Cal.
Egg Food—B. F. Wellington, S. F.
Agricultural Implements—Jackson & Truman, S. F.
Agricultural Implements—Geo. A. Davis, S. F.
Palmer's Plant and Vine Protector.
Red Clover—W. C. Needham, San Jose, Cal.
Farming Lands—W. S. Reynolds & Co., S. F.
Rubber Hose—Goodyear Rubber Co., S. F.

The Week.

Another generous storm has freshened confidence and enlivened vegetation. Drying winds which led many to grow apprehensive, have thus been thwarted, and already the preparations for harvest are begun. It is true that evils may yet be encountered, but the common calculation now is for a fairly good crop. It is idle to talk about an immense yield of grain this year—unless one talks with a view of depressing values. It is probable that a good average will be reached, but not enough to interfere with quick sales at fair values.

We give space this week to some matters of interest to the growers of animals, but we have not received as much of this sort of information as we desired. We would like our readers, who breed stock of any kind, to be more free in communicating their results and experiences. Our correspondence brings at least ten letters concerning the growth of fruit to one on the growth of farm animals. We would not have less fruit, but we would be pleased to have the stock breeding and growing interest, in all its phases, more frank in the transmission of ideas, practices and results. We await a shower of growers' notes.

Dairymen Organizing against Oleomargarine.

The first gun against oleomargerine has been fired from Bodega, and the butter makers of that famous district seem determined that the counterfeit shall not override the genuine, without an effort on their part to prevent it. The following will show that a definite plan of procedure is outlined, and if all communities of dairymen will take up the issue, and organize in their own neighborhoods and send delegates to a central and general meeting, there will be a power aggregated which the coming Legislature cannot refuse to recognize. It will also be potent to curb any disposition which commission merchants may have to dabble in the profitable but disreputable compound. The following are the official records of the Bodega meeting to which we refer:

EDITORS PRESS:—Saturday, April 1st, the dairymen of Bodega met and adopted the enclosed preamble and resolutions. They feel justly indignant that some commission merchants, to whom they have entrusted the sale of their produce, will be guilty of this fraud upon their interests.

We do not dispute the right to make imitation butter, and to sell it as such; and consumers have the right to buy it and eat it, if they wish. But commission merchants to send East for the stuff, and to efface the Eastern marks upon the packages, and brand it as California butter, and to make it into rolls, and stamp it to imitate our butter, and put it into our boxes to cover the fraud, is an injury to our business; and any commission merchant who will continue in this fraud should suffer the penalty of losing his trade in the genuine article.

If oleomargerine is as good and wholesome as is claimed for it, why need they represent it as genuine butter? but sell it upon its own merits. They know if they are compelled to brand it what it really is, it would not be consumed, to any extent. Dairymen are determined to take a stand, and try to check this great fraud upon their business, and, if necessary, to establish a house for the sale of the genuine article only.

It is to be regretted that the last Legislature, in its wisdom, could not give us a better law to protect both consumer and producer against this fraud. An effort will be made to get a law passed by the next Legislature strong enough to meet the case; and I think we will, unless "bull butter" proves to be stronger than the people.

E. H. CHENEY.

The Action.

WHEREAS, several commission merchants in San Francisco, engaged in the sale of dairy produce, are importing a compound known as oleomargerine, and selling the same as dairy butter; and whereas, it has come to our knowledge that they work it over into rolls, and stamp it, to imitate genuine dairy butter, and sell it as such, and put it into dairymen's boxes, to cover and facilitate the fraud; therefore be it

Resolved, by the Dairymen's Association of Bodega, That we consider it a fraud, an injury to our business, and a fraud upon the consumer, and that we consider any commission merchant, who has solicited and obtained our patronage, guilty of this fraud, as unworthy of our confidence and support.

Resolved, That we call upon all dairymen, throughout the State, to unite with us, and form similar associations, for the purpose of protecting ourselves against this fraud; and, after such organizations have been formed, that representatives from each association be appointed to meet at some central place, that we may take concerted action, and perfect some plan to protect ourselves against this fraud upon our interests.

Resolved, That after these associations have been formed, and commission merchants have been informed of our actions, that we pledge ourselves, individually and collectively, that we will patronize no house that will continue in this fraud upon our interests.

Resolved, That our Secretary send copies of these resolutions to the RURAL PRESS, Petaluma *Argus*, and Santa Rosa *Republican*, for publication.

Signed by 60 dairymen.

Bodega, April 8, 1882. E. H. CHENEY, Secretary.

This is a good start. A local club of 60 dairymen will be a good foundation to build upon. Similar clubs should now be organized in all dairy neighborhoods. Resolutions of similar tenor should be adopted and signed by all. Delegates should be named at the same time to represent the local organization at a central meeting, the time and place for which can be fixed upon whenever a goodly number of delegates is appointed. Let these delegates bring the records of the local meetings and the strength of the determination against the fraud can be measured. In many cases, enduring dairymen's organizations have sprung from the necessity of meeting just such issues as now confront the California butter maker, and beneficial results can certainly be attained here, as they have elsewhere. Let the local meetings be held, and send us the reports for publication in the RURAL PRESS that all neighborhoods may be led to share in the movement.

CAMELLIAS.—The camellia crop around the bay has been, so far as our observation goes, an exceedingly fine one this year. The importation of new plants from Japan continues in large volume, and they have been sold cheaper than ever before. A camellia show will doubtless be one of the floricultural institutions of the future. Such displays attract much attention abroad. We read that an exhibition of camellias was opened on the 8th of March, at the Botanical Gardens, Regent's Park. The exhibits, which were tastefully arranged in the corridor, comprised some 200 plants, and were remarkable for their variety, almost every shade of color being represented. Some of the plants were over six feet high, the flowers on them being generally exceedingly large and well developed. Amongst the specimens which attracted attention were the popular *Alba plena* (white camellia), the *Benneyii*, the *Bonomiana* (white, flaked with rosy crimson), the Countess of Derby, and the *Romaniensis* (white, mottled with lake).

Meeting of the State Horticultural Society.

The regular monthly meeting of the California State Horticultural Society was held Friday afternoon March 31st, at the Academy of Sciences, Professor E. W. Hilgard presiding. F. Rhoda of Brooklyn, J. H. C. Bonte of Berkeley, and A. Sbarboro and Josephine Clifford of San Francisco were elected members. A paper treating of the irrigation, drainage and agriculture of Spain, was received from Prof. Andrew Llaurado, corresponding member of the society at Madrid. Prof. Hilgard spoke of the special value of the treatise because of the similarity of natural conditions in Spain and in California.

Grafting over Fruit Trees.

The leading subject for discussion, "Grafting over Fruit Trees," was introduced with the following letter of inquiry:

Secretary State Horticultural Society:—I have purchased a farm on which are from 9,000 to 10,000 trees of paper-shell almonds. The trees are all very sound and thrifty, but only one here and there produces a crop of nuts. Heretofore the orchard has been a financial failure. I found that for years little or no attention has been paid to pruning and cultivating. Is it likely that this is the reason of non-productiveness? I propose to put new heads on most of the trees; propose to cut off one-third to one-half the heading branches and graft in the bark as soon as practicable; cutting the branch with a sloping cut under side, and putting in, say, two grafts at apex, which will be squared off a little. I think this will heal over quicker than a square cut. I think dormant buds will start on base of remaining branches, which can be budded in coming summer. I propose putting plums on north side and apricots on south side of orchard. I would like to get the opinion of some of your practical orchardists on my proposition, also as to the best varieties of the above-named fruits for market and canning purposes.—R. HOSKIN, Marysville, Cal.

Discussion on Mr. Hoskin's Letter.

J. Shinn.—I should first answer that it is quite practicable to re-graft the almond. It is an important question because many have unprofitable almonds which they wish to change. It is practicable. My neighbors have tried re-grafting two or three years, and have done well. I am doubtful about putting in apricots. Re-grafting is certain with plums of some varieties. The Egg plum always takes well and makes a good connection. Some other varieties also do well; perhaps not Washington. Coe's Golden Drop will probably take. If I had an old almond orchard and the sap was running, I should slash off the whole top. When the buds start I would leave only those which are needed to bud into, and rub off other buds. I have topped off peach trees and they did well by budding the new shoots in August. The buds made good growth. Almonds can be changed to peaches as well as plums.

W. H. Jessup.—No doubt, if one can afford to wait, it is well to do as Mr. Shinn says, as the buds will take better in new wood than old; but this gentleman proposes to cut just where he wishes to put in grafts now. I would advise him to cut off what he wants to graft and leave the other branches to grow this year. I would not advise him to put apricot directly upon almond, but if he can afford to wait for a plum graft to grow, then he can, by double work, put in his apricots in the plum wood. Paper shell and hard shell take grafts better than the Lanquedoc—few seem to take well in the latter. Hungarian, or Bulgarian prunes, or Yellow Egg or Imperial grafts grew 11 ft. in a season on a sort of mongrel almond. Apricot directly on almond stock pulls out.

Mr. Shinn endorsed the remark about Languedoc. It is not a thrifty grower; so with an orchard not in good heart, it is not so sure work to graft at once where it is to stay, but let new wood grow, and growth from the graft will be vigorous.

Mr. Jessup.—I don't like cutting off the whole top. You must protect the stump or you will have sap souring, etc. I don't like cleft graft. Use the slice graft, using grafting bands—strips of old sheeting or calico, dipped in boiling wax. If old cloth, it is not strong enough to strangle the bud, and the growth will burst the bands. The bands will adhere well and be air-tight and water-tight and sustain the scions.

Mr. Wolleb read the following:

Renewing the Tops of Large Trees by Grafting.

Many books on fruit culture recommend simply: Cut off the branches and graft on them. It is not good advice or practice to cut off the tops of a tree and graft in one season, because the scions will furnish but a comparatively small amount of leaves to elaborate the sap, and the tree would be greatly enfeebled and in many cases killed. Therefore, the time of the operation ought to be extended to three years; that is, graft one-third of the tree one year, another third the second and the last third of the tree the third year. Even then it is not indifferent how you proceed. It has been recommended that the grafting be commenced at the upper branches, that one-third of the top only be operated upon, the succeeding year another third lower down, and the third year the grafting to be completed on the lower limbs. If this advice is followed, the beauty of proportion in a tree is destroyed, as grafts inserted at the top of a tree grow vigorously, those put in the next season less so, while at the lower branches they are exceedingly weak for the reason that all the vigor is concentrated at the top by the violent successive prunings the tree has been subjected to. The lower branches ought to be the strongest in a well-balanced tree, and the opposite is the case if we proceed to graft at the top. If the lower branches are commenced upon, we have a moderate growth from them; at the second pruning these first-grafted limbs receive and assimilate a larger supply of sap and grow with more vigor, while those at the top being operated upon last, the limbs below have had the advantage of one and two years' growth respectively, and will always preserve their relative proportions of strength. Thus the tree will be more or less symmetrical, according to the habit of the variety employed.

Discussion.

Prof. Hussman.—I would take two years, not three. Take every alternate branch and next year take those left. I think grafting lower limbs will merely throw growth into upper limbs, and not into the grafts, as Mr. Wolleb argues. What kind of graft is best? My way is grafting in bark late in the season. I kept scions cool, and when the sap was in active motion I slipped in a graft into the bark, just as I slip in a bud and bandage tightly. It works well on apple and pear. Budding is better than grafting for stone fruits. Leave on limb to continue circulation of sap. Some varieties of plums do well on peach; almonds on peach; apricot on peach. Washington and Jefferson do not take. Imperial Gage, Coe's Golden Drop and German prune take well.

Mr. Jessup.—Remarked that he saw little difference in variety in working apricot on peach. He does not lose 1 in 100. The best stock for the apricot is the Mirabolan plum, and the peach is next. The Mirabolan grows readily from cuttings and is the best stock to graft on. It suckers but little. The wood is very hard. It forms strong roots, and grows in dry as well as in wet soil. He thinks it is the coming stock for this country. He does not believe in taking three years to graft over as Mr. Wolleb read.

Prof. Hussman said his plan was to effect it in two years. In Missouri they could not leave the large cuts as they do in this State.

Mr. Coates gave his recipe for grafting-wax: Two and one-fourth lbs. resin, 1¼ lbs. beeswax, ¾ lbs. tallow; mix together well, and pull it until white. It will not melt or run down. Mr. Coates said the saddle graft, as made by Mr. Lewelling (peach on peach), was the most perfect graft he ever saw; but this is difficult, and ordinary workmen will not do it well. He prefers budding—cutting off all limbs early in winter, saving a group of dormant buds. Cover the cut with shellac varnish. The Petite prune and Fellenberg prune do excellently on almond, especially the former. It is a mistake to use melted wax, or not to make wax right, so that it runs. Good wax, put on thinly and spread out carefully, does not run.

Mr. Shinn's recipe for wax is as follows: One lb. tallow, two lbs. beeswax, four lbs. resin.

Rules for Horticultural Fairs.

Mr. Dwinelle's report on rules for horticultural fairs was re-read.

Mr. McKoon moved that the meeting receive and approve the report.

Prof. Hussman suggested that the committee should be instructed to submit written reports; that names should be corrected by the committee, and that there should be classes for professionals and amateurs.

On motion, the report was filed for future reference.

Hardy Shrubs.

Mr. Wolleb read his paper on hardy shrubs, which was printed in last week's PRESS.

Mr. Klee made some remarks on the botanical characteristics of the acacias, illustrated with the different varieties in bloom.

Prof. Hilgard remarked that possibly the acacias would be the vanguard of advance into the treeless regions. They form leaf mold, and thus form a seedbed for seedlings. The acacia *lophanta* performs that function to a remarkable degree.

J. V. Webster recommended the planting of cypress trees. He had an avenue on his place in Haywards lined with forty-feet-high cypress trees, and he found them to be an excellent wind-brake. His residence was immediately south of the avenue, and he never knew when the dreadful north winds were blowing. Moreover, his neighbors, for half a mile south, spoke of the protection they felt from the cypress.

If every section line in the San Joaquin valley were to be planted with cypress, and the trees cultivated for two or three years, they would thereafter take care of themselves. They would very much reduce the plague of wind in that valley. Professor Hussman, of Napa, recommended the deciduous cypress, which he was convinced would grow on dry land. It is a beautiful tree, and supplies the cypress lumber and shingles of commerce. This suggestion met with much interest, one member declaring it was a very important matter, and should be thoroughly investigated, as if the decidious cypress would grow on dry ground, the now barren plains of the San Joaquin valley could be beautifully and profitably utilized.

Prof. Hilgard remarked that the deciduous cypress grows in the Southern States, both in wet swamps and on dry hummocks. Prof. Hussman noted that the tree grew on calcareous soils, and as California was largely of this formation it would probably be well adapted to the tree.

The subject for the next meeting is "Early Fruits and Vegetables," and all members are invited to bring forward their productions and their experience.

A TEAMSTER encamped near Arroyo Grande, San Luis Obispo Co., was visited by a man with a revolver the other night, who compelled him to deliver his purse, containing $43, and got safely away with the coin.

Mammoths.

Giant Forms of Extinct Animal Life.

Mammoth remains are among the very earliest forms of extinct animal life which attracted the attention of observers of our earth and its natural products. Theophrastus, 312 years before Christ, first recorded elephant bones as being dug from the earth in Greece, and 400 years later Pliny noticed the same fact in Italy. Both of these naturalists, penetrated by the spirit of their times, considered them as *lusus naturæ*, formed in the soil where they occurred by some plastic force of nature, and never having really been parts of living creatures.

Later on—in the 17th century—mammoth bones were found in many parts of central Europe and Italy and discussed by the philosophers of the time, who usually recognized their elephantine character, but accounted for their origin by referring them to the Noachian deluge or, in some districts, to the elephants brought by Hannibal from Africa in his invasion of the Roman Empire. A few still adhered to the *lusus naturæ* theory. Thus, in 1696, the skeleton of a mammoth was dug up at Tonna, near Gotha, in Germany, and was described by William Ernest Tentzel, a teacher in the Gotha gymnasium. He declared the bones to be the remains of an animal that had lived long before. The medical faculty, in Gotha, however, examined carefully these actual bones—saw their condyles, articular surfaces, trochanters and nerve foramina—and then decided officially that this specimen was only a freak of nature, an imitation by mineral matter working beneath the earth, of an organized creature which once roamed on the surface.

It remained for the great Cuvier to dispel this darkness and uncertainty and to throw the light of scientific study and intelligent induction upon the question of the

Nature of these Fossils.

In January, 1796, he announced to the French Institute that his examinations had shown him that these were the remains of fossil elephants, and that they were, furthermore, of species different from any now living on the globe. He says: "This idea has opened to me views entirely new concerning the theory of the earth." From that time the study of the mammoth and of its congener, the mastodon, went on upon a sound basis, and discoveries were made in great numbers and from all directions. It was soon found that the whole continent of Europe, from France and England to the Ural mountains, and from Sicily to northern Russia, was thickly strewn with mammoth bones in its alluvial and post-pliocene deposits, while those of the mastodon occurred in the pliocene proper and in the island of Malta in the miocene. Further research showed the mammoth in India, Persia, Siam, all northern Siberia, China and Japan. In both the continents of Europe and of Asia, these remains were found to be more sparsely distributed in the southern lands, and to abound in vast numbers on the northern limit, showing thus a strange disagreement in distribution with the elephant of the present day' which is confined, in its wild state, to the tropical portions of Africa and to the equally hot countries of India, Sumatra and Borneo. All the northern shore of Siberia, particularly in the deltas of the Lena and the Yenessei and in the islands lying off their coast, is crowded thick with the leg-bones, tusks and molar teeth of these extinct mammoths. In some places the combined action of sea waves and river freshets have piled these bones together in quantities so vast that their number and volume is something almost incredible. This is particularly the case at the Loichovian isles, north of the mouth of the river Seva. The tusks are here so numerous, and are in a state of such excellent preservation, that they form an important article of commerce, and are annually shipped in large quantities to Russia and to England, there to be employed by the ivory turner in the same works as is the living ivory of Asia and Africa. The preservation in Siberia of these countless large bones has long been a wonder to the inhabitants of these countries who had no reasonable explanation of their source or origin. With an absurd credulity they attributed them to a gigantic mole, which, they thought, burrowed in the ground, living on roots, and only appearing at the surface during the darkest nights. To this creature they gave

The Name of Mammoth,

Which, in their language, is a name applied to any burrowing animal. This name has been universally accepted in Europe, but limited to the species studied by Cuvier and described by his friend Blumenbach as *Elephas primigenius*. Bones of this species abound in nearly every part of Europe, although as we have just noticed, the strange fact exists that they become less and less abundant as we approach southern lands—the present home of the race. In short, the Mammoth was once an inhabitant of north temperate and frigid zones; now its descendants, reduced in numbers and degenerate in size, inhabit the tropics. Its remains occur in the Eastern hemisphere, chiefly in beds of gravel, clay and other material of post-pliocene age In the extreme north they have still a further *situs*.

More than a Hundred Years Ago,

Not only their ivory but their carcasses were known to exist in Siberia, imbedded in solid ice. The first discovery was on the border of the Alaseia river, which flows into the Arctic ocean, in lat. 72°, or 6° north of the Arctic circle. The body, largely imbedded in ice, was still standing erect, and was almost perfect. The skin remained in place, and the hair and fur were still attached in spots. In 1772 the body of a perfect two-horned rhinoceros, covered with hair, was found preserved in frozen gravel near the Wiljni, a tributary of the Lena, in lat. 64°. The head and feet of this animal were brought to St. Petersburg; but as they had been largely divested of their skin covering, the report of their excellent preservation, as of that of the first-found mammoth, was at that time generally discredited.

The Most Celebrated Discovery

Was made in 1799. A Tungusian fisherman named Schumakoff was exploring along the coast of the frozen ocean for ivory. He was near the mouth of the river Lena, in latitude 70°, when he discovered in a huge block of ice a dark, misshapen mass whose nature he could not clearly make out, as it was too deeply imbedded. But it had two great tusks of ivory which he greatly coveted, but could not then detach. Cold seasons followed, and it was not till five years later, in 1804, that he reached the spot again. Then he found that the ice bank had melted, and the mammoth, for such the great object proved to be, had fallen out by its own weight. He cut off the tusks, which he took on a long journey south, to Jakutsh, and sold to an ivory dealer. It so happened that a few years later, 1808, an English traveler named Adams, visiting that city, saw the tusks and heard the story of their finding. He organized a party and returned with the Tungusian to the place where the latter had found the great beast. But it was no longer complete; for in the years which had intervened since the first discovery, the nomadic tribe, Jakutski, had been feeding their dogs upon the flesh, which they cut off for the purpose. Also the wild beasts of the region, the white bears, wolves and foxes, had come in for their share of the food, and had dragged the bones around and trampled the hair into the surface earth. Adams collected with care this skeleton, which, although mainly cleaned of flesh, lacked but one fore-foot of being complete. He also took the skin of one side of the great creature, with about forty pounds of the long black hair and undercoating of reddish wool which covered it. At Jakutsk he was so fortunate as to secure, by purchase from the ivory dealer the two great tusks. The next year he transported the whole a weary journey of 7,000 miles to St. Petersburg, where the precious relic was purchased for 8,000 roubles by the Emperor Alexander and placed in the museum hall of the Imperial Academy of Sciences. The great animal still stands there mounted—a huge skeleton, with skin over parts of its head and one leg, and the hair still adhering in places.

The Museum of Natural History in Paris and the Royal College of Surgeons in London were each presented with portions of the skin. Such is, in brief, the story of

The Siberian Hairy Mammoth,

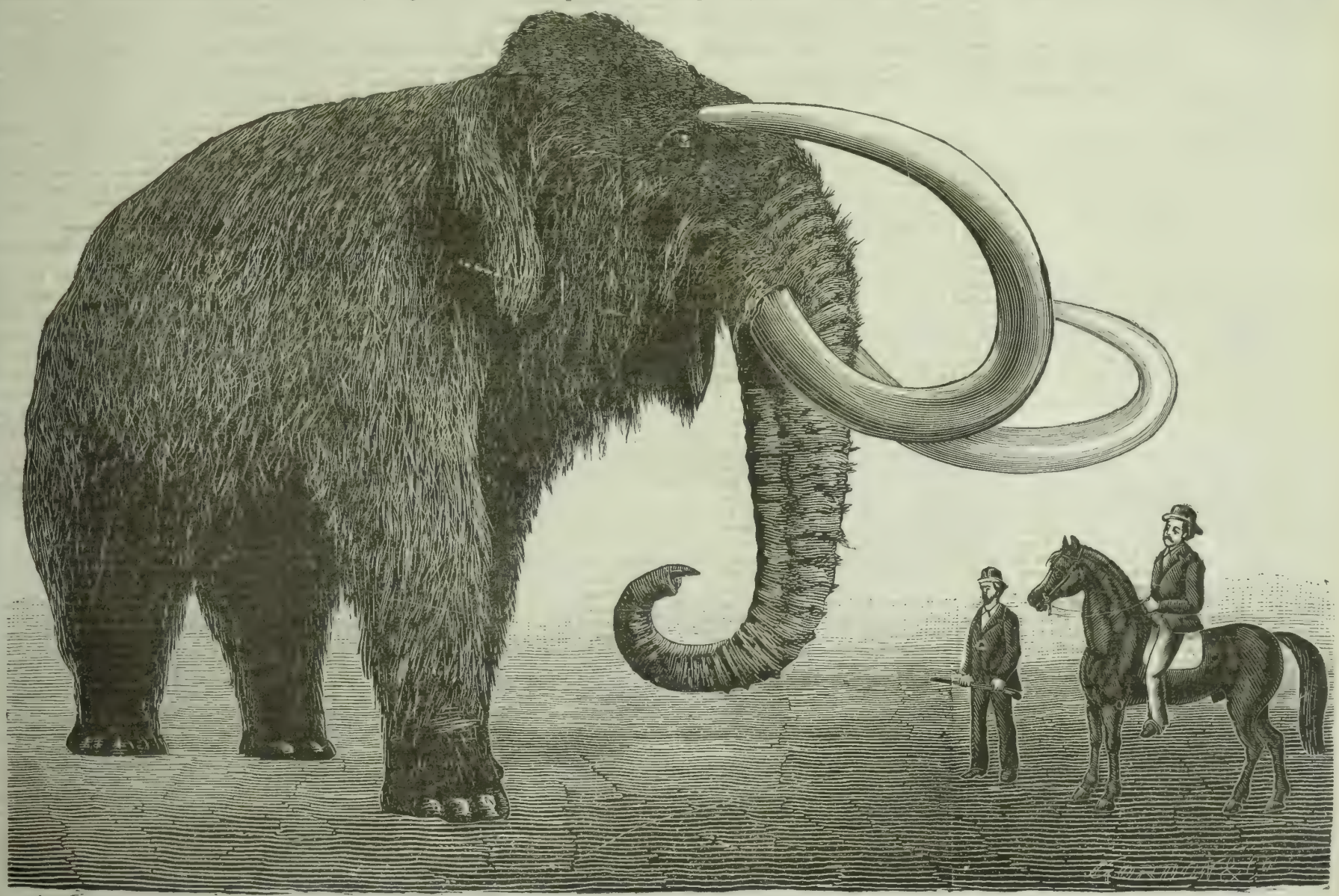
(Or the "St. Petersburg Mammoth") as it is often called. This specimen, with the two others mentioned first as having been found in the same country, stands unique in the whole history of fossil remains in the fact of the preservation of the soft parts of the animal—its flesh and sinews—in connection with the bones. Such an occurrence is phenomenal in the most extreme degree, and only its most complete authentication, by the preservation of the specimen itself, has secured acceptance and belief. To account for this phenomenon, geologists biased more or less by the known habits of living elephants, which are restricted to tropical regions, have had recourse to the hypothesis of a

Complete Change of Temperature,

Either suddenly brought about by a great geological cataclysm, or due to the secular changes of land and sea level, which have ever been at work in the past as at the present day. Unquestionably, the intense and possibly increased cold of that northern region has been the cause of the preservation of these remains. But the heavy coating of hair and wool, so different from that of its modern elephant congeners, indicates clearly that the mammoth was adapted for life in these cold regions, where it roamed in herds and was a permanent resident. The fact that the rhinoceros found here should also have been clothed with thick hair, while its modern relative in tropical regions is as naked-skinned as the elephant, is an additional and powerful argument for the belief that the climate of northern Siberia was of its present winter severity at the time that these great pachyderms lived there. The fact seems to have been generally overlooked that an animal, organized as the teeth of the mammoth plainly indicate, to gain its subsistence from the branches or woody twigs of trees, is thereby rendered independent on the procession of seasons which regulate the development of leaves or fruits. The food of such an animal is perennial, to be obtained as easily during the months when snow covered the whole plain, as during the shorter period when the surface of the country was green with its transient summer coating of shrubs, moss and lichens. Any animal clothed like our mammoth, or like the reindeer of Greenland, with a natural garment capable of

Resisting the Rigors of an Arctic Winter.

Would have found permanent pasturage on these inclement and desolate plains which lie across all Siberia between the 60th parallel and the perpetually frozen shores of the icy sea. Forests of hardy shrubs still cover the frozen shores of this portion of Siberia, so the question of food for so mighty an animal really presents no difficulties whatever. Had our knowledge of the mammoth, indeed, been restricted, as in the case of all other extinct animals, to its bones and teeth, the analogy of these with the modern elephant would have made it a hazardous speculation to have conceived *a priori*, that it had a clothing so different as to suit it to this northern residence. The actual finding has settled this difficulty, and shown us that here, as in many other cases, the proven facts of na-



THE MAMMOTH—FROM A RESTORATION BY PROF. HENRY A. WARD, ON EXHIBITION IN THIS CITY.

ture outstrip the ventures of reasoning. The peculiar

Physical and Climatic Conditions

Of the region where these frozen mammoths have been found give us a not difficult or improbable solution to their strange entombing. It will be remembered that the country is, in its general aspect, a broad plain, more than 1,000 miles wide, traversed by great rivers which rise in the higher and warmer regions more than 20° of latitude to the south. In the early spring these rivers in their upper courses at the south, send down a freshet of water, which, as it reaches the lower country, finds the bed of the stream still bound in solid ice. Over this ice, over the banks of the river, the waters, pressed on from behind, force their way, and, spreading over the entire country on either side, change it to an inundated plain, until limited to the north by a line where the water steadily freezes, and further progress is stayed. Along this line, waving with the conformation of the surface and oscillating with the period of the year, the wandering mammoths were expressly liable to be caught and entrapped in the deluge of freezing water. Thus frozen in, and entirely enveloped with a thick covering of ice, some have, as we have seen, remained covered until the present day and their flesh consequently preserved. That by far the greater number of the great herds should have left us only their bones, teeth and tusks, is furthermore in full accordance with the fact that most of them died an ordinary death, with the climate at a temperature which was insufficient to preserve their carcasses. Those which were overwhelmed and entangled in ice were the exceptions.

In Europe, at least, the mammoth seems to have been

Coeval With Early Man.

In the bone caverns of England, France and Germany, those great charnel houses of early animal life, there are found scores and hundreds of bones of the mammoth commingled with those of the rhinoceros, hippopotamus, aurochs, cavern bear, and other animals now quite extinct, or living in other continents. It is clear that the mammoths did not themselves crawl into these caves, often with an exceedingly narrow opening, and die there; nor do the surroundings often allow the idea that they were brought there by a flood of waters. In many cases the abundant marks of teeth and the gnawing of the bones show that they were dragged to the cave by wild beasts that made it their den and fed upon them. But in a few special cases the cavern has been the home of early man, who brought there the remains of animals which they had hunted and killed.

In These Caves

There are found, with those of other animals, many bones of the mammoth, and of these, every long bone has been split open to obtain the marrow from the central cavity.

Mingled with these bones are found here and there the flint knives and stone hatchets which served as utensils at these early feasts. On a tusk of a mammoth found in one of the caves of Dordogne, in southern France, was a rude engraving of the animal itself, scratched long ages ago with the sharp point of a flint. These troglodytes are now no more. They and their giant neighbor, the mammoth, have perished, one after the other, in the lapse of infinite ages, by those changes of circumstances in the organic and inorganic world which are always in progress. No less than 30 species of these fossil elephants—mammoths and mastodons—have been found in various parts of the globe, under nearly every parallel of latitude and in every continent except Australia. As an individual form, the mammoth is uniquely interesting, as showing the maximum of size to which terrestrial animal life has ever attained. So large an organism required an abundant and constant supply of food. This it obtained, as its teeth have shown us and as we see from its congeners, the elephants of the present day, from the tender branches of trees and the succulent stems of shrubs.

A Specimen of the Allied Mastodon,

Dug up many years ago in the neighborhood of Newbury, on the Hudson, contained between the ribs, in the region of the stomach, nearly a bushel of chewed twigs, the last meal of the great arbivore. Like modern elephants, the mammoths and mastodons liked to visit marshy places and pools of standing water, to cool their bodies and free themselves from insects. It was in their visits to these swamps that many of them met their death by sinking so deeply in the mire that it became impossible for them to extricate themselves. Thus engulfed, their bony framework, bared by decomposition of the surrounding flesh, sank still deeper, and there, beyond reach of further disintegration, they have remained through many ages to the present day.

Several skeletons have thus been found buried in clay or in peat marshes. Generally, however, only isolated bones are found—a thigh-bone, a shoulder-blade, some vertebrae, a jaw or teeth. There is hardly a county, not of prairie land nor yet absolutely mountainous, in the entire Union where some mammoth or mastodon remains have not been found. The soil of the Pacific slope contains them in abundance; so all the States bordering on the Missouri and Mississippi rivers for their entire length. The valley of the Ohio was followed by them in its entire length, so the Susquehana, the St. Lawrence and the Hudson. Big Bone Lick, in Kentucky, was a favorite resort for them, and there, within an area of less than 100 acres, have been found buried in the mud the bones of several hundred individuals.

These facts show that the mammoth and the closely allied

Mastodon Once Roamed in Large Herds

Over our whole country at a period so recent that little change in the configuration of the surface has since occurred. These great herds of elephants have forever disappeared from the surface of our soil, while their early companions, the buffalo, the elk and the deer, still remain, though in steadily decreasing numbers. It is hardly doubtful that they were coeval with our red brethren, although the number of traditions referring to them is not large.

In exhuming, in Missouri, a fine, perfect skeleton of the mastodon which now stands in the halls of the British Museum, Dr. Koch found, directly under its shoulder-blade a stone arrow-head, which, from its position, was apparently shot into the thick skin of the great animal while alive, perhaps in a simultaneous attack of aborigines, who, by abundant wounds, caused its death.

In the State of Wisconsin, as is well known, are many large mounds of earth, some of them covering several acres, and built in imitation of the forms of various animals. One of these in the neighborhood of Racine, called "Elephant Mound,' has the well-defined outline of a mammoth or mastodon with his long trunk. The likeness is unmistakable, and there can hardly be a reasonable doubt that the great animal himself was present as a model and inspired the construction.

The general intelligence of the early settlers of our country has prevented many

Wild and Superstitious Stories

About these great bones from being rife in America. No one mistakes them for the bones of giants, nor attributes them to the Behemoth of Job or to the ship-wreck of Noah's ark. Not so in Europe. There, for many centuries, the bones of these harmless proboscidians have figured largely in the demonology and gigantology which have had an accredited place in the lore and the literature of the people. Many an old work in black letter told in voluminous latin pages the long story "*De Gigantibus et eorum Reliquiis*," "*De dentibus gigantorum*," "*De gigantium ossibus*," and all the other marvels of this wonderous race.

For the information contained herein we are indebted to Prof. Henry A. Ward, who made at his natural science establishment in Rochester, N. Y., the restoration of the mammoth now on exhibition in this city at the Mercantile Library Hall, Bush street. Prof. Ward's collection has been purchased by Charles Crocker and Leland Stanford and presented to the California Academy of Sciences. The gift is a grand one. Over 5,000 people a day have visited the hall since the Ward collection has been on exhibition. The main interest has centered on the mammoth, and we take pleasure in giving an engraving of it, so that those in the interior unable to see the specimen, may have some idea of its appearance. Its great size may be imagined by comparing it with the figures of men and horse in the engraving. The height is 16 feet, and length, including forward curve of tusks, 26 feet.

Queries and Replies.

The Prœparturiens Question.

EDITORS PRESS: In your valuable paper of March 4th was an answer of Mr. Rock to Mr. Gillet, about the prœparturiens walnut. I have no direct interest whatever in this question; only I don't like Mr. Rock's translation from the French. The translation is verbatim: Page 306, Walnut tree fertile, Juglans prœparturiens, new variety, very *precious* or *valuable*, etc. It is clear that *precieuse* concerns the variety; if it concerned the tree it would have been *precieux*, *noyer* being masculine. The conclusion of Mr. Rock that "precocious fruiting, when two years old, implies that it is a dwarf; it cannot imply anything else," will not go. Mr. Rock will have to give other proof that Mr. Gillet is wrong. I did not expect Mr. Gillet would have overlooked this (well we will call it a mistake, for that reason I did not write before. J. CNORIUS, Forestville.

We had a private note from Mr. Gillet, correcting the translation as above, and promising to give further attention to the controversy as soon as he received some data, for which he had sent to France.

Alaska Evergreen Blackberry.

EDITORS PRESS:—W. J. Cottle, of San Jose, imported a blackberry from Alaska four years since. These are its characteristics: Evergreen, heavy bearer, fully as large and sweeter than other varieties, and will bear fruit continuously for four months. Vines run very long, and are well adapted for arbor covering, as the foliage is flat and abundant. The old vine sends out canes like the grapevine, while the other varieties of blackberries fruit from the new canes, requiring yearly cutting away of the old canes. I send you a sample of the foliage that has been exposed to all the winter frosts. The darker, small leaves are from the upper surface; the fresher, larger ones, from near the earth. It certainly seems like a valuable addition to the berry family. The sample I send you is from Mr. Cottle's lower ranch, 13 miles south of San Jose, on the Gilroy road, where he is starting an orchard of choice fruits. This berry was much admired for looks and flavor at the San Jose fair. The last old croaker may now cease to say that Alaska was a poor investment.—B. W. C., San Jose, Cal.

Failure with Short Cuttings.

EDITORS PRESS:—We are having as fine spring weather as possible. The day after tomorrow I expect to begin to put out grape cuttings. That is now the absorbing business of this neighborhood. We use no 10-inch cuttings in this warm, dry country; 15 to 18 inches is the usual length. One man was induced to try about 15 acres to short cuttings, two years ago, on a piece of as good grape land as the township affords. With extra care his stand was so poor he plowed everything under and reset with longer cuttings.—CHAS. H. COOLEY, Cloverdale, Sonoma Co.

Agricultural Engineer.

Farm Engineering.

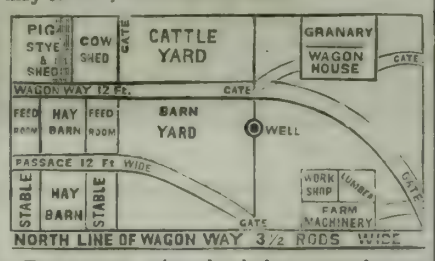
Written for the RURAL PRESS by ELDRO.

"Out Buildings."

Too little attention is often paid to the relative positions of the barn, pig-sty and cattle sheds to the dwelling. The idea of *distance* of such buildings from the house, rather than *direction*, seems to control the builder in his operations. I cannot better illustrate my meaning than by relating the experience of one of my neighbors:

Twenty years ago, a Mr. Haskell (as we shall call him for the sake of illustration) settled a mile and a half from my father's farm, and began work. The family physician was often called to administer in cases of malarial fever, and other malarial diseases, some member of the family being nearly always afflicted in that way. Good judgment seemed to have been exercised by Mr. Haskell in the selection of a site for his dwelling. It was on elevated ground, away from any stream, and for a time the physician was baffled in his efforts to account for the illness of the family. What made the matter still more difficult to fathom was the fact that families living on either side, on an east and west line, at a distance of perhaps a quarter of a mile, were entirely exempt from the trouble which so sorely afflicted the Haskell family. Happily, the physician pursued his researches and the result was that he advised Mr. Haskell to move his house. The physician could find no cause for the trouble immediately about the premises, and, accordingly, sought the source at a point more remote. At a distance of more than one mile from the plague-stricken house, if we may use so strong a term, he found the cause of all that family's suffering. In a direct line south, "as the wind blows," was a pond reeking with miasma. The removal of the house from that almost fatal line effected a cure which medicines had failed to accomplish.

By reference to the diagram in my last paper it will be observed that the buildings so far located are placed where the prevailing winds (north and south) will not bear the odors to the dwelling, less attention being paid to distance from the house than direction. By the same rule, I would build the barn, pig-sty and cow-sheds in the south west corner of the lot devoted to farm buildings, which, when completed, will contain a little more than an acre and a half for the ordinary purposes of a small farm, including wagon way (shown in last diagram) poultry yard and ample door-yard. The barn and barn-yard, cow-shed and corral, granary, tool house, workshop and carriage house, will find ample room in the half acre shown in the diagram below, which joins the plat shown in my last paper, on the north leaving a road entirely across the "farm buildings reserve," as we may term it, from east to west.



The accompanying plan is for a complete set of buildings such as would be required after the farmer had acquired sufficient means to own all necessary machinery, store his own grain to hold for better prices, and do his own repairing, and the object of making a diagram of all buildings is to have the ground laid off so that the addition of new buildings will not mar the work already done. The barn is a small one with a capacity of 20 tons of loose hay in the main building, with a passage way between to admit of wagons going between the two compartments to unload. One-half of the barn may be built at first and the other half when necessity demands it. The "pig-sty," or "hog-pen," occupies the extreme northwest corner of our "map," a wagon way 12 ft. wide, being left between it and the barn to allow access to the north end of the barn and the south end of the cow-shed, for the purpose of unloading hay and feed. The cow-shed may be made to do triple duty by building it out to the dotted line in the square marked "pig-sty," letting the foundation and that side come within three ft. of the ground, and building the walls 16 ft. high, or as high as the walls of the barn, then giving the roof the same pitch as that given to the roof of the barn, until it reaches the eastern extremity of the cow-shed; thus you have a shelter for your swine, a barn for the storage of hay for the cows and cattle shed all under one roof. Both the cattle shed and hog-pen are easily accessible from the feed rooms in the barn. If the barn is finished before the wagon and machinery house are completed, the passage between the two divisions of the barn will answer very well for a wagon shed, and one of the feed rooms may contain the machinery. The light curved lines indicate the course taken in reaching the several buildings. That portion of the lot set apart for the accommodation of the swine is only calculated for "fattening" hogs, which must necessarily be near the barn. This, like the stables and cattle sheds, should be kept clean. With proper regard for cleanliness, the corrals may be extended the entire length of the lot or the stock allowed to range through open gates into the division allotted to granary, workshop, wagon house and machinery room; though, unless the number of cattle is too large to be confined in the space allotted to them, such a course only entails useless labor and much annoyance to the farmer in going about his premises and keeping them in order.

There are many advantages, which must already be clear to my readers, in the system I have endeavored to illustrate, and which will more fully appear when the plan is considered as a whole. Chief among these advantages is immunity from malignant fevers, often generated in the buildings occupied by domestic animals, and communicated to the family dwelling by a current of air flowing directly from them to the house, to say nothing of the entire absence of offensive odors, which are otherwise liable to greet the olfactories and interfere with the enjoyment of a meal or the pleasure of a visit from a neighbor or a friend from town. In my next paper I will give reasons for adopting the plans suggested in this and the preceding paper, when the entire system will be illustrated by diagram. If by this means I can aid my farmer brothers in satisfactorily and cheaply improving their rural homes, my labor will not have been in vain.

Imported Lemons in California.

To the Executive Committee of the Riverside Citrus Fair Association:—GENTLEMEN: Through the courtesy of J. C. Stubbs, General Freight Agent of the C. P. and S. P. R. R. companies, and some of our importers of foreign lemons, we are able to comply with your request for information. First, as to the number of boxes received; second, as to the freight on the same; third, as to the cost of the lemon in New York.

Following is the number of pounds of lemons received each month from New York during the year 1881. A box weighs about 80 lbs., so that it is easy to convert the pounds into boxes.

Months.	Pounds
January	4,676
February	49,200
March	71,300
April	56,380
May	87,200
June	45,140
July	26,300
August	49,850
September	50,940
October	24,180
November, by C.-P. R. R.	25,140
" by S. P. R. R.	48,030
December, by C. P. R. R.	70,000
" by S. P. R. R.	45,220
Total importation to S. F.	648,350

This is equal to 8,112 boxes, and allowing 10 tons to the carload will fill 32½ cars.

The freight in lots less than carloads is $3 per 100 pounds, and in carload lots $2 50 per 100 pounds. The total importation during 1881 would therefore cost for freight, at carload rates, $16,633 75.

We find by the invoices of our leading importers that they paid in May $4 per box, in July $4.50 per box, and in November $3 25 per box. Taking the figures of the cost in New York at an average of $4 per box, we find 8,112 boxes will cost them $52,448; freight on same, if they all came by carload lots, $16,633.75, making the total cost paid here for lemons $49,081.75, or in round numbers $50,000, a nice little sum to be striven for by the lemon producers of this State.

There are a few points we desire to call your attention to. The receipts are heaviest in December. That is accounted for by the importers in this way. The crop comes off in October, and is thrown on the market in the East in November, and by the time they arrive here it is December. They import heavily then in order to avoid the cold in mid winter. And one other thing you want to look into; some of the lemons imported here are on hand now, being in store here over three months, and most likely picked three months before they arrived here; and they are perfectly sound and look brighter and fresher than ours do when they first come in. HIXSON, JUSTI & CO.

San Francisco.

ORANGE TREES.—The advertisement of Eames & Levering, of Los Angeles, will attract the attention of those needing orange trees. Their location is adjacent to the business portion of the city and therefore accessible. They are confident their trees are free from scale.

THE Atchison, Topeka and Santa Fe Railroad Company proposes to bring people from the East free, in order that they may examine the lands which the company has for sale.

IMPROVE YOUR POULTRY.

LIGHT BRAHMAS.

IT COSTS NO MORE

TO KEEP GOOD FOWLS THAN POOR ONES.

Blooded Fowls! Fowls for Pleasure! Fowls for Profit!

DARK BRAHMAS.

OAKLAND POULTRY YARDS,

CORNER OF 17TH AND CASTRO STREETS, - - - - - OAKLAND, CAL.

Constantly on hand and for Sale, the following varieties of land and aquatic Fowls, viz:

Light Brahmas, Dark Brahmas, Buff Cochins, White Cochins, Partridge Cochins, White Leghorns, Brown Leghorns, Houdans, Golden Spang'ed, Polish, Silver, Spangled Polish, White Crested Black Polish, Golden Spangled Hamburgs, Silver Spangled Hamburgs, Aylesbury Ducks, Rouen Ducks and Bronze Turkeys. Also, Golden Sebright Bantams, Black Red Game Bantams, Silver Duckwing Game Bantams.

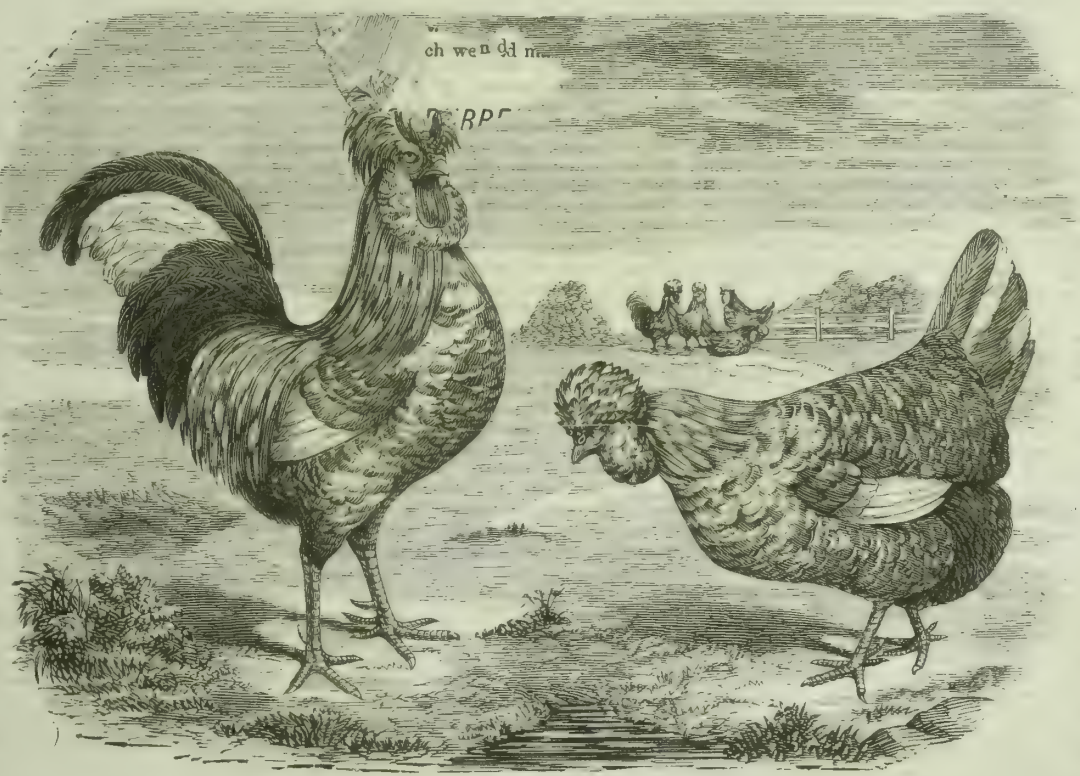
LANGSHANS.

I have just received and am breeding from two pens of Langshans, which will compare with any in the country, and will spare a limited number of Eggs from them this season at $3 per dozen.

Plymouth Rocks Eggs at $3 per dozen, from two of the best strains in America.

The above varieties of Fowls can be seen on any day at my yards, where there is a keeper in constant attendance to conduct visitors around the premises, and I should prefer all persons wishing to buy stock to select their own birds if practicable.

I wish to say to my old patrons that I have this year imported new stock of each of the varieties of fowls mentioned in this advertisement, and can furnish, to those desiring to introduce "New Blood" into their stock, fowls which I guarantee to be no kin to those bought of me previously. Parties buying of me may be assured that they will be dealt with liberally, and that every Fowl or Egg leaving the premises will be guaranteed true to name. If found to be otherwise the money will be refunded immediately. My advertisement will be found constantly on the last page of this paper, and all new varieties of stock received will be duly announced.



HOUDANS.

AMERICAN SEBRIGHTS

OR

"EUREKAS."

NOW ALL THE RAGE IN THE EASTERN STATES, AND DESTINED TO BE THE FOWL OF THIS COUNTRY.

Beautiful in plumage, hardy in constitution; cocks average 9 pounds, hens 6; small rose comb, clean yellow legs, contented in disposition, and as layers they have no superior.

Eggs, $3 Per Dozen.

THE PACIFIC INCUBATOR,

INVENTED ON THE PACIFIC COAST AND GUARANTEED TO HATCH 90 PER CENT. OF ALL FERTILE EGGS.

Three Sizes, Capacity, 180, 250 and 550 Eggs, and it can be run without trouble by any one possessing ordinary intelligence. Price, $45, $60 and $90.

It has no intricate mechanism to get out of order, no galvanic battery to replenish, and commends itself as an entirely practical machine. Can be seen in operation on my premises, corner of 17th and Castro Sts., Oakland, Cal., where there are always two or more machines in operation. Visitors can now see on the premises one thousand chicks hatched in these machines. Can also get all information relating to the building of special houses for raising the young chicks.

No Artificial Mother required. Any old building can be made fit to shelter and keep chicks comfortable at an expense of a few dollars for glass.

GOLDEN POLISH.

Eggs Packed Carefully in my Patent Handled Boxes with Elastic Bottoms, and Guaranteed to Carry Safely to any part of the country.

Fowls Carefully Cooped and Delivered,

With sufficient Food for the journey, at the Office of Wells, Fargo & Co., in Oakland.

FOR FURTHER PARTICULARS SEND STAMP FOR ILLUSTRATED CIRCULAR TO

GEO. B. BAYLEY,

P. O. Box 1771 San Francisco.

AMERICAN SEBRIGHTS.

POULTRY YARD.

Poultry Diseases on the Pacific Coast.

There is, perhaps, no single subject which enters more largely into the questions asked us by correspondents than the treatment of poultry diseases. This being the case, we take space in this issue to insert a general article on the subject, written by Wm. Niles for his *Pacific Coast Poultry Book*. It will, no doubt, enable many of our less experienced poultry growers to rescue their fowls from disease:

Sore or Swelled Head.

This is the most dreaded disease to which fowls on this coast are subject. There is no good reason why poultry raisers should ever be troubled with this nuisance to any extent, unless in the milder and more manageable forms. We make this assertion unhesitatingly, because we have known of many instances where such disease has never shown itself, or if it came, wore off without proving fatal in a single case, upon premises where proper care is continuously taken to prevent, on the old principle that "an ounce of prevention is worth a pound of cure." If the poulterer attends to his stock as he ought to do, and provides his chickens with clean, dry shelter, feeds his flocks regularly and judiciously, affords them good range, comfortable quarters, never crowds them together in numbers, and above all, fights off the lice that will infest both birds and houses and roosts (with diligent care in this last particular), he will not have much to say about sore-headed chicks or fowls. Occasionally the exception may occur; and upon discovery, if he remove the sick bird at once from the rest, he can easily treat it successfully, if worth the trouble, and all liability of infection will be avoided. Yet, the better the sanitary conditions provided, the less the danger of attack. If the reader will observe the instructions and rules we have given in this work, touching the rightful management of poultry from chickenhood to maturity, he will not have much cause to complain about "sore-heads" in his flocks, we are well assured. Should you be so unfortunate as to have a fowl attacked with this disease, and it seems to be an aggravated case, we advise *killing at once* the fowl so affected; unless it be a very valuable bird, in which case I should try and save it by faithful treatment; this will prevent its spreading among your flock. This disease is highly contagious, being spread by means of the sick fowl drinking from the same trough or vessel as the other fowls.

Symptoms.—You will first notice a collection of matter at the nostrils; this matter collects and closes up the passage, which causes a swelling or puffing out between the eyes and beak, and giving the appearance of a swelled head. There is generally a frothy substance in the corner of the eye.

Treatment.—Catch the fowl affected and cleanse the passage and beak by washing; then put a finger in the mouth and thumb on the outside and gently press out the matter. If this treatment does not remove it, take a lance or sharp pen-knife, and, commencing close to the beak, make a small incision, and in the same manner press all the collected matter out as clean as possible; then wash out the cavity. Sometimes this matter becomes hard like a cheesy substance; in such cases use tweezers to remove it. Then, with a medium sized camel's hair brush, or stiff feather stripped to within about one-half inch of the end, anoint carefully the cut and the top of the beak with the following: Iodine, 1 oz.; alcohol, 1 pint; potassa-iodide, 1 dr.; well mixed, being careful not to let any get in the eyes. If the quantity is too much, then get one-half and probably one-fourth in most cases, or one-eighth would be sufficient in some cases. Treat them in this manner once a day, or once in two days, as the case may require. Should there be any cankered spots in the mouth or throat, treat them in the same way. Be sure and keep the cut open, and not allow the matter to collect. Feed dry food, ground, in which has been mixed, according to the directions, some "Imperial Egg Food."

Incipient Cold or Running at the Nose.

A simple remedy for cold or running at the nose, with wheezing, is to confine the birds in a small house or large box, and fumigate with sulphur. Place a few live coals on a shovel and set it in the box with a dozen fowls: throw on a teaspoonful of flour of sulphur; let the box remain closed for five or ten minutes. Repeat night and morning for a few days.

A Disease Common to this Coast.

Symptoms.—Diarrhœa. The fowl mopes and stands with its head drawn in, and there is often a thin, pinched look in the face. The droppings become green, and are sometimes of the color and consistency of yellow paint.

Treatment.—Separate the sick fowl from the rest of the flock, and confine in a dry, warm place. Give an ounce of strong alum water twice every day; and feed soft food, in which has been mixed some of the Imperial Egg Food. If whole flocks are attacked, seek the cause, alter the food, clean out the houses, and disinfect them, change the location, boil meat and add alum water and pepper to the soup, in which mix bran and shorts and feed hot each day. Add to the soft food to be fed in the morning about one-half pint for each 100 fowls, of the following mixture: One pound sulphate of iron (green copperas or green vitriol, to be had in any country store at 10 or 15 cents a pound), and one oz. of sulphuric acid dissolved in four gallons of water. This disease results from too much sameness in the food, an excess of fat-producing food, lack of green food, fermented or unwholesome grain, stagnant water, too close confinement, or some neglect which deteriorates the system and produces an abnormal condition of the liver.

Gapes.

As soon as you discover any symptoms of gapes among your chickens, you may know that there are worms, very small red worms, in their windpipes.

Treatment.—Give them camphor in their drinking vessels, strong enough to make quite a taste of the camphor. Then, if any get the disease quite badly before you discover it, force a pill of gum camphor down the throat about the size of a small pea, and the fumes of that dose will kill the worms. No kind of worms can live in camphor; hence, camphor must be a powerful vermifuge. A few drops of spirits of turpentine will also cure.

Canker in Pigeons.

Treatment.—As a preventive of canker, give lime water once a week, made by slacking a small quantity of lime, and pour it in the drinking fountain until the water is the color of milk; if the pigeons refuse to drink it at first, keep them from water until thirsty, and they will then get a good dose. If the birds are diseased, apply burnt alum mixed with honey. This will effect a cure, if not too far gone.

Canker or Ulcer in Throat.

The cause will generally be found in filth, sameness of food, too close quarters, unwholesome or decayed food, impure or sun-warmed water, producing a diseased state of the system, resulting in the formation of canker or ulcer in the throat, or sometimes pustules on the comb, wattles and head, resembling small-pox.

Symptoms.—Mouth held partially open, difficulty in breathing, and inability to eat.

Treatment.—Paint the sores two or three times daily with Labarraque's solution; if canker—first scrape the ulcer with a stick. The cankerous growth will be found in the roof of the mouth, under and on the tongue, and on the rim of the windpipe. Give stimulating food, and if the fowl is unable to eat, feed a raw egg beaten up in alum-water twice daily.

Apoplexy or Paralysis.

More probably arising from high feeding than any other cause.

Symptoms.— An unsteady walk with drooping wings, as if the bird was giddy, is a warning symptom.

Treatment.—Fasting and a dose of 15 grains jalap and one grain of calomel will be found very useful, with continued low diet for two or three days. In cases of sudden attacks, with loss of power and consciousness, it will be necessary to lance immediately the large vein under the wing, and to bleed freely until the bird recovers. Stop the flow of blood by means of burnt alum or other styptic, and take care that the fowl is not allowed to peck open the wound and cause death from hemorrhage. Cold water applied to the head is often of a beneficial effect. Fortunately, these diseases are of indifferent occurrence.

Cramps.

Early chickens are most subject to this disease, caused by exposure to damp during cold weather.

Symptoms.—It may be known by a tendency to walk on the toes, and afterwards on the knuckles or outside of the foot. Also by squatting on the hock.

Treatment.—Removal to a place provided with a dry, boarded floor, well sanded and kept clean, is usually sufficient. In severe cases, where the toes are much contracted, the legs and feet should be bathed in warm water several times daily. It is well to add one part tincture of arnica to 15 of water.

Colds, Snuffles, Swelled-Head, Roup.

The causes are damp houses, drafts in the houses, over-crowding, and damp, cold weather. If the hen houses have leaky roofs, or are so insecure that the floor becomes damp and muddy, it is almost impossible to keep fowls in health. During the rainy season our fowls should be well housed; and it will pay to provide a house with tight roof and free from drafts, so that the floor may be dry and the fowls offered a place in which to roost without being chilled by currents of cold, damp air. A neglected cold soon degenerates into roup, and very often the fowl is not noticed until a lump appears on the side of its head, or an offensive discharge accumulates at the nostrils.

Treatment.—Place the fowls in a warm, dry place, give a good dose of castor oil, feed soft, stimulating food. Wash the head and throat with Larbarraque's solution diluted with three times its quantity of water. A roupy fowl should at once be separated from the flock, as the matter which is coughed out or oozes from the nostrils will cause the spread of the disease. Young and half-grown fowls, if crowded, especially in summer, take cold at night. Those on the inside, where they are huddled together, become too warm, and then make their way to the outer edge of the flock, and there become chilled. Chicks hatched late and not well hovered by the hen during the nights which are so warm at nightfall, but cold toward morning, also catch cold, as do those where too many are given to one hen. The cold becomes chronic, the chicken assumes a pinched look, is stunted, pines away and often dies. The mucus may be pressed from the nostrils with the fingers. Chicks so diseased should be removed at once, placed in a warm, dry place, fed stimulating food, and well housed at night. Those not yet attacked may be saved by removing the cause of the disease. It is contagious; that is, those roosting with others so afflicted, and breathing the same confined air, soon become sick.

Costiveness.

Symptoms.—Costiveness will be noticed by the fowl's frequent attempts to relieve itself. The cause is continued dry, hard food, and a limited supply of clean water.

Treatment.—Give a feed of bread and milk, warmed; a small quantity of fresh meat may be safely given, with a change of green food, as cabbage chopped fine; mashed boiled potatoes are also good. If this method be strictly followed a cure will be performed in nearly every case.

Influenza or Hard Breathing

Fowls are subject to colds, the same as mankind. Should your fowls show signs of influenza, or hard breathing, make a brush of the secondary feather of the wing, by pulling off the side feathers and leaving a nice bunch on the end.

Treatment.—Dip the brush in turpentine, open the beak, run the brush down the throat, turning it sideways, and drawing it through the division or cut in the roof of the mouth. After this operation lay the head back and use the turpentine freely on the outside of the throat. Should the feet and legs feel cold to the touch, anoint with turpentine. If in good health and condition, the legs and feet should be warm. Use judgment in applying all remedies.

Soda for Ailing Chicks.

As a rule, we do not believe in dosing chicks when they are ailing, especially if they are in the advanced stages of sickness, for such cases are best corrected, and more quickly, by the use of the ax and the block. Some do not even [illegible] by [illegible] the sick birds live out a short [illegible] site for his [illegible] tence in the yards with[illegible] away from and [illegible] en living just long enough to infect the other birds, and thus aggravating the loss which ensues. During the spring and early summer, breeding birds are sometimes attacked by "scours" or diarrhœa, which, if left to go unchecked and uncared for, for any length of time, will result in extreme weakness and often death. In such cases it is necessary to resort to some remedy, or else the flocks will soon be decimated.

Treatment.—We have found the judicious use of soda—the common baking soda—to be very effective. It is easily procured, is not dangerous, and is generally in the house at all times. There are several ways of administering the soda, but the best way is to mix some of it with fine corn meal, moistening it with water, and then giving it in the form of small pills. Flour can be used in the same connection, if desired. Two or three pills, given each day, will, in a couple of days, usually afford relief. Soda put in the drinking water will also afford relief to the fowls.

Sore Eyes in Chickens.

One small drop of glycerine applied to each eye, will soon cause the eyes to open, or soften the edges of the lids so as to admit of their being easily opened by the hand, or, in severe cases, by the use of a pen-knife.

Crop-Bound Fowls.

This difficulty is caused by the failure of some substance swallowed to pass from the crop to the gizzard.

Symptoms.—The trouble is first indicated by a swelling at the point of junction of the head and neck. On taking up the fowl the crop is found to be naturally distended and either caked hard or flaccid and watery. When the fowl is held head downward a very offensive liquor will run from the mouth, while in other cases the crop is perfectly dry.

Treatment.—When the contents of the crop are soft, as indicated by the touch, give two tablespoonfuls of olive oil and gently knead the crop till the oil is well diffused, and this operation may remove the stoppage. If, however, this does not suffice, the next step is to open the crop. Opening should be resorted to without trying the oil, if the contents are found by manipulation to be dry and hard or stringy; as, for instance, if they consist of kernels of whole grain, or long hay or twine, or other similar substances. Get some one to hold the fowl firmly, while you pluck away the feathers on the under side of the crop, in the line of the body, and to the breadth of about half an inch, then drawing the skin tightly, make, with a sharp knife, an incision about an inch and one-quarter long through the skin and crop, and remove the contents of the latter. After taking out the solid matter, wash out the crop with tepid water, and then sew up, first the crop and then the outer skin. After the operation the fowl should be put in a small coop and fed sparingly on soft food for a week. The operation is easily performed, and it is only necessary to be careful not to cut too far toward the body and induce too much bleeding, and to sew separately the crop and outer skin.

Giddiness.

Usually resulting from too high feeding, and likely to develop into apoplexy.

Treatment.—Hold the head under a stream of water, and reduce the system by a dose of castor oil, and feed on sparer diet.

Incipient Cold or Running at the Nose.

A simple remedy for cold or running at the nose, with wheezing, is to confine the birds in a small house or large box, and fumigate with sulphur. Place a few live coals on a shovel and set it in the box with a dozen fowls; throw on a teaspoonful of flowers of sulphur, let the box remain closed for 5 or 10 minutes. Repeat night and morning for a few days.

Warts on Chickens.

Treatment.—I will give the following remedies: "Dissolve bluestone in water, cut the wart off, and with the knife scrape out all the seed that can be taken out, then with a mop apply the liquid bluestone. If taken when the wart first appears, the above remedy will cure. Use as often as needed, as more than one application is necessary." Another is: "Rub carbolic acid freely on the warts of the chickens about twice. Use clear, purified carbolic acid; unless the warts are different from the usual style, they will not wait to make a statement."

Broken-Down Fowls.

One of the most unsightly objects that appear in the poultry yard is a hen that is completely broken down behind, making her waddle around in an upright position, somewhat resembling the penguin's mode of locomotion. Most people, looking at such an object, would condemn her to the butcher's block at once, without a further thought. Where the bird is of no value as a breeder, it would be far the best plan; but if she be a valuable specimen, do not be quite so hasty.

Treatment.—When you see the weakness, cut off half the food and make the fowls roam around all day, if you can, which will usually effect a cure. But when they are completely broken down, and nothing else is the matter, they will lay out their litters and want to set. This is the time to doctor, as she will set as well as any sound hen. Give her some eggs; not too many; also set another hen at the same time to take the chicks when they are hatched. Reset her again—twice more, if she will continue to attend to her business. Any of the Asiatics that are a year old will set weeks without any trouble. If she is inclined to be restive, put a small chick under her for an hour or so and she will give no trouble. In almost every case six weeks will straighten up the worst case; but nine weeks are better, as they are less liable to a return of the old weakness. Let the hen run with her last chicks as long as she will, and by the time they are ready to wean she will be fully recovered, and no more liable than any other fowl that has not had the trouble.

It sometimes happens that some of the non-sitters are affected in this way, and it is a very much more difficult matter to cure them, though by patience and a great deal of trouble, you can usually affect a cure by cooping them up, and putting them on a very spare diet.

Leg Weakness.

Young fowls of the larger breeds frequently outgrow their strength, or from lack of bony matter, shown by constant squatting about instead of walking or standing.

Treatment.—To prevent the occurrence of this affection, give all young fowls plenty of bone dust, or broken bones or oyster shells. A little tincture of murate of iron in the drinking water is beneficial. Sometimes this is caused by cold or rhumatism in the joints. When this is the case they will favor the sore spots by squatting to the ground. Hens sometimes get too fat and "break down;" occasionally it appears from partial paralysis. Long-legged, over-grown cockerels will often thus become affected. The remedy is uncertain, because it must be understood what the trouble is, in order to cure it—though it is a difficult matter to restore fowls thus diseased, or injured. And, unless they are particularly valuable, the best thing to do (when the evil becomes a settled matter) is to cut off their heads. It is next to impossible to cure them permanently.

Egg-bound Fowls.

Inability to lay on account of unusual size of egg.

Symptoms.—May be known by the hen coming off her nest, and moping around in evident distress with wings on the ground; sometimes she remains on the nest.

Treatment.—A large dose of castor oil will generally give relief in a few hours. Failing in this, a free injection of olive oil into the oviduct may be used, care being taken not to break the egg; if no syringe is at hand the oil may be passed up with a feather, having first bathed the vent with warm water. The food should be soft and not of a stimulating nature. In case the egg passage should protrude or become ruptured, egg production should be totally arrested, by giving the following: One grain calomel, one-twelfth of a grain of tartar emetic, and one-fourth of a grain of opium, made into a pill, and administered every four hours. In the first pill the quantity of calomel and opium may be doubled.

Black Comb.

Sometimes the combs of fowls will turn black. Should any of our readers be troubled with this, they will find the iodine ointment beneficial. Apply to the comb.

Consumption.

Consumption is caused by cold or dampness, want of light, and constitutional debility. Most frequently observed in birds bred from parents related.

Symptoms.—Chronic cough, with wasting away and loss of strength. Incurable when once fairly seated.

Treatment.—Where its presence is suspected, cod liver oil added to the meal food, is correct-

(CONTINUED ON PAGE 294.)

WHITE LEAD.

USE NONE BUT HOME MANUFACTURE!

Guaranteed to be Superior to any imported. The "Pioneer" White Lead is an entire Pacific Coast Production, and it is guaranteed free from any adulterations. It is STRICTLY PURE. It is superior in COLOR, BODY, FINENESS and DURABILITY to any made elsewhere in the world. Use no other. The use of the "Pioneer" White Lead means the employment of every industrial interest on the Coast—the Miner is employed, the Farmer raises the oil seed, the Mechanic makes the machinery and kegs, and the laborer has occupation. The purchase or encouragement of Foreign manufactures, is SUICIDE to every manufacturing interest on this Coast, and to our dependence as a community, and integrity in the employment of intelligent labor and to the consumers of our natural and home productions.

No matter how specious arguments of others may be, reflect and consult interests, not of the moment, but of the future, your own happiness and welfare, and that of your progeny, and promote and establish it by using nothing but HOME MANUFACTURES. In your painting wants use nothing but PIONEER WHITE LEAD.

Every First-class California Storekeeper has it.

RUBBER PAINT.

THE PACIFIC RUBBER PAINT

Was the Original RUBBER PAINT introduced on this coast. At time of its introduction the Averill Paint Company, since changed to the California Paint Company, was the only manufacturer of Mixed Paints in California. Our advent with an article of Paint, the manufacture of which was the result of a PRACTICAL experience of over 30 years, so completely retired the paint of our competitors that they in their utter ignorance of all business courtesies or honor, counterfeited our trademarks and labels. We ask the question, if they had confidence in their own stuff, why not make an honorable stand-up fight on the issue of QUALITY and merit. But they displayed their cowardice and contemptible littleness by evading an honorable and business issue, and resorting to putting up their mixtures under a title—RUBBER PAINT—which we had made for years before a record for, as the "Best Mixed Paint" made in the world—a record earned by our practical experience and public trial.

DON'T TAKE ANY MIXED PAINT EXCEPTING THE PACIFIC RUBBER PAINT. SEE THAT THE WORD PACIFIC IS ON EVERY LABEL.

Any other so-called RUBBER PAINT is a Miserable and Contemptible Imitation.

If your Storekeeper don't keep it, send to us direct, and we will with pleasure give you color cards, prices and such other information as you may desire.

WHITTIER, FULLER & CO.,

Manufacturers Pacific Rubber Paint, - - - - - - - - San Francisco.

REDLANDS.

The owners of the Redlands tract having disposed of a large portion of their lands, now offer for sale one hundred and fifty acres only, at $125 per acre, this being all that will be offered the present season.

Redlands is located on the south side of Mill Creek Ditch, between Old San Bernardino and Crafton.

The lands are a clayey loam, very similar to the lands at the head of Magnolia Avenue in Riverside.

There are no fences on the land.

The tract is being put on the market as rapidly as the water can be put upon the lands, and no faster.

One thousand acres of the tract have just been surveyed and platted, about nine hundred acres of which have already been sold at from $50 to $100 per acre. The price of the remaining tracts has been advanced to $125 per acre.

The third five hundred acre tract will not be put upon the market before the winter of 1882-3. In the meantime the system of irrigation will be completed by finishing the large reservoir, conducting the waters of the Company to the reservoir in pipes and flumes, and laying concrete pipes through the tract to carry water from the reservoir to the highest point on each tract.

The main avenues are one-quarter mile apart, 100 feet wide, and run from northeast to southwest for convenience of irrigation. The course of the sea breeze is parallel with these avenues.

The cross streets are sixty feet wide, and run at right angles with the avenues every half mile.

The tract is subdivided into ten-acre lots, with a town site composed of smaller blocks.

Its situation is the finest in the San Bernardino Valley, the view being unequalled, and the elevation near 2,000 feet above the level of the sea.

The climate is unsurpassed, the location being so far inland that fogs and northers are almost unknown.

The title to the land is United States patent, and is therefore beyond question.

The Water Right is ample and beyond dispute. It consists:—

First—Of fifty shares in the Sunny Side ditch, one of the oldest ditches in San Bernardino county. This water will be conducted from the Sunny Side ditch to the Redlands reservoir in a ditch flumed part or all of the way, so that no water will be lost by seepage. The ditch is already constructed and will be flumed before the next irrigating season. This is good for 500 acres of land.

Second—An eighty-inch stream developed in Santa Ana Canyon. This stream is being piped down to the head of the Redlands ditch, so that the entire water supply will be handled without loss. This stream is good for 500 acres more of land.

Third—Two reservoirs will be constructed. The work on these is now in progress. The largest reservoir will have a capacity sufficient to cover 500 acres of land 9 inches deep with water. There is an abundance of winter water to supply this reservoir. The second reservoir will be much smaller. The large reservoir will cover 17½ acres of land, and will be 60 feet deep in the deepest place

Fourth—The water will be conducted from the reservoirs to the highest point on each ten-acre tract by means of concrete pipes, thus saving expense and wastage in the distribution of the water. These reservoirs will irrigate another 500 acres.

These water rights, reservoirs, pipes, flumes, ditches, etc., are the property of the Redlands Water Company,—a company incorporated to furnish water to the Redlands tract of 1,500 acres, with 1,500 shares of stock. One share of stock goes with each acre of land, so that when the land is all sold the owners of the land own and control the water, and they only charge such price for the water as is absolutely necessary to pay running expenses for handling the water in the most economical manner possible, as there are no ditches to clean.

Lands shown and business attended to promptly six days in the week only, on the tract.

☞ Send for Circular containing Map and further information.

Postoffice address, SAN BERNARDINO, CAL.

JUDSON & BROWN.

REDLANDS, 1882.

Poultry Diseases on the Pacific Coast.

(Continued from Page 292.)

ive, together with the "Imperial Egg Food" half a teaspoonful once a day.

Rheumatism.

Symptoms.—Weakness of the legs, stiffness of the joints, contraction of the toes are symptoms of this disease, which may be mistaken for cramps. The treatment is similar.

Treatment.—The bird must be put in a warm and dry place, and fed with warm and rather stimulating food. The legs should be bathed in rather hot water, containing some mustard, and afterwards dried. Half a grain of opium twice a day should be given internally. A little cooked meal every day is beneficial, and minute doses of oil of mustard have been of marked efficacy in some cases.

Cholera.

This is a disease that has seldom appeared on this coast. Cholera is the most dreaded disease in the Eastern States. I give the symptoms and treatment in case that any of our readers should be so unfortunate as to be troubled with the disease in their flocks. If there is a disease among fowl resulting from carelessness or ignorance more than any other, it is the fatal disease known as the cholera. All writers on the subject, agree that it arises from exposure to the sun, without sufficient shade, warm and stale drinking water, foul and offensive grass runs, occasioned by the droppings; and most important of all, the absence of a regular supply of fresh, green food, which is the great preventive of diarrhœa in fowls. This disease is rarely, if ever known, where a cool shade, clean runs, fresh, cool water and green food are provided daily.

Symptoms,—Sudden and violent thirst diarrhœa, greenish droppings, afterwards thin and whitish, with extreme weakness and staggering, or "falling about," sometimes accompanied with cramps, and often with "anxious" look about the face. Death results in from 12 to 36 hours.

Treatment.—Administer, every three hours, the following: Rhubarb, 5 grains; cayenne pepper, 2 grains; laudanum, 10 drops. Give midway between each dose a teaspoonful of brandy diluted with water, containing five drops of McDougall's fluid extract, or the following: Equal parts of the tincture of opium, red pepper, rhubarb, peppermint and camphor, well shaken, with doses increased from 10 to 20 drops several times a day, when not immediately relieved.

Enlarged Wattles.

Cases of enlarged wattles are not common. The wattles appear large and swollen.

Treatment.—Open with a lance or knife, the lower end of the wattle. Sometimes the matter is soft and again hard. When hard, remove with tweezers. If it does not loosen readily, anoint it with iodine ointment, same as is recommended for "sore head." Repeat as often as is necessary, and it will finally come out and the wattles heal up.

Bumble Foot.

Bumble foot simply denotes the corn or lump frequently found in Cochins, Dorkings and other large varieties.

Treatment.—Apply lunar caustic; pigment of iodine applied daily will be beneficial. If the corn appears to contain matter, it should be opened and the pus pressed out, after which it should be well washed out with warm water; and after a day or two apply the caustic as directed. Compel the fowl to sleep on straw during treatment.

Fractures.

Treatment.—A broken shank may be "set" without difficulty, and secured with a splint of porous brown paper, saturated with the white of an egg, which hardens as it dries. A broken wing is best cared for by putting the feathers in position and binding tightly together about an inch from the end. But unless the accident occurred to a very valuable fowl, useful to breed from, the time and care necessary to successfully treat fractures are generally unprofitably wasted. Broken bones unite rapidly in fowls.

A New Disinfectant.

A distinguished medical authority recommends for use in civil and military hospitals, and for the purpose of destroying the poison germs of small-pox, scarlet fever, and other infectious diseases, a disinfectant composed of one part of rectified oil of turpentine, and seven parts of benzine, with the addition of five drops of oil of verbena to each ounce. Articles of clothing, furniture, wall-paper, carpeting, books, newspapers, letters, may be perfectly saturated with it without receiving the slightest injury.

Onions for Poultry.

As a preventive and a remedy for many of the diseases to which domestic fowls are liable, when living under wrong conditions, too much can hardly be said in favor of onions for fowls. They should be chopped up fine and the fowls given all they will eat up clean. I prefer feeding them at night, giving no other feed at the time. Young chicks are fond of them, if chopped fine. For a chicken troubled with gapes, onions are the best possible feed.

Formulas.

I here give a few general formulas that will prove useful to anyone raising poultry:

McDougall's Fluid Extract.—A neutral solution of carbolate of lime and sulphate of magnesia, being entirely free from corrosive or irritating effects, while at the same time combining most of the valuable properties of both carbolic and sulphuric acids.

Labarraque's Solution.—Equally as good as that purchased at a drug store, may be made very cheaply. Dissolve one-half lb. of common washing soda in a pint of warm water; also, one-quarter lb. of chloride of lime in three pints of water, mixing gradually until smooth; let stand a few hours; unite the two mixtures, shake, let stand until clear, and then pour the supernatant fluid into a bottle, cork tightly and keep out of the heat and sun. A half gallon need cost thus but 15 cents.

Douglas Mixture.—The "Douglas mixture" is a good constant tonic, and made thus: Sulphate of iron, one lb; sulphuric acid, one ounce; water, one gallon. Mix and dissolve. Dose, one to two teaspoonfuls to a pint of drinking water. For drink, in cholera, give carbolic acid, one dram; glycerine, one ounce; mix in a quart of water. Of this mixture use two tablespoonfuls to a gallon of water, allowing no other drink. A good feed is to soak bread in milk, well dusted in pepper, and scalded by burning it with a red-hot iron. This is also an excellent feed for fowls that have the diarrhœa.

Can Insects Discriminate Different Colors?

A few years ago, when the problem of the connection between flowers and insects still remained much in the state where Sprengel left it at the end of the last century, it would have seemed quite impossible to answer this question. But nowadays, after the full researches of Darwin, Wallace, Lubbock and Hermann Muller into the subject, we can give a very satisfactory solution, indeed. We now know, not only that the colors of flowers as a whole are intended to attract insects in general, but that certain colors are definitely intended to attract certain special kinds of insects. Thus, to take a few examples only out of hundreds that might be cited, the flowers which lay themselves out for fertilization by miscellaneous small flies are almost always white; those which depend upon the beetles are generally yellow; while those which bid for the favor of bees or butterflies are usually red, purple, lilac or blue. Certain insects always visit one species of flowers alone; and others pass from blossom to blossom of one kind only on a single day, though they may vary a little from kind to kind as the season advances, and one species replaces another.

Certain blossoms which lay themselves out to attract wasps are, as Muller quaintly puts it, "obviously adapted to a less æsthetically cultivated circle of visitors." And some livid red flowers actually resemble in their color and odor decaying raw meat, thus inducing bluebottle flies to visit them and carry their pollen from flower to flower. Down to the minutest distinction between species, this correlation of flowers to the taste of their particular guests seems to hold good. Hermann Muller notes that the common galium of our hedges is white, and therefore visited by small flies; while the lady's bedstraw, its near relative, which is yellow, owes its fertilization to little beetles. Mr. H. O. Forbes noticed on one occasion that a particular bumble-bee sucked the honey from 30 purple nettles in succession, passing, without noticing them, all other flowers in the neighborhood. Sir John Lubbock long ago convinced himself by experiments in placing glass covered with honey upon yellow, pink or blue paper, that

Honey Bees Could Discriminate Colors,

And that they display a marked preference for blue above all other colors. The fact is, blue flowers are, as a rule, specialized for fertilization by bees, and bees therefore prefer this color; while conversely the flowers have at the same time become blue because that was the color which the bees prefer. As in most other cases, the adaptation must have gone on *pari passu* on both sides. As the bee-flowers grew bluer, the bees must have grown fonder and fonder of blue; and as they grew fonder of blue, they must have more and more constantly preferred the bluest flowers.

India-Rubber Varnish.—Dr. Elder gives the following recipe for making India-rubber varnish: Inclose 30 grams of finely-cut caoutchouc in a capacious linen bag, and suspend this within a flask containing a liter of benzine, by means of a thread held fast by the stopper, so that the bag remains near the surface of the liquid. In the course of six or eight days, the soluble portion of the caoutchouc—about 40% to 60%—will pass into the benzine, while the contents of the bag will expand enormously. The clear solution, which is quite viscous, and contains 1.2% to 1.5% of caoutchouc, is then carefully separated. The swelled contents of the bag retain one-fourth to one-third of the benzine used, and may be utilized for the preparation of an inferior kind of varnish. A solution of India-rubber in benzine, kept in half-full bottles, is decomposed on exposure to light, which may be seen by the change in the solution from a viscous to a thin fluid condition. Even in the dark this change goes on, but it takes about three times as long.

From 50 to 100 boats are now engaged in the Carquinez straits fisheries, catching upon an average of 20 to 30 salmon a day. A large number will soon be employed, and the average catch per boat will be larger during the next two months.

The Stock Yard.

Judging Stock at the Fairs.

As fair time will soon be around again, it will be pertinent to consider some of the points of premium awards. Evils which exist at present could hardly be more forcibly presented than in the following sketch in which an unsophisticated judge tells his experience:

Last fall my work was not crowding me very much, and I concluded to go to the fair with some of the neighbors and remain the whole week. Tuesday morning of the fair I was on the ground early to take a look at the stock. Neighbor Bronson was along with me. We went to the swine pens first. As I stated, it was early, and I did not think anyone would be about. We commenced at one end of a long row; most every pen had a man in doing something. We looked on and found they were washing the hogs for breakfast.

Each man took a pail of water with soap and brush and he scrubbed the hogs for more than a half hour; then he used some sweet-scented hair oil—maybe it was his wife's cologne bottle—gave them a clean bed and said he guessed he would give them breakfast. While they were eating, Bronson and I discussed their relative merits. Finally we selected the best pen, or the pen we thought ought to have the first prize, and I told the man, if justice was done, he would get the prize.

Soon we went to look at the cattle and there the herdsmen were washing and scraping just as at the swine pens.

Bronson and I selected the best Short Horns, Holsteins, and Jerseys, according to our notions, but we found our opinions differed from those of some other farmers who were looking at the herds. Next we went to the horse stalls, and such a looking set I never saw. Those horses' legs were done up in red flannel, and when the groom took them off he rubbed and scraped to beat all.

Well, the next day I was notified of my appointment as one of the judges of Poland China swine. Pretty soon the assistant superintendent of cattle told me my name had been handed in as judge of Short Horn cattle. Just then I heard the marshal calling, "John Oldman, John Oldman on the grounds? Wanted as judge of roadsters." "What does this mean?" I inquired of Bronson. "John," said he, "I don't know but I am too suspicious, but I believe there is a 'nigger in the wood-pile.' You have been pretty free with your opinion, and I sort of think some of those chaps have put you on for purpose."

Just then our conversation was interrupted by a call for the committee on Short Horn cattle. I supposed all the committee would be strangers to me, but I happened to know them both. John Jones was chairman. He was a horse doctor at the corners. William Patterson, the other member, was a butcher at Wildcat. The bulls were led out first. I picked on the same one I did in the morning as the best animal. Jones and Patterson objected and favored other animals.

Jones finally suggested that we go off one side and mark. Just then one of the cattle men steps up to me and slaps me on the shoulder, and said: "My name is Smith. That is my bull you picked on. I heard you talking about him the other morning, and I got you on the committee. What do Jones and Patterson know about cattle? You are right. That is the best bull in America. Stick to him, and I will do as much for you." I pulled away, afraid Jones and Patterson would notice Smith talking to me, but they were both busy. Another Short Horn man had Jones out behind a tree, and they were pulling a flask of brandy. I heard him say: "Stick to that bull, Jones." Patterson had gone to the stalls with one of the exhibitors by the name of Sampson. I went after him, and as I came near, I heard Sampson say: "I will sell you that calf by my bull for half price, and you know my bull is the best bull on the ground. Look at his pedigree! The idea of John Oldman thinking that a Seventeen ought to have first prize is preposterous!" I stepped aside, and when out of hearing called for Patterson. The committee finally got together. Before we commenced marking, Patterson said he wanted to call my attention to the pedigrees of those bulls. "It would never do to give first prize to a Seventeen. The best animal was the one that had the purest blood, etc." After a good deal of talking, Jones concluded to agree with Patterson, and Sampson's bull took first prize. Two singular things I learned afterwards:

1st. Jones some way owned a half interest in Patterson's calf.

2d. Sampson's bull had been a non-breeder for three years and was sold after the fair for beef.

They next led out the cows and we easily agreed on a "Young Mary," five years old, as the choice animal. She belonged to a man who passed us the dinner tickets. So we passed on the Short Horns, and they were so well pleased with our impartial and high-handed judgment that they asked us to act as judges of the milch cows. They were a large and varied lot. Each owner presented a full pedigree and a sworn statement of the amount of butter made by his cow in 7 days on pasture in the month of June preceding. One fine-looking young cow showed the remarkable record of 27 lbs, 4½ ounces. True, she was dry then, but that was occasioned by a fever, from which she had fully recovered.

The cow had a fine heifer calf, which I purchased at a very low price. In fact the man almost gave it to me, and Jones got the promise of another the next year. The cow was a sure heifer producer.

Soon after we were through judging, my son, Tom, came along and asked me to go to the stalls to see a dry heifer we sold for beef the year before. "She is in the stalls for milch cows," said he, "and some old fool has given her the first prize for a milch cow over some of the best cows in the State. Never had a calf. The boys told me how they oiled her bag and pulled her teats for six months to get them in good shape. And there is a scrub calf they have palmed off as hers, pointing to the one I bought. Good sell on some one. I am bound to know who owns that calf, it is such a huge joke." Tom laughed for half an hour. As soon as I could get away from him I hired a darkey for a dollar to take that calf out and kill it. He took the dollar, sold the calf for veal and told the story at my expense. They are a dreadful wicked set at the fair.

In judging the pigs it was easier; all we had to do was to give the premium to the pedigree that was worth the most.

One thing was not quite fair; the other judges received two pairs of pigs each, while I had only one. I paid 50 cents for a crate, $1 for a dray, and $2 express to get those pigs home. They gave my hogs the cholera, and I lost 100 head. My stomach got out of order, and I did not stay to judge on horses. Never intend to go to another fair—rather stay at home and be bored a week by tree peddlers, insurance agents, lightning-rod men, patent wrongs, blood suckers and snapping turtles.

Respectfully, John Oldman.

The Gavel Presentation. — One of the pleasant occurrences of Thursday evening, at the Riverside fair, was the presentation of a large-sized gavel, neatly made of lemon wood, embellished with a silver plate, bearing the inscription "Presented to the Riverside Citrus Fair Association by L. M. Holt, Editor of the *Press and Horticulturist*, Riverside." The presentation was appropriately made by Judge J. W. North, the founder and first President of the Riverside colony. He alluded to the early settlement of the colony, and the fact that its unparalleled success had greatly exceeded his most sanguine expectations. That its founders had builded better than they knew, he attributed largely to the fact that a selected, temperate, industrious and intelligent people were its first settlers. No doubt this is a truth of great import and credit to Judge North and his early associates. The useful token was received by the Chairman, Mr. Jas. Bettner, who tendered the thanks of the association to the donor in a graceful manner.

American Newspapers in 1882.—The American Newspaper Directory, which will be issued next month by Geo. P. Rowell & Co., of New York, will contain the names of 10,611 periodicals in the United States and Territories, which is a gain of 344 in the year just passed. The number of daily papers has increased in a somewhat larger proportion, and is now represented by a total of 996 against 921 in 1881. The largest increase has been in New York—10 dailies, 29 of all sorts. Illinois and Missouri show a percentage of gain which is even greater, while Colorado leads all others in the percentage of increase, both of daily and weekly issues. California, Nebraska, Nevada, Oregon, South Carolina, Tennessee, Vermont and West Virginia have fallen behind 1881 in the total number of periodicals issued. In Georgia, Maine and Massachusetts the suspensions have exactly counterbalanced the new ventures. In every State not mentioned above, and in the Territories, there has been an increase.

Improved Alden Drier.—The attention of readers is requested to the illustrated advertisement of the new-style Alden drier which is now appearing in the Press. The claims of the new-style machine are well set forth in the advertisement, and should be scrutinized by all who are thinking of procuring a drying apparatus for the coming fruit crop.

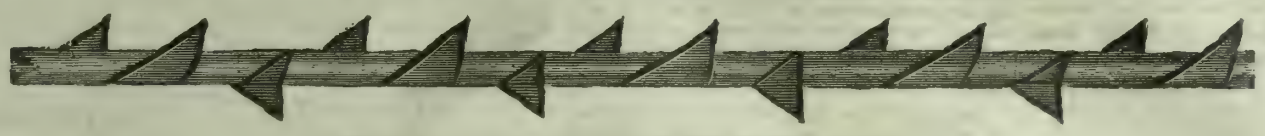
Large Egg.—Mrs. J. Raynor, of 1416 Folsom street, San Francisco, brings us a hen's egg nine inches by seven inches; weight, six ozs. The egg is supposed to have been laid by a half-breed Plymouth Rock and Brown Leghorn hen one year old.

The fruit cannery at Colton succeeded well, it is said, last year. It gave employment to many young women and girls, who worked well and satisfactorily to Mr. Wright, manager, and profitably for themselves. A large number of cans are now being made, preparatory for next season's crop.

The *Oregonian*, of Portland, says that the Northern Pacific will, within a short time, receive about 9,000 coolies from Hongkong. The work of gathering these coolies has already begun, and a fleet of three steamers and seven sailers has already been chartered to convey them to Portland.

Send name and address to Cragin & Co., Philadelphia, Pa., for Cook Book free.

AMERICAN BARB WIRE



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The Handsomest, Stiffest, and Most Durable. No Rust. No Decay. Secure Against Fire, Flood and Wind.

IT IS THE ONLY BARB WIRE that will prevent small animals, such as rabbits, hares, pigs, dogs, cats, etc., from passing through, under or over it, the barbs are so near each other.

The Barbs being triangular-shaped, like the teeth of a saw, and close together, there is no *cruelty to animals*, as they cannot pierce the hide; they only prick, which is all that is ever necessary as *no animal will go near a Barb Fence twice.*

AS THE WIRE IS NOT BENT OR TWISTED, its tensile strength is much greater than the Wire in all other Barb Wire Fences, as they are all made of twisted or bent Wire.

HEAT AND COLD CANNOT AFFECT THE AMERICAN BARB FENCE, as it can be allowed to sag when put up, enough to cover contraction and expansion, *because it is a continuous Barb, and cannot slip through the staples one inch.* Each panel of Fence takes care of itself.

The Barbs cannot be displaced or rubbed off, and are not pounded on and indented into the wire to hold them in place, as in other Barb Wire, thereby decreasing the strength of the Wire The Barbs are short, and broad at the base, where strength is required.

THE PAINTED WEIGHS A POUND TO THE ROD, so that the purchaser knows exactly how much fencing he is getting. Galvanized weighs slightly more.

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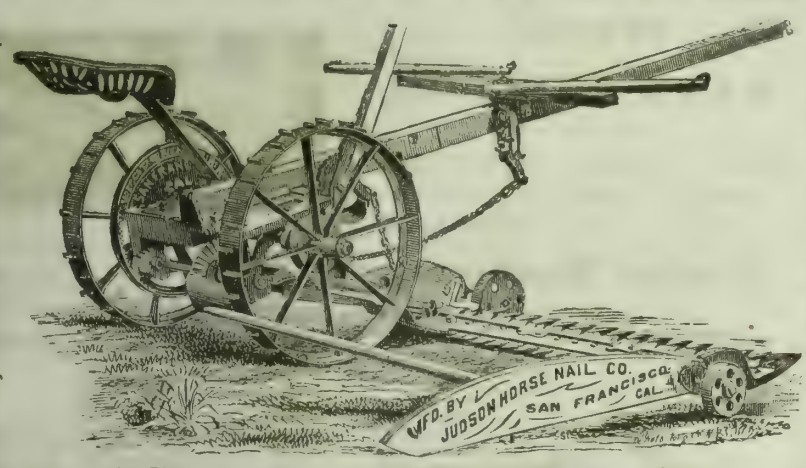

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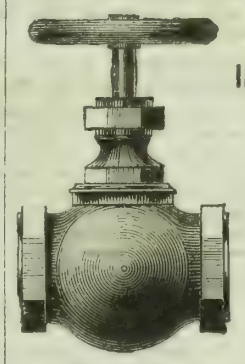

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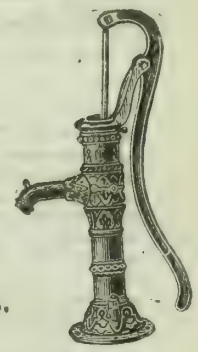

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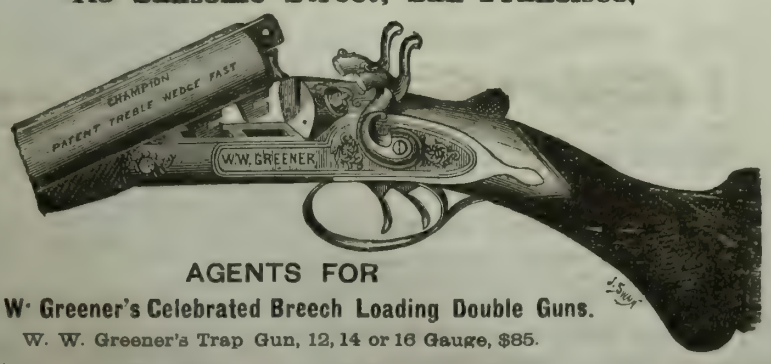

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FULL STOCK OF COLTS, PARKER AND REMINGTON GUNS, SHARPS, BALLARD, WINCHESTER, KENNEDY, MARLIN, and REMINGTON SPORTING RIFLES; PISTOLS OF ALL KINDS.

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N. B.—Mr. J. L. Boone, of the above firm, has been connected with the patent business for over 15 years, and devotes himself almost exclusively to patent litigation and kindred branches.

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PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co.'s SCIENTIFIC PRESS PATENT AGENCY, No. 252 Market St., S. F.

FOR THE WEEK ENDING MARCH 21, 1882.

255,135—DESULPHURIZING FURNACE—A Blatchly, S. F.
255,259—WATER WHEEL—Daniel Donnelly, Sutter Creek, Cal.
255,290—CANE, UMBRELLA HANDLE, ETC.—Thos. V. Keam, Keam's Canyon, A. T.
255,301—SHOE—David Lubin, Sacramento, Cal.
255,191—CLEARING SLOTS OF WIRE ROPE, R. R.—John Powers, S. F.
255,335—HOSE COUPLING—E. A. Rix, S. F.
255,372—CONDENSER FOR STEAM ENGINES—R. E. William-, Grass Valley, Cal.
256,334—SIDE SADDLE—L. A. Reister, Chico, Cal.

FOR THE WEEK ENDING MARCH 28, 1882.

255,481—GATE—Charles H. Allison, Elmira, Cal.
255,584—FIRE ESCAPE LADDER—R. F. Bridewell, S. F.
255,6 1—CAR-COUPLING—L. J. Cralle, Santa Rosa, Cal.
255,602—FRUIT DRIER—Charles A. Curran, Albany, Oregon.
255,509—STEAM GENERATOR—Wm. D. Horker, Oakland, Cal.
255,642—BOTTLE AND BOTTLE ATTACHMENT—D. Lubin, Sacramento.
255,533—PICK—Eben R. Ray, Bodie, Cal.
255,523—PIPE-COUPLING—S. Lightburne, Jr., S. F.
255,678—PULVERIZING MILL—Wm. C. Salmon, Portland, Oregon.
255,736—VEHICLE BOLSTER—Dyas Shelton, Santa Rosa, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast Inventors transacted with perfect security and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of special mention:

SIDE SADDLE.—Lewis A. Reister, Chico, Butte Co., Cal. No. 255,334. Dated March 21, 1882. The improvements on this new and improved side-saddle consist in sundry details of construction. It is constructed of leather, with plain or quilted seat. Having no side bars or cantle-board, the saddle fits directly upon the horse's back, and the rider sits low down. The advantage of this is that there is no rock from side to side, and no danger of hurting the horse's back. The rear portion of the saddle or the seat has no frame whatever, and is simply a pad which extends backward from the steel saddle-tree, and lies directly upon the horse's back. It is an objection to the old style side-saddle that it gives its rider an awkward and uncomfortable position, and many have preferred to use an ordinary blanket with stirrup and hand-hold. This new saddle gives to the rider a comfortable and graceful position, embodying all the advantages of the blanket alone, while giving a firmer and more secure seat, because of the steel tree. By having the horn low down, the right knee does not rest too high for ease, nor do the hips cramp, as they are liable to do with a curving tree of the old style.

WELL-BORING APPARATUS.—Frank Whelan, S. F. Dated March 14, 1882. No. 254,892. This invention, relating to well-boring apparatus, consists of a supplemental tool holder, so constructed and arranged as to operate in connection with a rod, or series of jointed rods, which extend from the top to the bottom of the tube or well, the lower joint or length being made square, or so formed as to receive and steady the clasps or guides from a short supplemental tool holder, which slips down on one side of the main rod, and a wire, or other flexible connection, from its upper end, by which it may be suspended or drawn up with the tool, without disturbing or removing the main rod. The latch is operated by suitable connection, so as to be detached when it is desired to draw the tool up; and, by a peculiar device, the tool-holder is always turned so as to fit the shank in the proper position. This tool-holding device can be utilized either in drilling or boring of wells, or as a tool clamp or drill-rod grab.

FARM GATE.—Charles H. Allison, Elmira, Solano county, Cal. No. 255,481. Dated March 28th, 1882. This is a gate made longer than the width of the gate, opening and having one of its bars supported upon rollers or pulleys, so that the gate may be moved backward and forward across the gate, opening and balanced upon the rollers. In combination with this sliding-gate is a wheel, mounted upon the posts of the gate, opening and having ropes or cords wound upon it from opposite sides and leading down beneath pulleys, and thence to the ends of the gate, so that when the wheel is turned by one of the cranks which project to each side, the ropes will operate to move the gate upon its rollers, and thus open or close it. In some cases the ropes may pass directly from the wheel to the tops of the gate-posts, which may extend upward.

PIPE COUPLING.—Stafford Lightburne, Jr., assignor of one-half to J. R. Mackenzie, S. F. No. 255,523. Dated March 28th. This improvement in pipe coupling consists in a novel formation of locking-lugs and slots on the meeting ends of the coupling by which the two parts may be firmly united, and in combination with these, the inventor employs a peculiarly constructed elastic ring, by which he is enabled to make a perfectly tight joint. The present invention is an improvement on a coupling patented by the same inventor in 1877. A cap is employed to protect the end of any coupling when separated, and an implement by which the locking device may be unclasped or released is also used.

TREADLE POWER FOR GRINDSTONES.—Joshua M. Nelson, Oakdale, Stanislaus county. Dated February 14, 1882. No. 253,620. This treadle power for grindstones consists in the combination and arrangement of parts whereby a regular and continuous motion may be imparted to the stone, securing at the same time the comfort of the operator. More particularly, it consists of a suitable frame or stand carrying a grindstone and water trough, motion being transmitted to said stone from suitable treadle levers through the intermediate mechanism of sprocket wheels or other similar devices attached to the stand.

GRAIN SAVING ATTACHMENT FOR SEPARATORS.—Neil McLean, Watsonville, Santa Cruz Co., Cal. No. 253,936. Dated, February 21, 1882. This grain-saving device for thrashing machines consists in the details of construction of a supplemental attachment to a straw carrier, whereby the straw is stirred and agitated as it leaves the carrier, so the grain mechanically entangled in the straw may escape and be recovered.

HOSE COUPLING.—Edward A. Rix, San Francisco. No. 255,335. March 21, 1882. This invention relates to a device for securing the ends of flexible hose to couplings. It consists of a tube fitting within a section of hose, and provided with a flange, against which abuts another flange combined with a ring and clasp, provided at one end with a small screw, and at the other end with a sectional ring having fastening lugs and bolts.

ANIMAL TRAP.—Alexander Andre, Bakersfield. Dated, February 21, 1882. No. 253,907. This is a trap for gophers and other burrowing rodents, and it is made in such a manner that the gate is less liable to become choked, so as not to close freely. A peculiarity is that a little slide makes the tube dark, so that no light shall make the mole or gopher suspicious. The trap is said to have been a very successful one.

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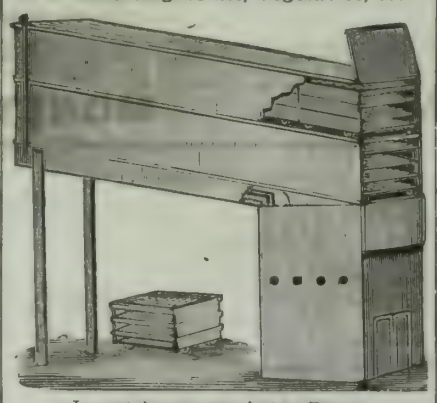

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In the evaporator shown by the above cut we retain the Alden process, i. e., "moving the fruit in currents of heated and humid air," while the capacity is greater and the cost much less than in the old style Alden machines, which have vertical chambers. The new style, having the *inclined* chambers, requires no hoisting apparatus, no brick work nor building, and they can be set up, taken down and moved anywhere and by anyone in a few hours. Thousands of them are in successful operation in the Eastern States, giving perfect satisfaction. They are simple, compact, portable, and easily understood and operated. They are substantially made of the best material and the fruit frames have galvanized wire cloth. The heat radiating from the smoke-pipe enters the lower chamber through holes in its bottom, so that all the heat is utilized. The stove can be used for house warming in the winter. Only one person is required to operate (including firing) this evaporator, and the product is equal to the best Alden fruit. The loaded frames are moved up through the upper and down through the lower chamber on rollers, as shown, which gives them a line of travel of 48 ft. We furnish two sizes of this style of evaporator. No. 1 is 17 ft. long and has 33 frames, 39 inches square each, giving a total drying surface of 500 ft.; capacity, 60 bushels of apples per day. Price, for everything complete, on board cars, $250. No. 2 is 10 ft. long and has 20 frames, 27 inches square each, giving about 100 ft. of surface; capacity, 20 bushels per day. Price, complete, $160. We continue to furnish the old-style Alden apparatus for large factory purposes at reduced prices.

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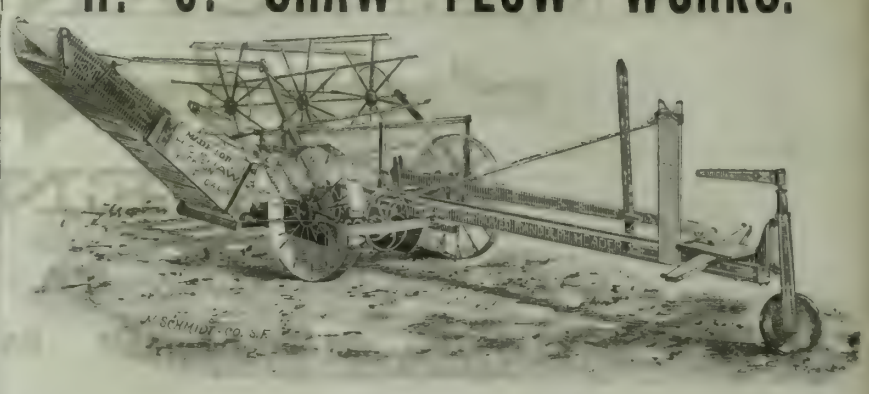

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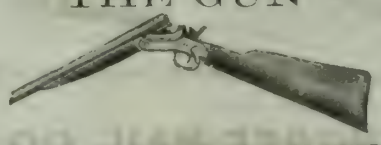

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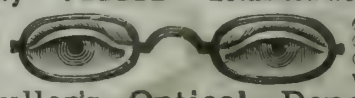
1863  1882
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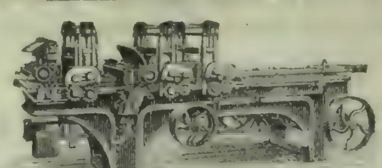

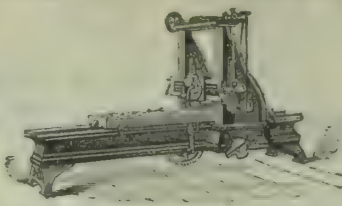

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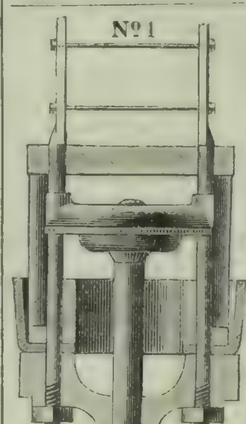

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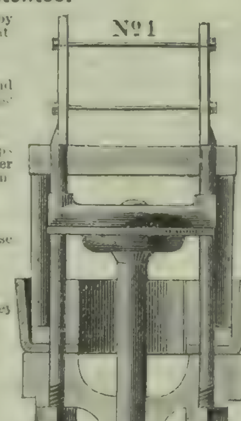

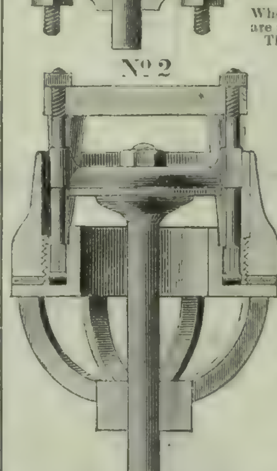

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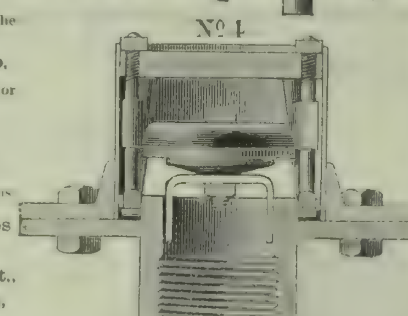

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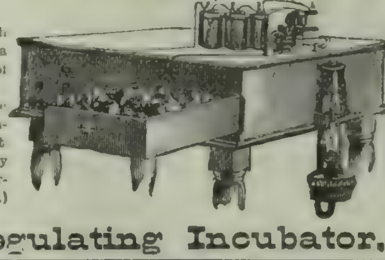

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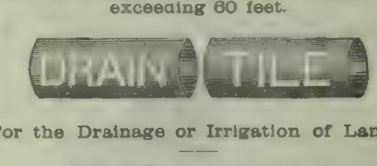

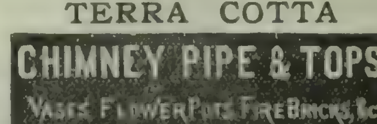

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BREEDERS' DIRECTORY.

Six lines or less in this Directory at 50 cts a line per month.

CATTLE.

WILLIAM NILES, Los Angeles, Cal. Thoroughbred Poultry, Cattle and Hogs. Write for circular.

PETER SAXE & SON, Lick House, S. F. Importers and Breeders for past *eleven* years. Berkshires, "Jerseys," "Short Horns," and all varieties of Sheep, and their grades.

COTATE RANCH BREEDING FARM, Page's Station, S. F. & N. P. R. R., Sonoma County. Wilfred Page, Manager. P. O. address, Petaluma, Cal. Short Horn Bulls and Cows, Spanish Merino Bucks and Ewes, for sale at reasonable figures.

SYLVESTER SCOTT, Cloverdale, Sonoma Co., Cal., Breeder of Recorded Thoroughbred Short Horn Cattle and Spanish Merino Sheep. Jacks and Jennets for sale at reasonable figures.

J. ALEXANDER, Stockton, Cal. Breeder of first-class Dairy Stock and Berkshire Swine. Half and three-quarters Jersey cows and heifers for sale.

ROBT. BECK, San Francisco. Breeder of Thoroughbred Jersey cattle. Herd took Six Premiums of the eleven offered at State Fair, 1881.

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R. McENESPY, Chico, Butte Co., Cal. Breeder of Thoroughbred Devons.

HENRY PIERCE, 728 Montgomery Street, S. F. Breeder of Jersey, Guernsey and Ayrshire Cattle.

B. F. FISH, Santa Clara, Cal. Breeder of thoroughbred Jersey Cattle and Black Hawk Comet horses.

HORSES.

J. R. ROSE, Lakeville, Sonoma Co., Cal. Breeder of Thoroughbred Devons, roadster horses and Percheron draft horses.

E. A. SACKRIDER, 325 Eleventh St., Oakland, Cal Importer of Norman-Percheron horses. Horses on hand and for sale at reasonable terms.

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L. U. SHIPPEE, Stockton, Cal. Importer and Breeder of Spanish Merino Sheep. Durham Cattle. Essex and Berkshire Swine. High Graded Rams for sale.

J. B. HOYT, Bird's Landing, Solano Co., Cal. Breeder and Importer of Shropshire Sheep. Rams and Ewes for sale. Also, cross-bred Merino and Shropshire.

E. W. WOOLSEY & SON, Fulton, Sonoma Co., Cal. Importers and Breeders of choice Thoroughbred Spanish Merino Sheep. City office, No. 418 California St., S. F.

POULTRY.

THE PACIFIC COAST THOROUGHBRED POULTRY ASSOCIATION. 1011 Broadway, Oakland, Cal., J. M. Halsted, Manager. All the leading varieties of land and water fowl for sale. Eggs from Plymouth Rocks, Buff and Partridge Cochins, Light and Dark Brahmas, Brown Leghorn, Black Spanish, Houdans, etc.; $2 per dozen. Langshans, $3. Bronze Turkeys, $4. Dealers in Incubators, Brooders, Egg Testers, etc. Send stamp for circular.

TOULOUSE GEESE at $15 per pair; $20 per trio; Eggs, $8 per dozen. Bronze Turkeys, $10 per pair; Eggs, $4 per dozen. Address T. D. Morris, Sonoma, Cal., breeder and importer of all kinds of thoroughbred poultry.

T. WAITE, Brighton, Sacramento Co., Importer and Breeder of Thoroughbred Poultry. Took Premiums at State Fair, 1880 and 1881, of Leghorns, Brown and White, S S. Hamburg, Plymouth Rocks and Pekin Duck's Eggs $3 per dozen.

H. S. SARGENT, Stockton, Cal. Importer, Breeder and Shipper of Poland China Pigs, and Bronze Turkeys.

MRS. L. J. WATKINS, San Jose, Cal. Premium Fowls, White and Brown Leghorns, Plymouth Rocks, Pekin Ducks, etc.

A. O. RIX, Washington, Alameda County, California. Breeder of Thoroughbred Poultry. Send for Circular.

MRS. M. E. NEWHALL, San Jose, Cal. Bronze Turkeys, Brown and White Leghorns, Plymouth Rock, Pekin Ducks.

L. C. BYCE, Petaluma, Cal. Breeder of Thoroughbred Poultry. Illustrated circular free.

J. M. HALSTED'S NEW INCUBATOR. Price $30. No 1011 Broadway, Oakland. Send for circular

SWINE.

JOHN RIDER, Sacramento, Cal. Breeder of Thoroughbred Berkshire Swine. My stock of Hogs are all recorded in the American Berkshire Record.

TYLER BEACH, San Jose, Cal. Breeder of thoroughbred Berkshires of stock imported by Gov. Stanford

BEES.

J. D. ENAS, Sunnyside, Napa, Cal., Breeds Pure Italian Queen Bees. Comb Foundation.

The American Driven
WELL WATER SUPPLY SYSTEM
FOR MINING, IRRIGATION, MECHANICAL DOMESTIC & MUNICIPAL PURPOSES
Send for Circulars.
BABCOCK & CO.,
40 Merchants' Exchange San Francisco, Cal.

To Fish Raisers.

I am now ready to sell Carp which were imported by me from Germany in 1872, in lots to suit. Address
J. A. POPPE, Sonoma, Cal.

---

75 LOVELY FRENCH CHROMO CARDS with name on 10 cents, Chas. Kay, New Haven, Conn.

GEO. TREFZER, Napa City, Cal.

Breeder and shipper of the following varieties, will sell after this day at greatly reduced prices, as sickness in the family compels me to reduce my stock. My breeding yard of Black Cochins (1 cock and 7 fine hens), all good birds, including my imported trio for which I paid $25 in the East eggs, $2 per setting. My breeding yard of Brown Leghorns, consisting of 1 fine imported cockerel and 10 fine hens for $20; eggs, $2 per setting, or 2 settings for $3. White Leghorn eggs, $2 per setting or 2 settings for $3. Have as fine a White Leghorn cockerel in my breeding yard as can be found in America. Plymouth Rocks, $6 per pair or $8 per trio; eggs, $2 per setting, or 2 settings for $3. My Plymouth Rocks breeding yard consists of 1 very fine imported cockerel from James E. White, and 8 fine hens and pullets. Langshan eggs, $4 per setting; no fowls of this variety for sale this season. Pekin Ducks, $2 each; eggs, 11 for $2. Toulouse Geese eggs, $4 per setting of 6. Anybody that wants to buy fine Fowls for little money have an opportunity to do so now. Please address as above.

MAKE HENS LAY.

An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable. Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

PETALUMA INCUBATOR.

[Illustrated in RURAL PRESS, Dec. 3, 1881.]

Awarded the first premium over the Axford or National and others at the Petaluma fair of 1881.

Furnishing ample heat, easily managed and nothing to get out of order.

PRICES.

200 Egg capacity	$60.00
360 Egg capacity	75.00
600 Egg capacity	90.00

I. L. DIAS,
Manufacturer and Proprietor,
Box 242, Petaluma, Cal.
WIESTER & CO., 17 New Montgomery St., S. F., Agt's

PRICES REDUCED
TO SUIT THE TIMES.

In order to make room for young growing stock, I offer for sale 600 fine thoroughbred fowls, none over one year old. White and Brown Leghorns and P. Rocks, $2 each, or $20 per dozen. Eggs from above varieties $1.50 per setting of 13, or two settings for $2 50 Pekin duck eggs, $1 for 9. Langshans, Brahmas, Black Leghorns and Rouen Duck eggs, $3 per setting.

My Birds are raised on large farms, where they have unlimited range, giving them a

VIGOROUS CONSTITUTION,

Which is very desirable in any Breeding Stock.

For further information send 3-cent stamp for new circular and price list, to

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ITALIAN SHEEP WASH.

EXTRACT OF TOBACCO.

Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

SCAB OF THE SHEEP.

The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

For particulars apply to CHAS. DUISENBERG & CO. Sole Agents, 314 Sacramento St., San Francisco.

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Thoroughbred

Spanish Merino SHEEP.

We offer for sale 400 HEAD OF YOUNG EWES AND RAMS. Prices always reasonable and terms liberal. Quality and condition superior to any flock in this State.

J. H. STROBRIDGE, Haywards, Alameda Co.
E. W. PEET, Agent.

LITTLE'S SHEEP DIP.

Price Reduced
TO $1.25 PER GALLON.

Twenty gallons of fluid mixed with cold water will make 1,200 gallons Dip.

Apply to FALKNER, BELL & CO., San Francisco

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FOR SALE.

Can be forwarded by express, or rail or water, with safety. Inquire of LEVI DAVIS,
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STANDARD POULTRY.

American Sebrights, Langshans, Plymouth Rocks, and Brown Leghorns. Choice birds for sale in pairs, trios, or breeding pens. Eggs for hatching in season. Satisfaction guaranteed. Write for prices. Address,
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YOUR NAME on 50 fine Chromos, or 40 Comic transparent cards, 10c. Wise & Co., Clintonville, Ct.

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EGG FOOD
To Keep Hens Healthy
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Hogs & Cattle.

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Dish-Faced Berkshire Pigs, Poland China Pigs, Jersey Cattle, etc.

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WILLIAM NILES,
Los Angeles, Cal.

SHORT HORNS FOR SALE.

I have for sale at my ranch, near Oroville, Butte county,

12 Young Short Horn Bulls,

From one to two years old. Price from $100 to $200 each.

ALSO

50 Short Horn Cows and Heifers.

All these cattle are red Durham—all thoroughbred. They are offered at private sale to those wishing to secure good stock. MOSES WICK.
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The undersigned now have for sale a few choice Thoroughbred and high grade bulls from the best milk strains Our herd consists of "Young Marys," "Daisies," "Imp Britannias," etc. Prices Reasonable.

HYDE & MOORE, Visalia, Cal.

We have for sale at our farm at Mountain View, thoroughbred

BERKSHIRE PIGS

From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880. Pigs from Imported Boar and Sow, $25 each. From Imported Boar and Thoroughbred Sow, $10 to $20. Our Imported Pigs are as nice Pigs as there are in the State. Address JACKSON & TRUMAN, S. F.

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My Berkshires are Thoroughbred, and selected with great care from the best herds of imported stock in the United States and Canada, and for individual merit cane not be excelled. My breeding stock are recorded in the "American Berkshire Record," where none but pure bred Hogs are admitted. Pigs sold at reasonable rates. Correspondence solicited.

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18th and A Streets, Sacramento City, Cal.

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All kinds of Fancy and Staple Groceries, wholesale and Retail, at their Stores,

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— AND
1144 AND 1146 FOLSOM ST., S. F.

Goods delivered to any part of the city, or to any railroad, steamer or vessel, free of charge.

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Orders most respectfully solicited.

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Hooper's South End Grain Warehouses,
Cor. Japan and Townsend Sts., S. F.

First-class Fire-proof Brick Building. Capacity, 10,000 tons. Goods taken from the Dock and the Cars of the C. P. R. R. and S. P. R. R. free of charge. Storage at Current Rates. Advances and Insurance effected.

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SAN FRANCISCO, CAL.

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In 10,000 Shares of $100 each.
Capital Paid up in Gold Coin, $531,200.
Reserve Fund and Paid up Stock, 21,178.

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LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

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ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1882.

Duroc, or Red Hogs.

The undersigned are making a specialty of raising this celebrated breed of hogs for breeding purposes. They are gentle, thrifty and of very rapid growth, and better adapted to this climate than any other breed of hogs. We have hogs of this breed now upon our ranch, 11 months old, weighing over 400 lbs. each N. W. Spaulding, U. S. sub-Treasurer, San Francisco, killed one of these hogs Dec. 14, 1881, at the age of 16 months, that weighed 583 lbs. gross, and 584 lbs. dressed.

On Dec. 22, 1881, Messrs Zimmerman, Strouse & Co., of the Bay City market, S. F., killed one weighing 1018 lbs. net when dressed, 3 years and 3 months old. We are prepared now to ship to any part of this State these pigs 6 to 12 weeks of age. For prices and circulars address,

HINCKLEY & GETCHELL,
Laurelles Ranch Monterey, Cal.

Stock Range.

Parties wishing to purchase good stock raising lands, unaffected by severe drouths, will do well to address the undersigned. The lands can be purchased cheap, in lots from 100 to 2,000 acres. It is partly low table and rolling land, partly clear and level. Good for vine and fruit raising. Will raise vegetables and all kinds of grain. Crops certain every year. Near town and a $10,000 public school house. Price, $3 to $5 per acre. Good local market for fruit, vegetables, grain, poultry and dairy produce. Address the proprietor,

EDWARD FRISBIE,
Anderson, Shasta Co., Cal.

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At fair rates of interest and
FARMS BOUGHT AND SOLD.
Send full Description of Property to
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MANUFACTURER OF FIRST-CLASS
Buggies, Farm & Freight Wagons,
OF ALL DESCRIPTIONS,
Cor Thirteenth and J Sts., Sacramento, Cal.
Repairing promptly attended to.

H. H. WILSON & SON,
513 Clay St., S. F.
Importers and Dealers in Guns, Rifles Pistols, and Fishing Tackle, etc

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Good Crops Every Season Without Irrigation.

Free by mail, specimen number of "*The California Real Estate Exchange and Mart*," full of reliable information on climate, productions, etc., of

SANTA CRUZ COUNTY.

Address "*Exchange & Mart*," Santa Cruz, Cal.

MERRILL'S PATENT REIN HOLDER.

This is a sure and certain preventative to keep horses from running away. **Price $2.50.** Address W. P. MERRILL, Florin, Sacramento Co., Cal.

Jackson & Truman's Agricultural Works.

We would call our readers attention to the great improvements in hay-baling machinery, as contrasted with that made a few years since. Then hay-bailing had not reached such a state of perfection as it now has. On another page we present the advertisement of Messrs. Jackson & Truman, the largest Agricultural Implement and Machinery Manufacturers in San Francisco, having large and complete shops near the S. P. R. R., which are well worthy a visit. They also have a large warehouse on Bluxome street, near Fifth, which is filled with Engines, Separators, Hay Presses, Self-Feeders, and complete machinery for handling grain, baling hay, etc. They build special Hay Presses to put ten tons in a car, for countries where freight is very high. They are sending quite a number of these to Arizona. They make the latest improved presses for baling hay, hides, and wool, their line of presses having a splendid reputation all over the Pacific Coast. This firm having made hay-bailing machinery a study, produce machinery adapted for different localities, and their machines have no superior. They also build the Jackson Thrashing Rig, which is too well known to need any words at our hands. Their line of goods is standard—their name on a machine is a guarantee of success. They employ 100 men, full time, and are making preparations to run a night force. Their large, new catalogue is nearly ready, and can be had by sending your address to them. This firm keeps right on producing new inventions, which at once take the lead. We extend to them our wishes for the success in the future which they have had in the past.

Try the Rural Press for 25 Cts. a Month.

Tell your friends that they can have the PACIFIC RURAL PRESS mailed to them one month on trial for 25 cents. Four back Nos. will be added on receipt of 10 cents additional—making eight copies for 35 cents. It is a handsomely printed and illustrated home journal. Mail it to friends abroad.

Rooms and Board in Oakland.

Rooms (with or without board) can be had in Oakland on reasonable terms, with a family of English people, location, a pleasant one within 3 blocks of Postoffice. Good references furnished and required. Call or address No. 1274 Franklin St., Oakland, or enquire at the office of his paper.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

LIVERY STABLE IN OAKLAND.—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

POSTMASTERS having their attention directed to this notice by the publishers, are requested to act as agent for this paper (whenever they can do so without interference with our published list of solicitors), and we will allow them a favorable commission on subscriptions, as per terms published elsewhere.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances. The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

HOW TO STOP THIS PAPER.—It is not a herculean task to stop this paper. Notify the publishers by *letter*. If it comes beyond the time desired, you can depend upon it we do not know that the subscriber wants it stopped. So be sure and send us notice by *letter*.

REMITTANCES to this office should be made by postal order or registered letter, when practicable; cost of postal order, for $15 or less, 10 cts.; for registered letter, in addition to regular postage (at 3 cts. per half-ounce), 10 cts.

SAMPLE COPIES.—Occasionally we send copies of this paper to persons who we believe would be benefited by subscribing for it, or willing to assist us in extending its circulation. We call the attention of such to our prospectus, terms of subscription, etc., and request that they circulate the copy sent.

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

A TURNED LEAF will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDHOUT & Co., 10 Barclay St., N. Y.

ANNUAL STATISTICIAN OF 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 502 Taylor St. Price, $4.

Information on Fruit Growing, Transportation, Marketing, Etc.

The Official Report (by J. H. WHEELER, Secretary), of the CALIFORNIA STATE FRUIT GROWERS' CONVENTION, held at Sacramento, Dec. 6th, 1881, as published in several issues of the PACIFIC RURAL PRESS, has been issued in a pamphlet containing 24 solid reading pages. Besides the transactions of the State body in council, the work reports the ideas and practical experiences stated by individual fruit growers.

Mailed postpaid from the PACIFIC RURAL PRESS office, S. F., on receipt of 10 cents.

Meteorological Summary for the Month of March, 1882.

Station, San Francisco, Cal.

Date	Daily Mean Barom.	Daily Mean Temp.	Daily Mean Humid'y	Prevailing Direction of Wind	Daily Rainfall.
1	30.105	54.8	88.0	W	.04
2	30.099	50.8	74.1	W	.02
3	30.302	47.3	56.0	W	....
4	30.355	48.3	77.7	W	....
5	30.332	50.0	62.7	NW	....
6	30.331	51.8	35.3	N	....
7	30.267	51.8	44.3	W	....
8	30.151	49.0	68.3	W	....
9	30.117	47.7	62.3	SW	.13
10	29.924	48.7	70.7	SW	.73
11	30.008	49.7	71.7	NE	.34
12	29.834	53.0	63.3	E	.13
13	29.773	50.3	78.7	SE	.66
14	29.810	51.7	73.3	S	.49
15	29.791	48.8	74.0	SE	.63
16	29.968	49.0	71.7	SW	.06
17	30.122	49.3	72.7	SW	....
18	30.001	49.8	75.7	SW	.18
19	30.175	45.3	63.7	W	.04
20	30.336	48.2	57.0	N	....
21	30.301	53.0	65.7	N	....
22	30.292	57.2	61.7	NW	....
23	30.277	57.0	69.7	W	....
24	30.128	58.0	70.3	W	....
25	29.946	62.5	45.0	N	....
26	30.053	67.8	43.7	NW	....
27	30.181	63.0	59.7	W	....
28	30.181	56.2	82.7	W	....
29	30.135	59.8	67.3	W	....
30	30.171	56.0	29.0	W	....
31	30.122	53.0	84.3	W	....
Sums	933.588	1,638.8	2,071.9		3.45
Means	30.116	52.9	66.8	W	....

METEOROLOGICAL SUMMARY. Highest barometer, 30.382, March 4th, at 11:58 A. M.; lowest barometer, 29.714, March 13th, at 3:58 P. M.; monthly range of barometer, .668; highest daily average, 30.355, March 4th; lowest daily average, 29.773, March 13th; highest temperature, 73°, March 26th and 27th; lowest temperature, 41°, March 20th; monthly range of temperature, 32°; greatest daily range of temperature, 21°, March 27th; least daily range of temperature, 6° 5', March 8th and 13th; highest daily average of temperature, 67.8°, March 26th; lowest daily average of temperature, 45.3°, March 13th; mean of maximum temperatures, 59.2°; mean of minimum temperatures, 47.5°; mean daily range of temperature, 11.7°; highest observed relative humidity, 93%; lowest observed relative humidity, 17%, at 11:58 A. M., March 7th; highest daily average of relative humidity, 88%, March 1st; lowest daily average of relative humidity, 35.3%, March 6th; average cloudiness during month, 43%; total movement of air, 7,042 miles; greatest daily movement of air, 341 miles, March 27th; least daily movement of air, 88 miles, March 23d; average daily movement of air, 227.2 miles; average hourly velocity of wind, 9.5 miles; maximum hourly velocity of wind, 36 miles, west, March 27th; average hourly velocity and prevailing direction of wind at 3:58 A. M., 6.7 miles, west; average hourly velocity and prevailing direction of wind at 11:58 A. M., 11.1 miles, southwest; average hourly velocity and prevailing direction of wind at 7:58 P. M., 7.9 miles, west; dates of solar halos, March 6th, 12th, 22d, 23d, 24th, 26th and 28th; dates of lunar halos, March 3d, 24th and 28th; dates of frosts, March 9th, 20th, 21st, 22d and 23d.

AVERAGE TEMPERATURE AND THE RELATIVE HUMIDITY AT DIFFERENT HOURS.

Time.	Av'age Temperature	Av'age Dew Point.	Average Relative H'midity Per Cent
3:58 A. M.	49.4	41.4	75.6
7.58 A. M.	50.4	41.0	72.4
11:58 A. M.	56.7	39.5	55.4
3.58 P. M.	56.4	41.0	58.9
7.58 P. M.	52.6	42.1	69.5

During the month there were 13 clear, 11 fair, 6 cloudy, and 1 foggy days. Rain fell on 13 days.

Tabular statement showing the mean barometer, mean temperature, rainfall, etc., for the past month and a comparison with preceding years:

Years	Mean Barometer	Mean Temperature.	Mean Relative Humidity.	Maximum Temperature.	Minimum Temperature.	Prevailing Wind.	Rainfall.	Rainfall Since July 1st.
1872	30.111	54.3	84.4	64	48	W	1.59	29.75
1873	30.159	54.5	72.0	73	45	W	0.79	15.21
1874	30.046	50.9	66.0	62	42	W	3.36	23.03
1875	30.175	51.9	66.9	67	42	W	1.30	19.22
1876	30.018	53.2	66.5	70	41	W	5.49	29.62
1877	30.024	56.8	74.6	73	47	W	1.08	10.59
1878	30.036	55.8	74.9	66	46	SW	4.56	33.95
1879	30.100	57.0	72.8	77	47	W	3.75	20.15
1880	30.116	48.9	70.6	66	39	W	2.08	15.48
1881	30.096	54.0	70.3	76	40	W	0.90	26.95
1882	30.116	52.9	66.8	73	41	W	3.45	14.67
Means, etc.	30.091	53.7	71.4	69.7	43.5	W	3.03	21.69

Signal Service Meteorological Report.

SAN FRANCISCO.—Week ending April 11, 1882.

HIGHEST AND LOWEST BAROMETER.

Apr. 5	Apr. 6	Apr. 7	Apr. 8	Apr. 9	Apr. 10	Apr. 11
30.169	30.262	30.212	30.087	29.960	30.074	30.142
30.090	30.146	30.087	29.960	29.790	29.810	30.074

MAXIMUM AND MINIMUM THERMOMETER.

56	53.5	56	60	55.5	53	54
43.5	45	47	47.5	47	44.5	46

MEAN DAILY HUMIDITY.

82.3	56.7	68	75.7	74	73.3	73.3

PREVAILING WIND.

SW	NW	W	SW	SW	W	W

WIND—MILES TRAVELED.

338	456	234	185	199	268	210

STATE OF WEATHER.

Fair.	Clear.	Clear.	Cloudy	Cloudy	Clear.	Clear.

RAINFALL IN TWENTY-FOUR HOURS.

.30			.27	.44		

Total rain during the season, from July 1, 1881, 14.71 inches.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, April 12, 1882.

The markets have been rather steady, although much greater speculative demand has prevailed, and the week has been livelier than usual. Wheat has run along about as before. The latest from abroad is the following:

LIVERPOOL, April 11.—Wheat, 9s 8d@9s 11d ₱ ctl for California average White; 10s@10s 3d for California Club; 10s 3d@10s 9d for Red Western Spring; 9s 6d@10s for Red Winter. Floating cargoes, quiet. Cargoes on passage and for shipment, quiet. California cargoes off coast, 47s 9d ₱ 500 lbs; just shipped, 45s 6d; nearly due, 47s 6d. Mark Lane, Breadstuffs easier. Corn, 6s 2d ₱ ctl for new mixed Western; 6s 6d for old.

Eastern Wool Markets.

NEW YORK, April 8.—The number of really desirable parcels in the hands of dealers is quite moderate, with a few limited in value to extreme rates, higher, in fact, than can be obtained at a moment from any source. As a rule, however, the tendency is to keep the supply in motion, and while there is no strife to realize, or unusual efforts to secure customers, sellers can be found against all calls made. The demand this week has been very limited from all quarters and for all kinds, with the market presenting an excessively dull and stupid tone. Dealers generally are complaining of the present condition of trade, and reiterating the old fears that the revival will set in just about the time when the tone should be kept easy. The sales include 25 bales, of 200,000 lbs, Spring California, 28c; 48,000 heavy, 17c; 6,000 scoured, 65@51c; 30,000 Oregon, 29@30c; 54,000 Spring California, private terms.

BOSTON, April 8.—The market in Wool is unsatisfactory. The transactions have been considerable, but holders have made some slight concessions, and sales can only be forced at low prices. Arrivals of foreign Wool have been considerable, comprising Cape, Australian, and two cargoes of Cordova, the latter for our leading carpet mills. Sales heavy X Ohio at 43@44c; good average X and XX, 42@43c; Michigan fleeces have been sold to some extent at 40@41c. X and Ohio and Michigan No. 1, 44@47c ₱ lb. Combing and delaine selections are in moderate demand, and have been selling at 44@47c; fine delaine and combing, 48@48½c. Choice combing and unwashed fleeces are quiet, and prices range from 25@30c; fine, 25@30c; medium grades of California Wool are quiet, and sales could only be forced at lower prices. Pulled has been in fair demand. Choice supers have been selling at 48@50c; common to good supers, 25@42c. In Australian Wool sales have been made at 44@45c; choice Cape, 33c; and Montevideo, Magdalena and Carpet at about previous prices; The sales of the week for all kinds have been 225,000 lbs.

The Foreign Review.

LONDON, April 11.—The Mark Lane *Express*, in its review of the grain trade for the week, says: The supply of mature Wheats is irregular, and very little business is reported. Trade is generally firm, with a limited demand. Prime samples have improved 6d@8s, in some cases. Foreign Wheat is almost nominal in trade, and the supply is moderate. A scarcity of American Red at Liverpool has caused an occasional advance. Business in off-coast supplies is active, but buyers are rather shy. Twenty cargoes have arrived, and 16 have been sold floating. There is no inquiry for cargoes on passage or for shipment. The supply of Flour is ample, and the market continues quiet and unchanged. In foreign the business is small. In Barley the fine sorts are unchanged, but the indifferent quality is neglected. Foreign is in limited demand. Oats sold readily. Foreign, quiet and unchanged. Sales of English Wheat for the week, 34,325 quarters, at 45s 5d, against 34,330 quarters, at 44s 4d, for the corresponding week of last year.

Freights and Charters.

There has been a good demand for tonnage during the week, and over a dozen vessels have been taken on the spot. Prices are firm, and at the close show a fractional advance. The ship *Riverside*, 1,295 tons, is chartered for Wheat to Cork for orders to Liverpool, Havre or Antwerp, £2 17s 6d; British iron bark *Sarah and Emma*, 1,097 tons, Cork, £3; ship *Emily F. Whitney*, 1,315, Cork, Havre or Antwerp, £2 18s, San Francisco loading. The chartered Wheat fleet in port has now a register of 59,163, or an export capacity of 88,744 short tons, or 1,774,880 ctls, against 40,691 tons at the same time in 1881. The disengaged tonnage in port has now a register of 17,488, or an export capacity of 26,233 short tons, or 524,640 ctls, against 2,419 tons at the same time last year. There is also a disengaged tonnage of 4,121 register at Wilmington. Tonnage now on the way to this port has a register of 217,367, against 249,860 at the same time in 1881, and 102,109 in 1880.

Eastern Grain and Provision Markets.

NEW YORK, April 10.—The ocean steamship lines are now carrying Wheat from this port to Liverpool and London for only three-fourths of a penny (1½ cents) per standard bushel, and yet are getting very little to carry. The steamships running from Boston to Liverpool have lately been carrying free, as ballast, what grain they could get, and this week a penny a bushel has been offered in Boston for 40,000 bushels of Wheat for that purpose. A member of a prominent firm in the Produce Exchange to-day said that the movement of Wheat from the West to the seaports had been so light that speculators had been able to put up most of the supply and hold it at prices at which it could not be placed in Europe. Speculators who are "long" of Wheat are hoping, it is stated, to hold it at high figures until the new crop begins to be available, and in the mean time to compel the "shorts" to come in and settle. It is reported, on good authority, that on Thursday a clique of speculators in this city sold out from 150,000 to 200,000 bushels of Wheat at 2c a bushel below the market price, in order to get the actual Wheat out of port, so that they might manipulate the options to better advantage.

BAGS.—Bids are a fraction higher, with sellers holding off. The market is firm all around. No sales on call. Bids and offers were: Calcutta Spot, $9.25 bid, $9.50 asked; buyer 5, $9.30 bid; July, $9.75 asked; "E. W.," spot, $9.37½ bid.

BARLEY—Feed Barley is more active and a little higher. White Chevalier and Brewing are quiet. Sales on call were 25 tons No. 1 Feed, spot, $1.53¾; 100 tons July, $1.21, and 100 tons No. 2 Feed, September, 95c. Bids and offers were: No. 1 Brewing, September, $1.15 bid; No. 2 do, August, $1.10 bid; September, $1 bid, $1.15 asked; No. 1 Dark Brewing, September, $1 bid, $1.05 asked; No. 1 Feed, April, $1.52½ bid; May, $1.45 bid; June, $1.42½ bid, $1.47½ asked; August, $1.07 bid, $1.00 asked; September, 97½c bid, $1.05 asked; No. 2 Feed, July, $1.15 bid, $1.17½ asked; seller 1882, 91c bid, 95c asked; No. 3 Chevalier, June and July, $1.10 bid; September or October, 85c bid, 99c asked.

BEANS—There is no change in values. Pea and Small White Beans are in good request.

CORN—There is nothing doing, and supplies are getting larger, owing to arrivals of Nebraska. The rate is about $1.55 to $1.60 for Yellow.

DAIRY PRODUCE—Butter is again improved, and has sold up to 28½c for fancy lots. Cheese is arriving more freely, and is rather dull and lower.

EGGS—Fancy fresh Eggs have sold as high as 21c, but 19@20c is the usual range.

FEED—Hay is now from $10 to $15. Bran is a shade better. Call sales of 20 tons spot, $13.50, showing a firmer market, and 200 tons August, $12.50. Bids and offers were: Seller 15, $13 bid, $13.50 asked; May and June, $12.50 bid, $13 asked; July, $12.50 bid, $13 asked; September, $12.50 bid, $12.75 asked; October, $12.75 bid, $14 asked; November, $13 bid; seller 1882, 11.75 bid, $12.50 asked; seller any month, 1882, $12.50 bid; buyer 1882, $14.65 bid.

FRUIT—Oranges and Limes are about as before. Lemons are lower.

FRESH MEAT—Beef is again up to 8@8½c for choice. Mutton and Pork are unchanged, and Lamb has run down because of the great numbers of poor Lambs now offering.

HOPS—There is a little better demand, but prices are as yet unchanged.

OATS—Oats are quiet and unchanged. No sales on call. Bids and offers were: Extra choice, April, $1.82½ bid; No. 1, July, $1.47½ bid; September, $1.35 bid, $1.50 asked; spot, $1.76½ bid, $1.80 asked; No. 2, September, $1.25 bid, $1.28 asked.

ONIONS—Onions are selling about as last week. There is still wide difference in quality and price.

POTATOES—New Potatoes have sold as high as 5½c ₱ lb. Old Potatoes are about the same as last week.

PROVISIONS—There is a good demand but rates are unchanged.

POULTRY AND GAME—Prices are much improved. Turkeys are few and no dressed Turkeys are now arriving. Fowls are worth from 50c to $1 ₱ dozen more than last week. Ducks have also advanced from $1 to $1.50 ₱ doz. Present prices will be found in our list.

VEGETABLES—Our list shows a decline in almost all fresh Vegetables. Asparagus rates are still held up by the sale of a few boxes of choice at fancy prices. The general average is lower. Good turnips are higher.

WHEAT—Wheat values are about the same. Call sales Tuesday of 250 tons No. 1 White, August, Port Costa or Benicia delivery, $1.55½; 250 tons No. 2 White, August, Port Costa delivery, $1.47½; and 250 tons No. 1 Sonora, August, Port Costa, $1.52½. Bids and offers were: Extra choice, July, $1.57½ bid; No. 1 White, spot, $1.60 asked; May, inspection waived, $1.65 asked; September, $1.55½ bid, $1.56¼ asked; No. 2 White, September, $1.47½ bid, $1.50 asked; No. 1 Amber, July, $1.55 asked. About 5,000 sacks went per steamer to Australia yesterday, and a ship is reported taken for Wheat to Adelaide, on account of a shortness in crops in Australia.

WOOL—Spring Wool is arriving more freely and rates are better than last week. Eastern buyers are already operating and the outlook for an active trade is goo Our list shows present rates.

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., April 12, 1882

FRUIT MARKET.		Pears, sliced	— @ — 9½
Apples, bx	1 00 @ 3 00	do whole	— @ — 8
Bananas, bunch	2 50 @ 4 00	Plums	— @ — 6
Cocoanuts, 100	6 00 @ 7 00	Pitted	— @ — 12½
Cranberries, bbl	12 50 @ 14 00	Prunes	— @ — 10
Limes, Mex	8 00 @ 10 00	Raisins, Cal, bx	— @ 2 50
do, Cal, box	2 00 @ 10 00	do, Halves	— @ 2 75
Lemons, Cal, bx	1 75 @ 2 50	do, Quarters	— @ 3 00
Sicily, box	6 50 @ 7 50	Eighths	— @ 3 25
Australian	— @ —	Zante Currants	8 @ 10
Oranges, Cal, bx	3 00 @ 4 50		
do, Tahiti M	— @ —	VEGETABLES.	
do, Mexican	15 00 @ 17 00	Artichokes, doz	— @ — 50
do, Loreto	— @ —	Asparagus, box	1 50 @ 2 00
Pears, bx	— @	Beets, ctl	— @ — 65
Pineapples, doz	8 00 @ 9 00	Cabbage, 100 lbs	— 75 @ 1 00
DRIED FRUIT.		Carrots, sk	— 65 @ — 75
Apples, sliced, lb	— 7 @ — 7½	Cauliflower, doz	— 50 @ — 60
do, evaporated	— 10 @ — 11	Garlic, lb	— @ — 1½
do, quartered	— @ — 7	Lettuce, doz	— 10 @ —
Apricots	15 @ 17	Mushrooms, box	— 75 @ 1 00
Blackberries	14 @ — 16	Okra, dry, lb	— @ 50
Citron	28 @ 30	Peas, green, lb	— 4 @ — 5
Dates	9 @ — 10	Parsnips, lb	— @ — 3
Figs, pressed	4 @ — 6	Rhubarb	2½ @ 4
do, loose	3½ @ — 5	Squash, Marrow	
Nectarines	14 @ — 15	fat, ton	18 00 @ 20 00
Peaches	11 @ — 11½	Tomatoes	— 10 @ 12½
do pared	14 @ — 18	Turnips, ctl	— 75 @ 1 00

Retail Groceries, Etc.

WEDNESDAY M. April 12, 1882

Butter, California		Rice	8 @ 10
Choice, lb	45 @ 55	Yeast Powdr, doz	1 50 @ 2 00
Cheese	17 @ 25	Can Oysters, doz	2 00 @ 3 00
Eastern	25 @ 30	Syrup, S & Gold'n	75 @ 1 10
Lard, Cal	— @ 18	Dried Apples, lb	10 @ 15
Eastern	20 @ 25	Ger Prunes	12½ @ 20
Flour, ex. fm, bbl	8 00 @ 9 00	Figs, Cal	9 @ 10
Corn Meal, lb	2½ @ 3	Peaches	15 @ 25
Sugar, wh crushd	12½ @ 13	Oils, Kerosene	50 @ 60
Light Brown	8 @ 9½	Wines, Old Port	3 50 @ 5 00
Coffee, Green	23 @ 35	French Claret	1 00 @ 2 50
Tea, Fine Black	50 @ 1 00	Cal. doz bot	2 00 @ 4 50
Finest Japan	55 @ 1 00	Whisky, O K, gal	3 50 @ 5 00
Candles, Adm'te	15 @ 25	French Brandy	4 00 @ 8 00
Soap, Cal	7 @ 10		

Gold, Legal Tenders, Exchange, Etc.

[Corrected Weekly by SUTRO & Co.]

SAN FRANCISCO, April 12, 3 P. M.

SILVER, ¼.

GOLD BARS, 890@910. SILVER BARS, 10@18 ₱ cent. discount.

EXCHANGE on New York, 5 premium; London, 49½@49¾; Paris, 5.20 francs ₱ dollar; Mexican dollars, 90@91.

NEW YORK (4 per cent), 11½.

Lumber.

WEDNESDAY M., April 12, 1882

Redwood. CARGOES.		Shingles	— @ 2 50
Rough	@18 00	Posts, each	— 15 @ 20
Surfaced	— @28 00	Pine. CARGOES.	
Floor and step	— — @27 50	Rough	— — @18 00
RETAIL.		Surfaced	22 00 @28 00
Merchantable	— — @22 50	RETAIL.	
Surfaced, No. 1	— — @35 00	Rough	— — @22 50
Tongue & Groove	— — @35 00	Flooring	32 50 @35 00
Pickets, rough	— — @20 00	Floor and step	— — @35 00
do, fancy	— — @27 50	Laths	— — @ 3 75
do, square	— — @17 50		

Domestic Produce.

WHOLESALE.

WEDNESDAY M., April 12, 1882.

BEANS & PEAS.	
Bayo, ctl	3 00 @3 25
Butter	3 75 @4 25
Castor	3 50 @4 00
Pea	4 45 @4 50
Red	2 50 @3 00
Pink	2 50 @3 00
Large White	3 00 @3 25
Small White	4 45 @4 50
Lima	— @6 00
Field Peas, b'lk eye	1 5 @1 75
do, green	2 00 @2 25
BROOM CORN.	
Southern	3 @ 3½
Northern	4 @ 6
CHICCORY.	
California	4 @ 4½
German	6½@ 7
DAIRY PRODUCE, ETC.	
BUTTER.	
Cal Fresh Roll, lb.	26 @ 27
do Fancy Brands.	27 @ 2[illegible]
Pickle Roll	— @ —
Firkin, new	26 @ 27
Eastern	18 @ 20
New York	— @ —
CHEESE.	
Cheese, Cal., lb	14 @ 15
EGGS.	
Cal. Fresh, doz	19½@ 20
Ducks	— @ —
Oregon	— @ —
Eastern, by expr'ss	— @ —
Pickled here	— @ —
Utah	— @ —
FEED.	
Bran, ton	12 50 @13 50
Corn Meal	36 00 @37 00
Hay	10 00 @15 00
Middlings	— — @18 00
Oil Cake Meal	— — @27 50
Straw, bale	— 62½@— 70
FLOUR.	
Extra, City Mills	5 25 @5 50
do, Co'ntry Mills	4 75 @5 00
do, Oregon	4 75 @5 12½
do, Walla Walla	4 50 @5 00
Superfine	3 50 @4 25
FRESH MEAT.	
Beef, 1st qual'y, lb	8 @ 8½
Second	5 @ 7
Third	4 @ 4½
Mutton	5 @ 6½
Spring Lamb	7½@ 10
Pork, undressed	5½@ 7
Dressed	8½@ 9½
Veal	7½@ 8
Milk Calves	7½@ 8
do, choice	— @ 10
GRAIN, ETC.	
Barley, feed, ctl	1 45 @1 55
do, Brewing	1 70 @1 75
Chevalier	1 60 @1 67½
Buckwheat	1 50 @1 75
Corn, White	— @ —
Yellow	1 50 @1 55
Small Round	— @ —
Oats	1 30 @1 67½
Milling	1 75 @1 8[illegible]
Rye	2 05 @2 15
Wheat, No. 1	— @1 62½
do, No. 2	1 57½@1 60
do, No. 3	1 45 @1 50
Choice Milling	— @1 65
HIDES.	
Hides, dry	18 @ 19
Wet salted	9½@ 11
HONEY, ETC.	
Beeswax, lb	23 @ 25
Honey in comb	14 @ 18
Extracted, light	9 @ 10
do, dark	7 @ 8
HOPS.	
Oregon	20 @ 21
California, new	22 @ 25
Wash. Ter	19 @ 20
Old Hops	— @ —
NUTS—Jobbing.	
Walnuts, Cal	10 @ 11
do, Chile	7½@ 8
Almonds, hd shl'd	8 @ 10
Soft shell	14 @ 15
Brazil	10 @ 11
Pecans	13 @ 15
Peanuts	6 @ 6½
Filberts	14 @ 15
ONIONS.	
Red	— @ —
Silverskin	40 @ 90
do, choice	1 00 @1 10
Oregon	— @ —
POTATOES.	
New, lb	4½@ 5½
Early Rose	1 90 @2 00
Petaluma, ctl	1 75 @2 00
Tomales	1 70 @1 85
Humboldt	1 85 @1 95
" Kidney	— @ —
" Peachblow	— @ —
Jersey Blue	— @ —
Cuffey Cove	— @ —
River, red	1 90 @2 00
Chile	1 50 @1 60
do, Oregon	— @ —
Oregon Peerless	1 65 @1 70
Sweet	1 00 @1 25
POULTRY & GAME.	
Hens, doz	6 50 @ 7 50
Roosters	6 00 @ 9 50
Broilers	6 00 @ 7 50
Ducks, tame, doz	7 00 @ 9 00
Mallard	2 00 @ 2 50
Sprig	1 50 @ 1 75
Teal	75 @ 90
Widgeon	1 00 @1 12½
Geese, pair	1 25 @1 75
do, young	2 50 @3 00
Wild Gray, doz	1 75 @2 00
White do	50 @1 00
Turkeys	16 @ 18
do, Dressed	— @ —
Turkey Feathers, tail and wing, lb.	10 @ 20
Snipe, Eng	2 00 @2 25
do, Common	50 @ 75
Quail, doz	75 @ 80
Rabbits	1 00 @1 25
Hare	1 50 @1 75
Venison	5 @ 7
PROVISIONS.	
Cal. Bacon, extra clear, lb	13½@ 14
Medium	13½@ 14
Light	14 @ 15
Lard	13 @ 16
Cal. Smoked Beef.	11½@ 12½
Shoulders	9½@ 10½
Hams, Cal	12 @ 13½
do, Eastern	15½@ 16½
SEEDS.	
Alfalfa	12 @ 13
do Chile	— @ —
Canary	3½@ 4
Clover. Red	14 @ 15
White	45 @ 50
Cotton	— @ 20
Flaxseed	2½@ 3½
Hemp	— @ 5
Italian Rye Grass	25 @ —
Perennial	25 @ —
Millet, German	10 @ 12
do, Common	7 @ 10
Mustard, White	1¾@ 2
Brown	2½@ 3
Rape	2½@ 2
Ky Blue Grass	20 @ 25¾
2d quality	16 @ 18
Sweet V Grass	— @ 75
Orchard	20 @ 25
Red Top	— @ 15¾
Hungarian	8 @ 10
Lawn	30 @ 40
Mesquit	10 @ 12
Timothy	9 @ 10
TALLOW.	
Crude, lb	6½@ 7
Refined	9½@ 10
WOOL, ETC.	
FALL—1881.	
San Joaquin	10 @ 13
do, Lamb	13 @ 15
Southern Fall	10 @ 12½
do lambs'	13 @ 14
Northern, free	16 @ 20
do, defective	14 @ 16
Mountain, free	16 @ 18
do, slightly seedy.	13 @ 15
Humboldt & Mendocino	20 @ 21
SPRING—1882.	
San Joaquin, free.	20 @ 21
do, fair	18 @ 19
do, dusty.	15 @ 17
Southern Coast	15 @ 18½
Stanislaus & Tuolumne	23 @ 25

Pacific Coast Weather for the Week.

[Furnished for publication in the PRESS by NELSON GEROM, Sergt. Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending 11:58 A.M. Wednesday, April 12th, at noon, for the stations named:

Date.	Olympia.	Portland.	Roseburg	Red Bluff	Sacram'to	San Francisco	Visalia.	Los Angeles.	San Diego
Thursday.	.00	.46	.12	.06	.02	.07	.10	.02	.—
Friday	.00	.00	.04	.00	.00	.00	.00	.00	.00
Saturday	.10	.30	.	.	.00	.—	.00	.00	.00
Sunday	.26	.10	.15	1.23	.52	.30	.12	.11	.00
Monday	.02	.00	.29	.02	.28	.41	.34	.42	.16
Tuesday	.—	.—	.00	.00	.02	.00	.00	.00	.00
Wed'sday.	.04	.00	.00	.00	.00	.00	.00	.00	.00
Totals	.42	.86	.60	1.31	.84	.78	.56	.55	0.16

Leather.

[WHOLESALE.]

WEDNESDAY, M., April 12, 1882.

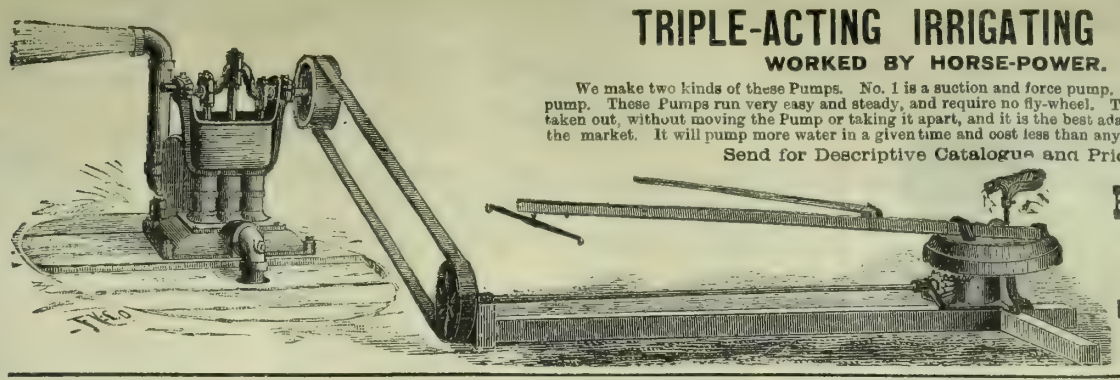
Sole Leather, heavy, lb	30 @ 32
Light	25 @ 28
Jodot, 9 to 10 Kil., doz	36 00 @46 00
11 to 13 Kil	50 00 @60 00
14 to 16 Kil	65 00 @72 00
Second Choice, 11 to 16 Kil	40 00 @65 00
Simon Ullmo, Females, 12 to 13 Kil	52 00 @56 00
14 to 15 Kil	60 00 @64 00
16 to 17 Kil	66 00 @68 00
Simon, 18 Kil	— — @57 00
20 Kil	— — @60 00
24 Kil	— — @65 00
Kips, French, lb	— 85 @ 1 20
Cal, doz	55 00 @60 00
French Sheep, all colors	12 00 @15 00
Eastern Calf for Backs, lb	1 00 @ 1 25
Sheep Roans for Topping, all colors, doz	9 00 @10 00
For linings	6 50 @10 00
Cal. Russet Sheep Linings	3 00 @ 5 50
Boot Legs, French Calf, pair	— — @ 4 50
Good French Calf	— — @ 4 00
Best Jodot Calf	4 75 @ 5 00
Leather, Harness, lb	35 @ 40
Fair Bridle, doz	45 00 @66 00
Skirting, lb	33 @ 37
Welt, doz	30 00 @36 00
Buff, ft	17 @ 20
Wax Side	19 @ 20

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., April 12, 1882.

Eng Standrd Wheat	8¾@ 9	45 inch	9¼@ 9½
Cal Manufacture		40 inch	8¼@ 8¾
Hand Sewed, 22x36	8¾@ 9	Wool Sks Hand Swd	
20x36	8½@ 8¾	3½ lb	— @47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	— @49½
Machine Swd 22x36	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10½	Bean Bags	6¾@ 7
Quarters	6 @ 6¾	Twine, Detrick's A	32½@35
Eighths	4½@ 4½	" " AA	35 @37
Hessian, 60 inch	— @12		



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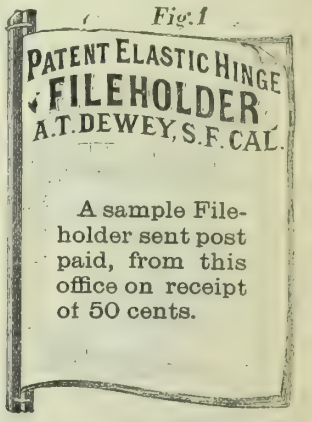

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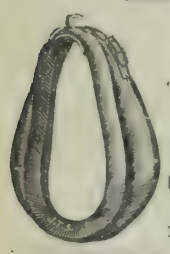

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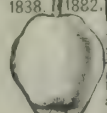

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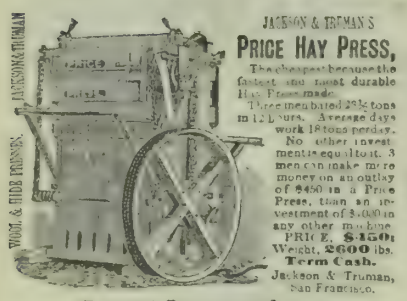

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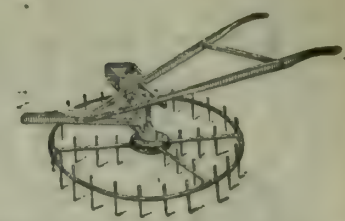

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These friction-bands are tightened by pressing the foot against a trip. The friction can be so graduated as to let the head drop back suddenly or slowly, or it can be held up while the Rake is moving forward.

Any one can understand that a Rake operated by *friction* where the dumping power is gradually applied, will last much longer than those where the teeth are raised by ratchets, gears or other contrivances, and where the force necessary to raise the head is brought to bear suddenly, which causes an enormous strain. In our Rake, this sudden strain is entirely avoided, making it much easier upon the horse as well as the Rake. They have 20 double-coil spring-steel teeth, tempered in oil. This double coil gives our rake-teeth an elasticity and strength which none others can approach, as has been demonstrated in the severest tests, such as raking cornstalks, bunching up and raking on rough ground. Each tooth is independent, and can be quickly replaced in case of breakage, which, with our teeth, rarely occurs. When raking, the teeth are held to the ground by the weight of the operator's foot on the lever, which is held in lock as the foot rests upon it, but is relieved immediately upon the foot being taken off. Whenever desired, it can be used as a hand lever Rake, and, as such, cannot be excelled. By simply taking out a bolt, the teeth can be raised or lowered to suit the raking, whether it be stubble-fields, corn-fields, or meadows.

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PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, APRIL 22, 1882. Number 16

Originating New Varieties of Potatoes.

The originating of new varieties of potatoes is a work requiring application and patience, but it has a great practical value. Not only has it the general value which pertains to the origination of new fruits and vegetables, but in the case of potatoes there is the additional prospect of chancing upon something which will possess blight-resisting powers and thus enable the grower to secure a good product where the old varieties succumb at the attack of the disease. This has been the experience of many, both in this country and in England; in fact, in England they have new varieties, like the Champion, which have proved a great blessing and have been the safeguard against a recurrence of the disastrous potato famine of the last generation. In this country the best of new and valuable potatoes produced from seed is very large and the growers have made their names household words.

The opportunity for this kind of horticultural work is still open and should claim the attention of California potato growers who have taste and time for experiments. Our State has already made a record in this respect, but there is still need for new varieties. We have thought that some of our readers might be interested in experimenting with this year's seedling of their vines to secure seed for later planting.

It is usual in colder countries to save the seed from one year for planting the following spring. We can work much faster in some parts of this State, for there are localities where the long frostless season will enable one to plant ripened seed and gather the seedling tubers before the winter approaches. In this matter the experimenter must be governed by the conditions which surround him. In order to give a few hints as to the method of proceeding with potato seed, we take some points from an essay on the subject lately read before an English farmers' club. The writer describes the way he conducts his experiments: As to the mode of collecting the seeds, he is not in favor of gathering either the very early or very late seed balls, and would only select such as are well matured at date of collecting. Having gathered the balls, dry them well, and remove the seeds, being careful to store in a dry, airy place. About the end of March take a small box and put about two inches of dry moss into the bottom to carry off excessive moisture, and fill up with a mixture of rotted turf mold, very fine sand, and leaf mold in about equal parts, well mixed and sifted. Sow the seeds on the surface, and cover thinly with fine mold. A little bottom heat will be required until the seeds are well germinated, after which the box should be kept as near to the glass as possible. The seedlings should be thinned early, and may be planted out during the first or second week of June.

Only those that seem better than ordinary should be entered in the register the first year. I shall here transcribe a few notes of the results obtained by myself. One plant yielded 109 tubers, which weighed one and one-half lbs.; another with 84, turned the scale at 30 oz. Several of the others produced from 60 to 80 tubers each, one plant yielding the astonishing weight in tubers, roots and foliage of 8½ lbs.

The second year's crop was planted in rows of 15 ft. in length and 25 inches in breadth, with 14 plants in each row. At this period of their growth they require much attention. It then becomes necessary to have them all numbered and entered in the potato book, with the number of the row in which they are growing, and it will be well to reserve a large space for remarks, to be filled in as they grow up, such as the date of their appearance above the soil, whether robust or weakly, anything about their habits or character, color of flower, general form, size, color of leaf, etc. At date of digging, all the good tubers should be counted and weighed and put up in separate parcels, with the book number attached. From every plant of only an ordinary character, one of the best-formed tubers should be selected, and the collection stored and marked as mixed. The potatoes of the third year are treated in a similar manner. Those previously selected as good still retain the various numbers under which they were first classified, and four, six, eight of these may be planted this year, just as they are fair, good or very superior. He is not particular at this or any stage as to the size of tuber he plants; but attaches great importance to the form, and very often avoids the larger sizes as not being so shapely as the smaller. It is a great recommendation to any variety that it turns out true to form.

PACIFIC COAST BLOOD HORSE ASSOCIATION.—The spring meeting of the Pacific Coast Blood Horse Association will be held April 25th, 27th and 29th, at the Bay District course. Thirteen races will be given at various distances. All the most noted horses in the State will contend, and the stakes for young horses have a large number of entries. The interest in the spring and fall meetings of the association greatly increases, and the membership is being extended rapidly. It is the hope of the officers and members, that eventually it may occupy a position on this coast similar to that of the American Jockey Club or Saratoga Association at the East. The organization is not for the purpose of profit, but for the improvement of the breeding of the thoroughbred horse and the promotion of the time-honored sports of the turf. It numbers among its members some of the most prominent men in the State.

VANDERBILT is to erect a family mausoleum on Staten island to cost $200,000.

The Kennel Surprised.

We take the chance to slip in this week an engraving especially for our little readers, who cannot yet comprehend the beauty of scenery or the value of new industrial devices. They cannot fail to be pleased with the apparent surprise of the cunning little dogs at the approach of such a queer visitor to the kennel. They have seen different kinds of things during their short lives. They have barked and scampered at the coming of tramps. They have become accustomed to the great bodies of cows and horses which have passed their cosy abode; but this queer thing, moving so slowly and making no noise, what can it be? We hope the little dogs will conclude to bark and run into their house, for this turtle looks to us like one of the snapping kind, and if he should get one of the little paws in his mouth, he would hurt the little dog terribly. However, little dogs are usually fortunate little animals, and perhaps John will come along and cut off the turtle's head for stealing his goslings.

THE PUPPIES' PUZZLE.

THE shipment of fresh Truckee river trout from Wadsworth thus far this season, amounts to 140,500 lbs.

A. T. STEWART & CO., of New York, have determined to close out their business.

The Butter Outlet.

It has been a hard winter on the dairy herds, because of the backwardness of the pastures, and the continuance of cold storms. Our Humboldt county correspondent pictures this condition quite vividly in his letter in another column of this issue. The same condition has prevailed, though to a much less degree, in the dairy regions farther south, and production has been restricted.

The season is, however, quite promising, so far as the market is concerned. Butter is going out of the city for consumption in distant parts in much greater amount than usual. The shipments overland have had some effect on the price and there is much being shipped southeast into the new regions of Arizona and beyond. It may be expected that the farther development of these countries will still relieve our market, and thus open the way to greater production.

The northern dairy counties are also enjoying a brisk trade with the southern portion of the State and the wheat districts of the interior. This cannot be expected to long continue, because local production in those parts will increase. Take, for example, the city of Los Angeles. According to the *Times*, of that city, it is estimated that the butter imported into the city from the north during the past four months has amounted to 11,000 lbs. per week, or 198,000 lbs. since Dec. 1, 1881. They give as an average price 33 cents per pound, amounting in the aggregate to $65,340.00. This is but for choice roll butter, and does not include firkin butter or roll butter in pickle, of which large amounts are being received. These imports of northern butter cannot be expected to continue, for Los Angeles county has rich dairy resources and they are being rapidly developed. It will not be long before Los Angeles and San Bernardino counties will produce most if not all the butter required in Arizona and other parts to the southeast. But the southern trade is helping San Francisco prices considerably this year, and it is to be hoped that other outlets can be found in the future.

Stock Premiums at the State Fair.

At a meeting of the State Board of Agriculture, held in Sacramento on Monday, several new features were introduced in the live stock awards for the coming fair. A special plate premium is to be given for the best four-in-hand team exhibited in harness. A class was added for standard trotters—such horses as are exempt from being shown in the roadster class. Cattle are classed as follows: Durhams, Alderneys, Jerseys, Guernseys, Devons, Ayrshires, Herefords, Holsteins and Holderness. In the herd premiums a separate one was offered for each breed distinct, except as to the Holsteins, Herefords and Holderness. The sweepstakes in this department was increased to $100. A special premium of $10 will be offered for the best milch cows; also, $10 each for the fattest steer and cow. In the cattle department the age of maturity was placed at three years. Four classes were made in the sheep department—Spanish Merino, French Merino, Cotswold Southdown and cross between thoroughbreds. In the goat class, premiums were reduced one-half. In the swine department, premiums were reduced one-third. Additional premiums were offered for the Duroc or Jersey red class. In all the foregoing classes of live stock a second premium of 50% of the first is offered, excepting herds, sweepstakes and graded stock. The premium on poultry was made to read "pair" instead of trio.

In the implement classes there were also some changes. The premium for the best display of California-made machinery was increased from $30 to $50, and for the best-combined header and thrasher, increased from $50 to $100.

IN the first twelve days of April the earnings of the Union Pacific railroad increased $281,000.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—Eds

Mount Diablo Valley.

EDITORS PRESS:—The little village of Clayton lies snugly nestled at the foot of Mount Diablo, Contra Costa county, on its northern side, and at the head of Mount Diablo valley. This valley extends from the town of Pacheco, in a southeasterly direction, to the foot of the mountain, a distance of some eight or nine miles. It varies in width from half a mile to some three or four miles, being broadest towards the lower part, and narrowing as it approaches the mountain. It presents the appearance of a nearly level plain, bounded on either side by ranges of hills; but there is sufficient slope for the water to run off freely. Mount Diablo creek, fed by several mountain streams, runs through it during the rainy season, continuing sometimes until July or August, though it generally ceases to flow in the month of June. The scenery is beautiful and picturesque. Standing at the head of the valley, with the mountain, nearly 4,000 ft. high, in the background, with ranges of hills on either side covered with verdure, and many of them cultivated in grain nearly to their tops, you look down across the valley, covered with grain fields and dotted with farm houses, orchards, vineyards, and scattering oaks, to the straits of Carquinez. Over these waters are passing steamers and sailing craft, laden with the products of the San Joaquin and Sacramento valleys to San Francisco, Benicia and Port Costa, or with return freights of merchandise, agricultural or mining implements to supply the wants of the people residing in those valleys. Across the straits may be seen the military barracks and U. S. arsenal, and portions of Benicia. Still beyond, in Napa county, may be seen the blue and purple crest of Mt. St. Helena, which sometimes in the month of February and March is made more prominent by its mantle of snow glistening in the sunlight, and warning the husbandmen and fruit growers of the dangers of frost to their crops. The Coast range of mountains in the distance presents a barrier to this charming view, which, for beauty, variety and picturesqueness, is rarely surpassed.

The soil of this valley is much like that of Santa Clara or San Jose valley, consisting mostly of a gravelly loam mixed more or less with adobe. It produces fair crops of grain, is good for fruit, and in most places well adapted to the cultivation of the vine. This is demonstrated beyond a doubt by several vineyards which have been bearing for a series of years past. Notably among them are the vineyards of Messrs. Morsehead, Kohler, Martini, and Kirkwood. There are numerous other small vineyards that have proved a success in growing the grape to perfection. Indeed, almost every farmer has a small orchard and vineyard for family use.

The people of this section have caught the fever of vine planting, and are setting out new vineyards and extending their old ones. The Zinfandel is the variety mostly planted, but some are setting out the Muscat and Flaming Tokay. Wine making is carried on quite extensively; principally by three persons—Mr. Kohler, Mr. Morsehead and Mr. Martini. It is said to be of excellent quality, equal to that from any part of the State.

There is considerable land around or near the base of the mountain, of a reddish loam, containing more or less mineral matter, well suited to the grape. The climate is warm and dry, and well adapted to the culture of the vine, the peach, plum, apricot, cherries, figs and pears. Apples do tolerably well, but not so well as in cooler localities. The temperature in summer generally ranges from 70° to 80°, and sometimes, when the north wind prevails, there will be a hot spell of three or four days, when the mercury will rise to 95° and 100°. For health, I know of no better climate in the State, being free from fogs and dampness, with no malaria, no mosquitoes, and no visible cause of disease of any kind. The sea breezes have the chill all taken from them as they come gently floating over the land, and are just cool enough to be refreshing and to temper the heat, which otherwise, in summer, would be oppressive.

The price of valley land ranges from about $30 to $100 per acre. Hill land ranges from $5 to about $20 per acre. Clayton, at the head of the valley, has a good school and school-house, a Congregational church, two hotels, one large store, post office, blacksmith and shoe shop, and the usual number of saloons that are found in country places. I was informed that they were generally closed on Sunday, in obedience to law, which among law-abiding people will be set down to the credit of the place.

Concord is a thriving village in the lower part of the valley, about a mile and a quarter from Pacheco. Adjoining the town is the old residence of Don Salvio Pacheco, now deceased. He was the grantee of the Mt. Diablo rancho, covering the entire valley of that name. Concord contains a Catholic church, a fine park, a good school, kept by Mr. McCarthy, two or three stores and hotels, a blacksmith shop and rather more than its share of saloons. A new and spirited little paper has been recently started here, the Concord *Sun*, by Mr. Farjeon, which is highly spoken of by its patrons, and bids fair to prove a success. Its enterprise in obtaining all the local news of interest is phenomenal.

There are many other facts of interest in regard to this pleasant valley that might be mentioned, but the length of this article admonishes me to defer them to another time. Crops are looking well here. C. E. W.

April 3, 1882.

A Steam Spader.

EDITORS PRESS:—An article in the last PRESS headed "Steam Cultivating Machinery," recalls to my mind a partial invention of mine of some 30 years ago. Steam plowing was then occupying some share of the agricultural mind, and the idea occurred to my mind that our great want was something quite different from a plow; something more of the nature of the spade, so as to make our entire farms as productive as our spaded-up gardens. Something that would *cultivate* more than plows will do. My invention consisted of a large cylinder, upon the outer surface of which were attached a series of tines or narrow spades, which were moved in a certain manner by machinery within the cylinder as the cylinder revolved, comminuting and cultivating the earth—if all worked lovely—equal to a seed bed in a well-tended garden. I sent my idea—as far as I had gone with it—to the *Prairie Farmer*, and the editor, apparently appreciating the idea, advised me to go on with it and perfect it. But I stuck right there and have never been able to proceed any farther. The idea, however, still remains in my head, that it is a spader and not a plow that is to be the coming cultivator of the farmer. The weight of the machine will be the force to insert the spades in the ground; the dirt will be thrown back, and partly to one side, by the revolution of the cylinder, and less power will be required to perform the same amount of cultivation, than with the plow; the ground will not be left in the hardened condition that it now is beneath the heel of the plow; the work will be more thoroughly done. The tines or spades can be made to go deep or shallow, the cylinder can be made to revolve with more or less speed, to suit the character of the soil. The work can be done slowly and thoroughly, for high cultivation, or speedily and with less care for large areas. Now attach to this cylinder, in an economical manner, a steam engine, and, it seems to me, the farmers are done for. The whole thing can be made small and light, say three or four horse-power; the expense need be but small, until time shall prove the utility of the implement, when the size can be increased, if found advisable. S. P. SNOW.

Santa Barbara, Cal.

Notes on Farm Economy.

EDITORS PRESS:—I wonder if it would be presumptuous in an old Yankee farmer to say a few words to those who are pursuing that line of business in this grand young State. Leisurely from the banks of the Hudson river, I made my way westward until the Pacific stopped me. I lingered awhile in Ohio, some years in Illinois, more years in Missouri and Kansas, but it was reserved for me to find here a set of hard-working, deserving men recklessly throwing away dollars that many of them had dared the overland trip, with carts and oxen, to win. Here I first saw the fire set to straw piles, while all around the out-buildings was plenty of mold and manure for it to be tramped into and mulched until it was ready to be put upon the land? I have been filled with wonder that it should be so, for many of your farmers have tilled the Eastern hills, and know that the great care of that land is to save the manure. The farmers of the rich Mississippi valley have learned the lesson, and certainly it must, sooner or later, be learned here. Learn it now, ye men who win from Nature her choicest gifts. Keep these lands of yours vigorous and strong. Already your wheat, barley and fruits are welcomed in every part of the world, and you must not let the supply fall off.

Your glorious heritage of climate and soil enables you to throw down the gauge of honorable contest with your Eastern brothers on this line, and, of course, you need every adjunct to win To do it, three things are necessary: First, save the manure; second, save the manure now; third, save all the manure all the time, and every year return to your generous soil all that you can to help it, and you will have a vein of wealth that will outrival the boasted veins of gold, and the specters of deteriorating soil and cent per cent interest will be laid low, for where one blade of grass or one spear of grain now grows you will have fifty, yea, an hundred fold more, and praise to him who makes two grow where one grew before.

Los Gatos, Cal. YANKEE.

A NEW FRICTION match has a quantity of explosive compound sufficient to protrude slightly beyond the end of the splint placed in a cavity in the end of the splint. The end of the match is then dipped in paraffine or other suitable material.

HORTICULTURE.

Pickling Olives and Olive Oil.

Ellwood Cooper completes his series of articles on the olive in the last issue of the Santa Barbara *Press*, and we present the following leading portions:

Pickling Olives.

There are different methods of preparing the fruit for pickles. The one adopted in this locality is as follows: The berries are put in fresh water, which should be changed every day for 40 or 50 days, then put in salt brine not very strong, and after remaining a few days drawn off, a second brine substituted, made nearly strong enough to bear an egg. The water should be boiled. Keep the olives well covered with the brine. Great care should be taken in handling the berries so as not to bruise them. The easiest plan when picking from the tree is to drop them in water. They are usually picked when they begin to turn a purplish color.

Another method copied from the PACIFIC RURAL PRESS: "Pick the olives as soon as they begin to show a reddish cast and rinse them in clean water. Then take an ounce of concentrated lye, and dissolve it in water. One third of this solution put in water enough to cover one gallon of olives. After a day or two pour off this water and add another lye of the same strength. This may be repeated once more, as five or six days are consumed in taking out the bitterness with the lye. The lye should be used until the fruit suits the taste. Then the olives are put in pure fresh water until the alkali is well removed. This can be ascertained by the color of the water and by the taste. In salting, use the best Liverpool "coarse-fine" salt, the amount being about 10 pounds to the barrel of olives, water enough being used to cover the fruit. Barrel up tight and keep in a cool place. All the process should be conducted in the dark, as the light is apt to injure the color."

Still another method, which I have copied from the work of Prof. A. Coutance, and translate as follows: "Take green olives and after having bruised or broken them slightly, soak in water for nine days, changing the water each day. At the end of this time they will have lost their bitter taste and can then be put in brine. Hot water acts more rapidly."

"The celebrated olives pickled after the manner of Picholini, are put under a treatment of lye made more alkaline by the addition of quicklime. After leaving the olives a certain length of time until the pulp separates easily from the seeds—a condition which depends upon the strength of the lye and the size of the olives—they are then washed and put in strong brine." "In the south, they flavor with fennel and coriander, sometimes they substitute in place of the seed a small piece of anchovy and a caper. In the latter case the olives should be in oil."

Detecting Adulteration in Olive Oil.

I have copied from a paper read before the Liverpool Chemists' Association by Michael Conroy, F. C. S., as follows: The test is applied in this way: "Mix thoroughly 1 part of strong nitric acid (sp. gr. 1.42) with 9 parts of the oil to be tested, and pour the mixture into a white porcelain dish capable of holding at least ten times the quantity. Apply heat gently, until the action between the acid and the oil is fairly set up, then remove the source of heat and stir well with a glass rod until the action is over.

"Pure olive oil thus treated and allowed to cool sets into a pale straw-colored hard mass in an hour or two, while cotton seed and other seed oils assume a deep orange red color, and not set like olive oil.

"In hot weather it is necessary to artificially cool the sample, so as to promote the setting; but to a practised eye the setting is quite unnecessary, the color being sufficiently distinct without.

"It will be seen that the delicacy of this test depends upon the great contrast in color exhibited between genuine olive and seed oils, when operated on as described, so that an admixture of 5% of any seed oil with olive oil is readily detected. Another important feature in this, and possessed by no other test, is the accuracy with which the approximate amount of admixture may be ascertained; and to practically show this feature, I have on the table a sample of genuine olive oil and one of cotton seed, and seven other samples, containing respectively 5%, 10%, 15%, 20%, 30%, 40% and 50% of cottonseed oil, which have been treated by this method, and I venture to say that not one will experience any difficulty in picking out the various samples, the gradation in color being so uniform, and I may also add that it is constant. It therefore follows, that if an oil be found to set of a different color to that of a sample of genuine olive, the approximate amount of adulteration can be found by making and operating on a few mixtures containing a known percentage of the adulterant. A little experience in working the test will wonderfully assist in determining the percentage of admixture in any sample, but in all cases I would recommend that the test be performed in conjunction with a sample of genuine olive. The quantities which I have been in the habit of using are: One-half a fluid dram of nitric acid and nine and one-half fluid drams of oil; and having used the test for about three years, I can confidently recommend it as thoroughly reliable and constant when carefully carried out. The heat should be removed as soon as the action has fairly started, and the mixture should be kept well stirred until the action is over. Should too much heat be applied, the action becomes violent and unmanageable, and some of the mixture will spurt out of the dish. This spurting, however, may be prevented by placing a plate or other flat body over the dish. The results obtained are never as good when the action is so violent as to cause spurting."

There putation of the author of the above is sufficient to recommend the certainty of the test—but as all consumers have not the material, or apparatus at hand, they can satisfy themselves of the large percentage of adulteration contained in at least one of the most popular brands imported from Europe by a much simpler method.

Take one bottle of Luca oil, put up by Cross & Blackwell, of London, and one bottle of my oil, put both in an ice freezer where the temperature is as low as 35° to 40° Fahr., and leave them over night. An inspection in the morning will satisfy anyone who may now have doubts as to the adulteration of the former.

The adulteration of the Barton & Guestier oil cannot be exposed by this test but your druggist can expose it for you, by the "Conroy" method. I only mention these two brands for the reason that they command the highest price and are the favored importations. While I was engaged in the shipping business in the city of New York, our firm had one telegraph order for 1,000 tierces of hog's lard to go to the Mediterranean to adulterate olive oil.

One year's exports of cotton-seed oil from New Orleans to the Mediterranean was sufficient in quantity to fill 15,000,000 ordinary oil bottles, the cost of the oil in each bottle being less than 10 cents. So long as our people are willing to pay $1 for what is not worth anything, and which costs less than 10 cents, so long will hog's lard and cotton seed, under false labels, be consumed by them as olive oil. As to the effect on the human body of a liberal use of these admixtures, I refer to my previous article, or to the writings on the subject by every intelligent author since the commencement of time.

Notes on Vine and Tree Planting.

EDITORS PRESS:—I have often smiled at essays on practical agriculture, fruit tree and vine planting, and have wished for time and opportunity to show up their fallacies and inexperience. I saw so many incorrect ideas on cuttings and their growth in your correspondence, that I make it my excuse for sending you this article.

Long and Short Cuttings.

Your correspondence seems to ignore the fact that a buried cutting assumes all the functions of a root, and is very different from a seed germ which starts a root first or at the same time. On cuttings, under all circumstances, the leaf first comes out and then, as evaporation proceeds, a want is felt, a thirst which induces little rootlets to reach out in search of moisture. With one bud above the surface, and other conditions being similar, the longer the cutting the more sure of success. There is probably no land, however deep and uniform the soil, where it would be advisable to plant long cuttings perpendicularly; the angle or slant should always depend on the depth of clayey subsoil, which the end should not touch, but the clay may be dug out and surface soil thrown in, when the end may be placed deeper.

There cannot be such a thing as half-dead wood between sets of rootlets, for the cutting itself is now a root, and under favorable conditions rootlets will branch out from every joint below the surface. I have laid long cuttings with large pieces of old wood attached in poor, dry soil and obtained a large, vigorous vine in two years. So much for the misleading points in your able correspondence.

It is now admitted that there is no entire cessation of growth in winter. The never-ending activity of all matter is proof that there must be growth and increase, or change and decay. It will thus be seen how necessary it is to keep some moist electrical conductor in contact with the end of the cutting and roots.

Sunburnt Trees and Whitewash.

Although very few insects have yet appeared in Lake county, yet many orchards are dying from sunburn, which is effected from 3 to 5 o'clock in September and October, when the least amount of sap is in circulation. A radical change in the pruning of all kinds of trees must be adopted. But all whose trees are already trimmed too high may protect them somewhat with whitewash. I whitewashed one of two trees equally exposed, and the difference in feeling to the hand was remarkable.

C. P. SCRANTON.

Lower Lake, Lake county, April 10th.

SCISSORS.—A new method of manufacturing scissors or shears consists in casting the handles of iron, and rendering them malleable; preparing the steel blades in the usual manner; welding the steel blades to the malleable iron handles by hammers or dies acting upon the parts that are welded together; and subjecting each handle and blade when cold, to a powerful pressure between dies that act upon the malleable portion to consolidate the metal, smooth the surface, and remove any imperfections in the shape.

Sheep and Wool.

California and Foreign Merinos Compared.

Editors Press:—In perusing the subject of Merino sheep, the art of breeding and wool growing, we desire to notice our home flocks and discuss their value and peculiar merits, as compared with the most cherished and profitable sheep in other sections of our country, as well as those of the same family produced in foreign countries.

In preceding letters much was said in praise of Vermont sheep, and reference made to some of the causes of their extended fame and exalted excellence; but not more than they deserve. In all that was said we were not unmindful of the truth, nor the flattering discovery sure to be made in tracing the lineal lines of California's famous thoroughbred flocks to royal ancestry.

Nearly every noted Merino flock in this State descended from imported Vermont stock, and in many instances this stock was a selection from their very best. Notwithstanding this our very choicest flocks are not as famous as their merits deserve, nor as well appreciated by the majority of wool growers to-day as they will be in years to come. We feel confident of this, from the fact that our California thoroughbred possesses valuable inherent qualities, not enjoyed by the sheep of New England, Europe or Australia. Ours rank superior to the Australian stud flocks, for the improvement of inferior grades and the light coarse-wool families of sheep, for the very essential reason that they have more constitution, more size of bone and carcass, and a better form; that while they produce a less fine, long, even fleece, they produce double the quantity from a given number of sheep, of a stronger and very desirable grade of wool. Australian wool is noted as Merino wool of the finest texture, but it lacks strength as compared with the Merino wools of this country. The average stock ram, from their best flocks, two years old, weighs 130 lbs, is very leggy, with a long slim body, has a long goose neck, a long head and a pointed effeminate nose. He produces an average fleece of 9 lbs. per annum. An animal the same age from our stud flocks weighs from 160 lbs. to 180 lbs., is low on his legs, has a wide, heavy chest, short, thick neck, a round head with bull-dog nose. The average weight of fleece, one year's growth, is 25 lbs. Here the critic and persons of very limited experience may assert that the excess in weight of fleece claimed for our sheep is owing to the excess of grease or yolk in the wool. To a certain degree this is true, which is one reason why our rams are so much more valuable in grading up dry coarse-wool bands to a desirable standard of quality and quantity. But beyond this the fleece will cleanse from one-third to one-half more wool ready for the loom. This shows, conclusively, that our sheep grow a much denser fleece and more wool, that they are more perfect and intense in degree of quality, and possess more points most desirable to reproduce in wool bands, hence are more valuable to the wool growers of this country.

The Negretto Merinos, raised in Germany, are well-formed sheep, faultless in extent of covering, and in many respects very superior; but their faults and objectionable qualities are such as to render them inferior, and place them beyond the pale of competition with the best or average American Merinos. They are small and grow a staple of wool scarcely two inches in length; these two positive features they possess in such a uniform degree as to condemn them for use in producing the combinations in improvement which yield the most money from the wool sack. As compared with our Merinos, they are small, ours large; they grow a two-inch staple, ours a three-inch staple; they are inclined to be wrinkly, ours are not inclined to excess of wrinkles—California bred. They are well covered and grow a heavy fleece; ours are equally well covered and grow a heavier fleece.

The modern French Merinos, of Europe, are well formed and good size, but carry a very thin, light, harsh, inferior fleece, devoid of all the luster and beauty peculiar to all Spanish-American Merino wools. They are in every respect inferior to our Merinos, except in mutton qualities.

In again referring to Vermont Merinos it will be in order to point out some of their most objectionable characteristics, such as might, in a moderate degree, be termed faults, when compared with their natural descendants, constituting such of our best flocks as are bred with a careful record of pedigree from year to year. Beyond this we shall claim nothing, as nothing produced by promiscuous breeding can be relied upon to reproduce itself again.

The true Vermont Merino of to-day, as a rule, is too small and far too wrinkly as a perfect model to reproduce in the large flocks on this coast. They are extremely low on their legs and carry a large amount of yolk in their fleece; these extremes (and all intense qualities not desirable to produce in a line of descendants, and especially in the wool producing flocks) require to be handled first by experienced breeders, who can modify and utilize extremes in molding more rapidly such quality as is best calculated to promote improvement, without the introduction of faults and features requiring years to weed out.

Our best flocks of thoroughbreds of to-day, in this comparison, present a gratifying picture of success. Vermont breeders have been too remote from the great wool-growing sections of our country to fully understand all the ins and outs of the business, entirely disconnected with any interest beyond or outside the wool sack and the money its contents would bring. California thoroughbred breeders coming between the two have been highly favored, and taking full advantage of the situation have produced a sheep the superior of which does not mark the earth to-day in any part of the world. From a small wrinkly sheep, with medium length of staple, by judicious selections and crossing, we have produced the large, smooth carcass, faultlessly covered animal, with a three-inch staple of fine, bright, white, strong, salable wool. As a result California grade sheep are much superior to all the grades that have been raised in Mexico, Arizona, Nevada, Wyoming and other sections remote from thoroughbreds. Our State has grade flocks that cut as high as 10 lbs. and 12 lbs. per head per annum, as the result of judicious and continuous introduction of strong blood.

The thoroughbred sheep of this coast deserve a more extended notice than we feel at liberty to give them at this time, but shall refer to them again in connection with the importance of the science of breeding and feeding.

E. W. Peet.

Haywards, Cal., April 16, 1882.

The Dairy.

Beet Growing in Humboldt County.

Editors Press:—I thought I would again drop you a few lines from this far-off region. I think, when I wrote last, I mentioned stock in excellent condition, grass growing, weather mild, with every prospect of having a very mild winter. But, alas! how little do we know of the future, or what a day may bring forth. It has been the severest winter, to the best of my recollection, that I have seen in California in a period of over 30 years; that is, there has been a continuation of storms, one after the other, all through the winter. I have seen more rain and snow fall at one time, so that we have had higher water, but, as stated above, it has been one continuation of rain, snow, hail, sleet and frost—in fact, all kinds of weather—from October until March. The March storm was the severest of the season. I have heard Eastern men say that they never saw it snow thicker and faster away down in Maine. It is said that on some of the high ranges the snow was from two to ten ft. deep. In our Bear River and Mattole country snow ranged from two inches to two ft. deep on the low ranges. It all disappeared by noon next day, and had it not been for our early warm rain in the fall, there would have been few cattle or sheep left to tell the tale in Humboldt county. After the last storm in March, we had several days of cold, north wind, which dried up the ground considerably and prevented the grass from growing much. But, after all, there is very little mortality among sheep or cattle, as far as I can ascertain. In many places, stock is very low in flesh, and a great many lambs have died. Fortunately, my cattle range lies low, and the snow soon melted off, so that my stock is in fine condition, thanks to the Giver of the early and latter rain. At this present time, we are having a very nice warm rain, that will insure us a good crop of grass in the stock country and of cereals in the farming region. Every farmer is busy almost night and day with every available kind of team getting in crops.

The outlook for the county in all its phases of industry is very flattering; and if we all do not get rich, every industrious man, aye, woman, is sure of food and clothing, and having these things, let us therewith be content.

Beets.

But what I was more particularly going to talk about when I began this article was beets. One of your correspondents appears to think there is nothing like beets—I was going to say, for man and beast, but more particularly for the brute creation. I think if Mr. Damon lived in Humboldt county and counted the cost of raising and feeding beets, he would not be such an advocate for their culture. Although we can raise from 50 to 100 tons to the acre, according to the labor put on, we have to go over the beet patch a great many times, with labor at from $25 to $35 a month. Our ground is exceedingly weedy, and if not kept down with the cultivator, hoe and hands, we cannot get any crop of beets worth pulling. Then, that is not the worst of it. When our beets are ready to use, the early rains have set in and started our grass; and notwithstanding the sugary, crisp food that Mr. Damon speaks of, grass and beets are the very poorest kind of food. Either of them, with good hay, is splendid; that is, if the beets do not cost too much. As for such "common" cows as Mr. Downs'—cows that will furnish the milk and butter that his cow does—I would call a tolerably good cow, and the butcher that would slaughter such a cow ought to be prosecuted, not for murder in the first degree, but for something like cruelty to animals and a want of benevolence to his fellow-beings. I do not at all question Mr. D.'s truth and veracity in his statement of the quantity of milk and butter that his cow gives, but I would just like to own a couple of hundred of such cows.

As for hog feed, beets are hardly worth anything without something else. Perhaps if they were boiled with bran or shorts hogs might do very well on them; but then bran or shorts are very good hog feed without beets.

I have tried beets several years, and I cannot make them pay. Last year I put in about four acres, and four or five of us spent all the time we could on them between milkings, but the weeds got ahead of us, so that I did not get a quarter of a crop. Then, with the cost of pulling, hauling, cutting up and feeding, I did not realize anything out of my last crop. Then, to help the matter, our early warm rain started our grass, and we did not need them. Besides, I lost the use of my land, which would have yielded me not less than four tons of hay to the acre, so that I, for one, am perfectly disgusted with a beet crop.

In conclusion, I will simply state that land in Humboldt county that will only produce two tons of hay to the acre is not fit for a beet crop, however it may be in Napa. If I know anything about it, beets need very rich land; the richer the better. If I had to raise beets for cow feed I would quit dairying and go at something else, particularly If I had to feed beets for five or six months, as Mr. Ashburner does. He must have a different process of cultivation to what we know anything about here. Our's is emphatically a dairy county, but we will have to feed on some other kind of feed or food than beets to make it profitable.

Richard Johnston.

Bear River, Humboldt Co., Cal.

Agricultural Engineer.

Results of the State Engineer's Irrigation Surveys.

W. Hammond Hall, State Engineer, addressed a letter to Governor Perkins concerning the publication of the results attained by the irrigation surveys in the southern counties and the San Joaquin valley. He states that no appropriation was made for making public the results before the final report was prepared, and asks whether it would be right to allow parties to copy his records and maps for the use of the people of the counties most interested. He writes:

From the very commencement of this work applications have been received for special information to be furnished to persons interested in different localities. A survey could sometimes not be completed before an application would be made for a copy of the notes and maps of its results. It seemed quite clear to me that the satisfaction of such demands was not the object contemplated by the law under which the State Engineer was called upon to act.

I have regarded the data collected as the property of the State, for its purposes as hereinbefore indicated. I have believed that it was my duty to embody the substance of the results into a final report to the Legislature, which report could be published with maps, etc., and be sold, as were the reports of the State Geological Survey, to reimburse the State, in part at least, for the production. I have thought that just so soon as the results of this work were turned over to private persons or companies for their use in detail, just that soon it would be said that the work was being carried on for the immediate personal benefit of a very few citizens.

Hence, in reply to numerous applications for data I have answered in the negative, and have endeavored calmly to give reasons for this action which would satisfy the applicants, and, so far as I know, this rule has not been departed from with respect to the information collected by the State irrigation investigation; and such information has not gone out of this office, except when it has been called for in court, or transmitted to the Legislature in the progress reports made.

Other and more applications for data are at hand at this time, from Kern, Fresno and Tulare counties. The applicants generally offer to pay for the information, or to pay for the clerical work necessary in its preparation for their use. One applicant offers to publish, for the general information of everybody, the map with respect to a certain river, and surveys out from it, so that all in its neighborhood may equally have access to it. Another says that a great big section of the country, and the people therein, would be benefited by the preparation of the matter for him and his associates. And again, that representstive men in a certain rapidly growing irrigating region have delayed pressing upon their Board of Supervisors the wants of the county for a reliable map, in anticipation of the issue of a map from this office, embodying much data not otherwise available. Now, I believe these representations all to be reasonably fair, and to be prompted, in a considerable degree at least, by motives of public interests, and that the public dissemination of this data would be to the benefit of the State.

The maps, papers, notes, etc., in this office have never been made public records like those in the Surveyor-General's office. They are not arranged so that they can be consulted by those not familiar with the work. The arrangement of plates, etc, for public inspection, is quite a different matter from the arrangement of data for office work in the preparation of a report, money has been provided for the last purpose, but not for the first. Even to lay open the work to public inspection would necessitate the employment of at least one clerk and draftsman to attend to the matter, and there is no money for any such purpose. To comply with requests to furnish data will be to spend part of the little appropriation in the preparation of copies, etc., which would not be justified, of course, or to establish the fee system.

In conclusion, the situation is just this: A *general* report and map is being prepared in this office for publication by the State; an appropriation, upon a definite estimate, for the completion of this work was asked for; the Legislature cut down the amount to two-fifths of the estimate. There is no money whatever for publication, nor can there be, unless the next Legislature sees fit to appropriate it; hence, there can be no publication completed for at least a year, and perhaps longer.

The details of the work, which are the data specially required in most applications thus far made, cannot all be embodied in any report which I can prepare with the means at command. They should be available for those who can use them in all reason and justice, considering the amount of money expended by the State in other quarters, and it is my desire to make them so. Hence, if, by any means, the desire of the people of the irrigation counties, where our work has extended, to have its detail results at their disposal, can be favorably met, I hope that it may be done.

Governor Perkins' Reply.

To the above the Governor replied in a letter dated March 28th, from which we quote as follows: While I think you have pursued the proper course in not permitting the results of your work to go into the hands of private persons for their own personal use, I also agree in believing that, if possible, this data should be brought before the public, or made available for public use, as soon as possible. It occurs to me, that if any consideradle interest in any county desired a tracing of some detail, map, or copy of some notes to be at hand for their reference, it would be an easy matter to have these data called for by the Board of Supervisors; and that, on such applications, you would be justified in permitting tracings and copies to be made for publication, as it were, by posting or filing in the custody of an official of the county. Of course, persons most interested would have to provide for the cost of copies, and the applications should be made by the county officials. This would, in fact, be a publication, and the most inexpensive that could be provided, I suppose. Further than this, if persons interested should choose actually to publish by lithographing any such maps, there could be no objection so long as the State was not made liable for the cost of the work, and individuals are not permitted to secure copyrights for publishing the maps or data.

The correspondence on the above subject, and of which we have but given an outline, has been published in full by the State Printer, and can be had by addressing the State Engineer at Sacramento.

A Veteran Agriculturist.—We read in an English exchange that on March 5th, the National Agricultural Society of France gave a banquet to their president, M. Chevreul, at the Cafe Riche, Paris, in commemoration of the 50th year of his election. Nearly every member of the society present in the city attended. M. de Mahy and M. Dumas recounted the services and discoveries of M. Chevreul, attributing his successes to untiring work, regularity, and moderation in the conduct of life, love of method, respect of imagination, and culture of elevated ideas and search for truth. M. Dumas concluded by wishing the aged but robust president long life and good health. A complete ovation followed. M. Chevreul embraced M. Dumas, and M. Henze presented a colossal bouquet of camellias, which, says the report, hid the person, and blocked the remarks of the president. M. Chevreul is in his 97th year; he was elected a member of the National Society in 1832; and since 1849 has been 34 times Vice-President or President of the Society.

The improvements in the microscope have been gradual. Singularly each step in improvement has led to changes in the theory of microscopic physiology, and yet it has, in some cases, been found afterward that the same facts could be observed almost or quite as well with the older form and arrrangement of lenses. Quite recently the introduction of a system of lenses with short focal distances, one-sixteenth of an inch and less, has led to the discovery that human saliva is filled with flat, nearly transparent, irregular corpuscles.

The Eye of the House Fly.—Prof. Fairfield thinks there are reasons to believe that the common house fly, with its numerous lenses, capable, as has lately been proved, of change of focus, like the human eye, by a circular muscle, overlooked by early entomologists, can avoid the serious difficulties we meet with in high powers, and could distinctly recognize objects only a twenty-millionth of an inch in diameter.

Dr. Lambert says it is a common error that the joints of animals have always a synovial fluid which is in the nature of a lubricant. The elephant, with his relatively moderate motions and great weight, has admirable cartilages but absolutely no lubrication therefor.

PATRONS OF HUSBANDRY.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully solicited for this department.

Wheatland Grange and the Debris Question.

At a meeting of Wheatland Grange, No. 100, held April 1st, the committee appointed at a previous meeting to draft preamble and resolutions in regard to the debris situation, reported as follows, to wit:

WHEREAS, By the process of hydraulic mining, less than 100 companies have been preying upon the people of the valley, destroying its agricultural area, obliterating its cities and villages, clogging its water-ways and dislodging the rivers from their channels into the agricultural lands;

WHEREAS, State Engineer Hall, in 1878, after actual survey, reported 43 546 acres of land destroyed upon the Bear, Yuba and Feather rivers; and

WHEREAS, The destruction upon the American river has been as extensive and complete, while during the seasons succeeding 1878 much more land upon these rivers has been so invaded by the sand as to be virtually destroyed to its owners, so that we believe fully 100,000 acres of the richest agricultural lands have been drawn from production and in great part covered with sand;

WHEREAS, Mr. M. M. Chipman, in his report to the State Medical Society, reported, as the result of his research, that the property, to the value of $15,944,739, had been manifestly destroyed by the sand from hydraulic mining, while we can only estimate the losses by including the value of the enormous annual agricultural products withdrawn from our granaries, our storehouses and our exports; our taxable property reduced one half; taxes doubled; property values depreciated; the wealth of our most fertile districts drained by fruitless leveeing, which the owners could not avoid without abandoning their property and their homes;

WHEREAS, The Sacramento and Feather rivers are being closed to navigation inasmuch as, although ocean vessels of 1,000 tons and more ascended to the Capitol city in 1850, and later, now flat-bottomed steamers of a few hundred tons ascend with great difficulty; and

WHEREAS, The whole Sacramento river channel has, in less than 20 years, been filled from 10 to 15 ft., according to the investigation of the State Engineer, and its carrying capacity rendered in that time from one-half to one-third of its original capacity; while the orchards bordering on the river for 20 miles below Sacramento city are dying by reason of the raising of the water line in the soil, and from Washington down the right river bank, the burial by the sand has already fairly commenced;

WHEREAS, The hydraulic miners in their use of the rivers as sluiceways, and our farms, towns and cities as dumps, are violating the most fundamental principles of our constitution, and are wantonly disregarding our sacred rights of property;

WHEREAS, In disregard of our rights to protection and to the interests of the State, interested parties are seeking to bring about legislative action that would be but a deceitful remedy, and a compromise and sacrifice of vested rights in the valley; therefore, be it

Resolved, That we of Wheatland Grange feel it timely and necessary to our protection, and to the information of the State and of the United States, that we declare our position upon the debris question, in all its aspects, fairly and fully.

Resolved, That we think such action on our part is more appropriate, since we will be so irreparably injured by a delay or an inefficient remedy.

Resolved, That compromise is a superfluous term when applied to our debris question; that we have, in common with all men, a right to the integrity of our property; and that it is the first duty of the courts and the Government to secure that inviolability of property rights.

Resolved, It is evident that the flow of debris cannot be stopped unless the hydraulic companies withhold their tailings from the reach of the flood-waters of the rivers, and therefore, that no system of dams in the river canyons will be effectual as a remedy, and that the use of those canyons as dumps by the hydraulic companies is inadmissible and must be stopped.

Resolved, That we must regard any legislation, State or National, looking to the erection of dams in the river canyons as intended to avoid an adequate adjustment, as an artifice to prevent a proper remedy, and as proposing a misappropriation of public funds.

Resolved, That such measures but obstruct the action of Government and of the courts, in vindicating the inviolability of property rights, and but mislead the public as to the only adequate remedy, and are therefore inimical to our safety and to the interests of the State.

Resolved, That the time has come when the proceedings of the hydraulic companies must be recognized as unwarranted and indefensible, and *their interests*, the interests of the State, and the safety of the valley will be best promoted by confining their operations within bounds wherein they will be harmless to other individuals, and to communities.

Resolved, That the accurate and definite judicial determination of respective rights will alone settle this problem by making it impossible to violate ascertained rights with impunity, and by furnishing a basis for legislation by which, in case the laws enunciated leave us to be preyed upon by these companies, may have redress. We believe that the court before which the issue is now pending will decide in accordance with the spirit of justice of the common law.

Resolved, That we believe we have the sentiment and understanding of the State with us, and that it is high time that our homes and property be secured.

Resolved, That with us the ordinary objects of politics are subordinate to the *perils* to our *homes* and property, and public action must in good faith aim at our protection, or we will brand it as hypocrisy and fraud; that public men who receive our support must act and speak fairly and sincerely in this matter, which has but one side, and admits of no temporizing and of no concession.

Resolved, That we call upon the Granges of the State to express themselves again clearly and emphatically in this matter, so as to give our brother Grangers in the older States, a clear idea of our situation in our property rights in the past, and also that no more hesitation and evasion may be evinced in public action, and that the Grange, as an instrument for developing and uniting an intelligent and just public opinion, *be vindicated*.

D. A. OSTROM,
D. P. DURST,
HUGH MORRISON,
C. K. DAM.
A. J. WEBSTER,
Committee.

I. W. HUFFAKER, Secretary.

Co-operation at Lodi.

The Grangers' Co-operative Business Association, recently incorporated, has bought out the business and stock of the People's Palace, and will open out in the same quarters soon with an enlarged stock of goods. The store building is to be renovated, and everything prepared to carry on an extensive business. "It is not our purpose," said one of the prominent stockholders to us yesterday, "to oppose any other business house in Lodi. The association will tend to draw and hold business to Lodi that has heretofore gone elsewhere, and thus will it make more business for Lodi than it deprives other business interests of." Mr. C. T. Elliott has been chosen business manager, and has entered upon his duties. The enterprise is backed by solid men. The following is a list of the stockholders:

R. Pixley, Mrs. J. W. Kearney, C. Allison, John Hutchins, Truman Stoddard, J. D. Huffman, Albert Woods, A. T. Ayres. E. Lawrence, George Hogan, Mrs. A. W. Post, Samuel Ferdun, J. M. Fowler, Mrs. Geo. Cluff, E. R. Elliott, A. J. Nelson, R. J. Parsons, B. F. Langford, F. Ritter, Wm. Ennis, H. Adams, C. M. West, J. Wiltse, W. B. Stamper, A. A. Vansandt, M. L. Cook, S. C. Waters, R. D. Wilson, Wm. McIntre, Chas. Bamert, John Northup, John L. Keagle, Joseph Debold, N. Fessier, N. Dill, C. T. Elliott, O. O. Norton.

The Board of Directors consists of Wm. Ennis, J. D Huffman, Geo. Hogan, B. F. Langford, A. A. Vansandt, A. T. Northup and R. J. Parsons. With such powerful backing behind it, and such a broad field before it, the enterprise cannot but be successful. It is reported that Mr. E. R. Pease, of Galt, has united in partnership with the association, and that the business will be managed by him and Mr. C. T. Elliott jointly.—*Lodi Sentinel.*

A VOTE OF THANKS.—On the retirement of Amos Adams as business manager of the Gragers' Business Association, the following resolution, introduced by I. C. Steele, was unanimously adopted by the Board of Directors:

Resolved, That we, the Directors of the Grangers' Business Association of California, do hereby renew our expression of confidence in the integrity and ability of Bro. Amos Adams; and we do hereby tender him a vote of thanks for the able and faithful manner in which he has discharged the many duties imposed on him as business manager of the Grangers' Business Association, and also as Secretary of this Board.

Resolved, That a copy of this resolution be sent to the *California Patron* and RURAL PRESS, for publication.

TWINE BINDERS.—We have received from Frank Bros. & Co., agents for the Walter A. Wood Mowing and Reaping Machine Co., a statement that articles have appeared in various newspapers, stating that suits have been commenced against manufacturers of Appleby twine binders, by C. H. McCormick and others, in order to compel such manufacturers either to pay a royalty or cease manufacturing. It seems that some local newspapers have published statements that legal proceedings are to be commenced against *all* makers of twine binders. The Wood Co. claim that they own and control all patents used in the construction of their harvester and twine binder, and are not in any danger from suits that may be either threatened or commenced for infringement. They also state that the Walter A. Wood twine binder is an entirely distinct and different type of machine from all others yet produced, and that their company has the only and exclusive right to build it.

THE House Committee on Education and Labor has ordered a bill drafted to appropriate $10,000,000 for schools throughout the United States, in proportion to the prevailing illiteracy.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA.

THE FRUIT CROP.—Oakland *Tribune*: Interview with W. H. Jessop, of Haywards: Never before did the orchards look more lovely, nor were the prospects better for a rich harvest of fruit then at the present writing, notwithstanding the many predictions of failure in consequence of heavy frosts and light rainfall. I regarded the long, steady, cold winter as the most favorable circumstance in insuring a favorable fruit season, as it keeps the buds back, to escape late frosts; and therefore it has proven true. At the close of the long cold winter, terminating as it did with a long siege of blighting co'd, with north winds about the 20th ultimo, left the orchards with scarcely a bud swollen. But with three or four days warm sun after the first warm rain, they did not open into bloom, but burst forth like popcorn on a hot skillet. The whole orchard now forms one grand floral bower. Accustomed as I am to see an orchard coming into bloom, I cannot resist the inclination to stop every few minutes and note, in silent admiration and wonderment, the magical changes taking place around me. The changes are so rapid after the beautiful summer showers which we have had the past few days, that it is mystifying in the extreme. No one can fully appreciate the refulgent beauties of an orchard in bloom without spending a few days in one at as favorable a time as the present. You ask me how the prospects of the present year, for fruits, compare with those of last year. The prospect at this time last year was very favorable, and the outcome of the season fully justified the prospects. But the present prospect for a magnificent fruit crop (as far as I have seen) is unsurpassed. The almonds and apricots, taking the lead in their rapid development, are now as large as the largest cherries, and as full as they can stick on the trees. The apricots, especially, are very full and will have to be thinned to lighten the load, if they do not drop, which is likely to occur, to some exten', at least. The currants and gooseberries are full and well developed; the plums, prunes, pears and apples, are only now in magnificent blossom, but the indications are that there will be an abundant crop if we don't get a heavy late frost, which is hardly probable now, especially in the vicinity of Haywards. So, from the present outlook, I think we will give the canners all they can do, and make others, that would be canners, wish they had started in the business also, especially those who did not start one in Haywards, the second fruit-shipping station in the State.

THE OUTLOOK.—Alameda *Reporter:* All the indications of the season are for a good crop of hay and grain, and especially for a royal crop of fruit. The late coldness of the season kept back the early sown grain and prevented it suffering from the lack of moisture owing to the light rains; but meanwhile it was becoming well rooted, and now that the heavier rains have come, the warmer weather is covering the fields with a luxuriant growth. Though probably a little later than the average, the harvest promises well. The cold late in the season was also favorable for fruit. It prevented the buds opening to be caught by the late frosts. But a few days of warm weather have worked a magical change and the orchards are transformed into floral bowers. The almonds are thickly set, and the small fruits look well.

COLUSA.

EDITORS PRESS:—It commenced raining April 8th at noon and continued with very little intermission until about daylight this morning. The ground is thoroughly drenched once more, and at this season of the year, to be so favored, the farmers everywhere within the limits of this last storm are rejoicing. The early winter months were somewhat precarious; so much so that any showers that may come during this month will be hailed with gladness by all. I pulled up some volunteer barley to-day measuring slightly over two and one-half ft. Winter-sowed grain is considerably behind that in bight, but is doing well, and with favorable weather will make an average crop. I sowed some barley on the 5th inst., about one sack to the acre, on good, rich bottom land. This may be considered late work for such a season as this, but I have tried the same experiment four years in succession with good results, and consequently I am not afraid to risk it. The test of a pudding is in eating it, and I am once more unavoidably compelled to say something in favor of our lovely climate and the advantages California offers to a new beginner. Four years ago I sowed barley on sediment land (without even plowing it) on the 6th of April, and on the 6th of June it measured 60 inches, making a growth of one inch per day on an average for two months. This will no doubt conflict with what some of the writers of the PRESS have heretofore argued—that nothing can be done in California, in the agricultural line, without a pocket full of money and any amount of agricultural implements. All the implements I used to produce the above results was an oak brush, cut and trimmed to suit myself. This operation was performed on Government land, which at that time was 22 miles from a railway station, but within two months will, in all probability, be within five miles of one, and has already a steam wagon depot half a mile from it. This is how things rush forward in the "Golden West." There is nothing slow about California. Where is there, under the heavens, another country or climate which will produce such results in the same space of time?—L. D. J., Olimpo, Colusa Co., Cal.

LOS ANGELES.

LARGE LAND SALE.—*Express:* A record was made in this city last Monday of the largest real estate transaction that has taken place in this county for some time. The Centinela and Sausal Redondo ranches, consisting of 24,967 acres, were conveyed by Sir R. Burnett, to Mr. Daniel Freeman, the consideration being $140,000, a fraction over $5.60 per acre. Mr. Freeman has had possession of the lands for a number of years, with an agreement, we believe, to purchase within a stipulated time. This large body of land lies southwest of Los Angeles, bordering on the ocean, between the Palos Verdes and La Ballona ranches. The soil is all good, and suitable for grazing or tillage. Immediately around the ranch houses, some four hundred acres are enclosed, upon which is a large bearing orchard of semi-tropic and hardy fruits, with an excellent water supply. Upon the plains, there is at present a very large acreage of grain. In 1874 a stock company was formed, and an effort made to colonize these ranches. A portion of the Centinela was subdivided into small tracts, a town site staked off, and an auction sale held on the grounds in February, 1875. But the collapse of the Temple & Workman bank, which created confusion all over the county, caused this enterprise to be abandoned—Mr. Temple himself being president of the company. Mr. Freeman has since refunded out of his own pocket, all the moneys advanced by purchasers at that sale. A similar project will not be tried again, but Mr. Freeman says that he proposes, at no distant day, to subdivide these lands and offer them at reasonable figures to those who wish to establish homesteads. We think he will find no difficulty in securing purchasers.

SACRAMENTO.

MAKING BERRY BASKETS.—*Record-Union.* Matthew Cooke & Son have opened a new and what promises to be an important industry in this city. For many years they have conducted what is known as the Pioneer box factory, on the corner of Front and M streets. They have been manufacturing all kinds of boxes and fruit packages, excepting berry baskets. The manufacturing of this class of free packages requires an entirely different class of machinery and labor from that used in the making of the ordinary fruit boxes and crates. About 50 ft. east of the box factory, in a large and commodious room, Cooke & Son, at an expense of several thousand dollars, have placed all the machinery necessary for the carrying on of this important industry. The power to run the machinery is transmitted from the box factory by a large endless wire cable. In the new building is a complete saw mill. This has been built for the purpose of converting logs of sycamore, cottonwood and other trees that grow in our immediate neighborhood into basket-making material. Here we find a band saw, slicer and molding machines of various kinds. All of this machinery, which works admirably, it may be said to the credit of California, was constructed in this city. Around the room are nicely made work tables with all the implements and tools used in the construction of the berry baskets. In front of these tables, all seated on comfortable stools, are 50 workmen, all busily engaged and turning out thousands of those neat little baskets per day. These workmen are not Chinese. They are white boys and girls, varying in age from 12 years to 20 years. Messrs. Cooke & Son have started in to solve the Chinese problem, and if other manufacturing enterprises would follow their example its solution would be a matter of a very short time. The cottonwood trees that grow so plentifully throughout our valley is the material used for making those baskets.

MAY DAY PICNIC AT FREEPORT.—EDITORS PRESS:—In the last issue of your paper is a notice of the "Farmers and Grangers' picnic," to be held at Freeport on May 4th. The original "Farmers and Grangers' picnic" is to occur on Monday, May 1st, at Beach's grove, Freeport, and this year is for the benefit of the district school, and is under the management of the trustees. It is not intended to in any way interfere with any subsequent picnic. Governor Perkins is to deliver an address. Mr. Albert Hart is to recite a poem, and the Governor's Guard cadets are to give an exhibition drill. Prizes are to be given for the games usual on such occasions. Glass ball shooting may be indulged in by those who desire to test their skill An excellent band of music has been engaged, and lovers of the Terpsichorean art will have a fine floor to dance on. Everybody is invited, and a pleasant break in the monotony of daily life is anticipated.—H. E. SPRAGUE, Sacramento, April 18, 1882.

SAN DIEGO.

NEW LANDS.—Los Angeles *Express.* Wm. Minto, U. S. Deputy Surveyor, has been engaged in surveying the new San Jacinto ranch with a view of subdividing it. H. I. Wildy, of San Diego, is engaged in a similar work on the old San Jacinto ranch, for the same purpose. These two ranches—partly in San Diego and partly in San Bernardino counties—embrace a very large area of territory, which includes a considerable body of tillable land suitable for homesteads, but the greater part is more especially adapted for grazing purposes. As this and other bodies of cheap lands will be opened up by the California Southern railroad, that section

will, no doubt, soon be dotted with many humble homesteads.

SAN JOAQUIN.

THE MOKELUMNE BASIN.—It is not generally known that there is a belt of land from 10 to 20 miles in width, running on both sides of the Mokelumne river and extending across the northern part of San Joaquin county from tide water to the foothills, that is one of the most favored spots, not only of California, but of the globe. In this belt crops never fail, and the average yearly yield will, we believe, equal, if not exceed, that of any other locality. Moreover, the grain is remarkably strong and free from cheat and smut. The soil is of a strong, rich, sandy nature, and can be cultivated with one-third less horse power and labor than the black lands. In this belt are located the prosperous towns of Lockeford, Woodbridge, Acampo and Lodi; also, New Hope and Elliott, which are rapidly taking on the proportions of thriving villages. No inland town in the State is building up faster or in a more permanent manner than Lodi.

PEACH TREES KILLED.—Lodi *Sentinel:* Supervisor Perrott showed us this week branches of peach trees, growing on his farm west of Woodbridge, which showed the effects of a strange disease upon them. Last year this disease killed outright all the young peach trees on his place, and this year it is working devastation again in his orchard. Mr. Perrott thinks it is the work of some insect pest. The bark of the young wood is attacked first. The buds are killed and turn black. At each bud the gum issues profusely, as if Nature in the tree was endeavoring to heal a wound or bruise. A twig killed by this disease looks as if it might have been scorched and burnt by a blistering sun. Mr. Perrott says that his neighbors along the Mokelumne are also complaining of the same trouble with their peach trees. It is a noteworthy fact that only peach trees are attacked by this disease. We would be glad to hear from anyone who can inform us of its nature.

SANTA BARBARA.

EDITORS PRESS:—Rains still continue; another fine shower last night. Farmers can ask nothing more to their minds. The winter has been cold, and fruit trees blossom late, and are now full of bloom. Everyone anticipates abundance of all kinds of fruit this year. Most ground is in uncommon good tilth, and doubtless most crops will be uncommonly good in proportion. The Carpinteria will doubtless come in with her matchless Lima bean crop, and other sections will raise their specialties in proportion.—S. P. SNOW.

SONOMA.

A CO OPERATIVE RANCH.—Santa Rosa *Republican:* The old Truett ranch, south of Cloverdale, is described as a co-operative undertaking. The association is composed of Italians and Swiss, and has been in existence but one year. The location, between Geyserville and Cloverdale, on Russian river, embraces hill and valley and the most delightful scenery. An exchange says that the sum of $12 per share has been paid in, which is estimated to have increased in value to $24 per share, consequent upon the judicious purchase and partial sale of a large tract of country land. The colony owns 1,393 acres of lands, valued all the way from $5 to $70 per acre, and aggregating a total sum of $39 326 On the lands of the colony have been planted not less than 400 000 cuttings and rooted vines, besides over 4,000 fruit trees. This is said to be the first mutual co-operative farming institution organized in the State, and its success, so far, demonstrates both the feasibility of the plan and the profitable character of such ventures.

NEVADA.

INDUSTRIAL NOTES.—Reno *Gazette:* A Benson, a resident of Beowawe, now in Reno, intends putting in 1,000 acres of alfalfa this year, to enable him to better protect his stock during winter months. He will market 1,000 head the coming season. Mr. Benson has one of the best farms and stock ranges in the State, and is constantly making valuable improvements to his already beautiful place. He has bought 2,500 shade and ornamental and 400 fruit trees in Sacramento, and will take a car-load of trees from here before his return home. Only a day or two ago Mr. Benson went to the Land Office and bought several thousand dollars worth more of Government land lying in his neighborhood. The cattle of Nevada are as fine as those of any region of the United States. Last Tuesday the Refrigerator Company bought of H. J. Pratt, of Clover valley, 197 head of the finest cattle ever raised in that county, at eight cents per lb. The three largest weighed respectively 2,150, 1,955 and 1,825 lbs. Last night 16 cars of cattle left Reno for Oakland and San Francisco. These cattle were all fat and would average 700 lbs. Flouring mills, too, are being erected in various parts of the State. The Silver Star mill at Reno is running at its full capacity, and orders are coming in from all over the country. The flour turned out is of the finest quality, and is fast taking the place of California flour with Nevada people. W. R. Lee, who has been for some years running a flouring mill at Greenfield, Mason valley, has sold his mill at that place and removed to St. Clair, Churchill county, where he will run a flouring mill of two run of stones and a capacity of 20 barrels a day. His new mill cost about $5,000. Out along the line of the Carson & Colorado railroad there are many fine agricultural valleys and immense ranges for cattle. These places will now soon become very valuable.

News in Brief.

SALOONS are hereafter to be closed by law in Ohio on Sunday.

PHILADELPHIA workingmen are indignant over the veto of the Chinese bill.

THE St. Louis Grand Jury recommends that saloons be limited to one in each block.

WAR is openly declared at Cairo against all Europeans engaged in official functions in Egypt.

FIVE thousand iron workers have struck in France against a proposed reduction in wages.

MARK SHELDON, the well-known Sewing Machine agent, has removed to 9 and 11 First Street.

THE Methodist ministers of Philadelphia last week declared in favor of an Ecumenical Conference of the Methodists of America, two years hence.

THERE is a general strike among almost all classes of laborers at Toronto, Canada. Probably not less than 2 000 workmen are engaged in it. The strike is driving business to Western towns.

FOUR excursion parties from the East, numbering in all probably 600 persons, are to arrive in Los Angeles soon, the first installment being due April 27th, and the remainder coming at intervals of a week.

THE new comet, according to the astronomers, will reach the perihelion passage on the 10th of June, and will be visible until September. The best observations will be granted to the people of the Southern hemisphere.

THE hearing in the matter of the contest of the will of Hon. Geo. F. Baker, deceased, took place before a jury in the Superior Court at San Jose. The jury were out 20 minutes, and returned a verdict that "at the time of making the will, March 8, 1880, deceased was incompetent."

THE rush to Butte city, Montana, and Wood River, Idaho, is simply immense. A Reno *Journal* reporter, who was at Ogden the other night, reports the Utah & Northern train crowded, a large number of the passengers being compelled to remain standing in the cars, the company not having coaches enough to accommodate the travel.

A GREAT source of revenue to Siskiyou county is derived from the sale of furs of various kinds, some of which are quite valuable, especially the silver-gray and other foxes, and martens, the fur of the latter being equal to Russian sable. Mink skins are worth little now, but beaver, otter, fisher and other small animals' furs bring about the usual prices, although the fishers are getting scarce

Pacific Congress Springs.

One of the most pleasant of summer retreats within easy reach of the metropolis is Pacific Congress springs, in the warm belt of the Santa Cruz mountains, at an altitude of 680 ft. above sea level, on the west side of the Santa Clara valley. The resort was established in 1866, and has been managed for the past ten years by Lewis A. Sage, the present owner. The springs are 12 miles southwest of San Jose, in a wide canyon, down which flows a never-failing stream of water, which gives a peculiar charm to the spot, and which abounds with trout.

The springs derive their name from their similarity to the noted springs of Saratoga, N. Y. The use of the water is very efficacious in the cure of dyspepsia, rheumatism, liver complaint, and impurities of the blood. It is a refreshing beverage, coming as it does in effervescent volume from its source and is an invigorating tonic.

There are 720 acres in the tract, all abounding in trees and within a few miles of the redwoods. The surroundings are picturesque and beautiful, and there is none of that barrenness and bareness sometimes found in the country. The numberless trees surrounding the hotel add greatly to the charm of the spot.

The host, Mr. Sage, liking good living himself, sees that his guests have it. There is always an abundance and of good quality; in fact, the table is exceptionally good, as the writer and all who have tried it can testify. The rooms are airy, sunny and clean; the furniture fittings and conveniences being in modern style. There are pleasant drives near by, and lots of good fishing and hunting. People who like trout fishing will find plenty of opportunity. Within two hours' ride there are half a dozen fine streams where the spreckled beauties may be found. Mr. Sage is an enthusiastic hunter and angler, and knows all the localities.

These springs are 55 miles from the city. They are reached by the S. P. C. R. R. (narrow gauge) to Los Gatos, thence by stage, the through fare being $2 75. The hotel opened on the 15th instant. The rates per day are $2.50; by week, $10; by month $40 to $75. There is telegraphic connection, livery stable arrangements, etc. From this resort excursions may be made to Santa Cruz, San Jose, Santa Clara, Los Gatos, Stevens' Creek, Lake ranch, Guadalupe mines, New Almaden mines, etc.

THE "RURAL PRESS."—The RURAL PRESS is an old friend of the farmers of this coast, and is the best agricultural paper ever published here. —*Mussel Slough Delta.*

SEND name and address to Cragin & Co., Philadelphia, Pa., for Cook Book free.

HEALTH AND RECREATION.—This State has long enjoyed the reputation of possessing some of the best mineral springs in the country, and this fact, together with its healthful climate, accounts for the beneficial results which have followed a visit to these springs by many invalids. Now is the time for those intending to take a trip to the country during the hot summer months to be looking about for a suitable place, and to such we would say, try the Siegler Springs, Lake county, which are situated in a beautiful location, with good hunting and fishing close at hand, where the best of accommodations can be secured at reasonable rates. The Springs can be reached in one day from S. F., the Springs coach connecting at Lower Lake with the stage from Calistoga on Monday, Wednesday and Friday, and at Glenbrook on Tuesday, Thursday and Saturday. Among the important improvements which have lately been made is a large swimming bath. Springs are flowing out of the ground in a great many places on the property, containing iron, soda, arsenic, magnesia, etc., and many remarkable cures have been performed from the use of these waters. Persons intending visiting the resorts, whether for health or pleasure, will do well to read the advertisement of the Siegler Springs in this issue of our paper, and send to Mr. W. T. Garratt, manager of the Springs, who will cheerfully give any information which may be desired.

Fine Poultry.

EDITORS PRESS:—Those wishing to start new yards, or improve the poultry stock of the farm, would do well to read the advertisement of Mr. O. J. Abbee in this paper. A visit to "Oak Grove Poultry Yards," a few days ago, impressed us very favorably as to the size, beauty and healthiness of the birds in every pen. Neatness, taste and scrupulous cleanliness pervaded every department, as we passed from coop to coop, nicely arranged under the grand old oak trees that give name to the beautiful place. One trio of Langshans particularly attracted our attention. How they could be any finer would be hard to imagine.

I also visited Mrs. M. E. Newhall's "Willow Glen Poultry Yard," at their new place in the willows. The yards, houses and coops are all new, neat, commodious and well arranged and stocked with bright new importations from the best breeders at the East. Mrs. Newhall's reputation as a careful and successful breeder and importer is too well known to need any commendation from me. Her card may be seen in the "Breeders' Directory," of this paper.

G. W. M.

American Driven Wells.

Attention is called to the advertisement in another column of Babcock & Co., in reference to the American driven well water supply system. These wells are in extensive use in all of the Eastern States, there being 750,000 of them in New York State alone. For obtaining at moderate cost an abundance of pure water they are what are needed in this State. Send for circulars. All letters of inquiry will receive prompt and courteous attention. No. 40 Merchants' Exchange, San Francisco. *

TREES, PLANTS AND SEEDS.—We have received copies of the tree, plant and seed catalogues lately issued by R. J. Trumbull & Co., of 419 and 421 Sansome street, S. F. This well-known firm has this season issued two carefully prepared catalogues—one of fruit and ornamental trees, flowering shrubs, plants, bulbs, etc., and the other pertaining to vegetable, flower and field seeds, etc. The catalogues are a model of classification, and are the most comprehensive issued on this coast.

ROSES.—Isaac Collins, nurseryman, at Haywards, has laid our garden under great obligations to him by sending us a bundle of roses, well rooted, which have been duly set out and will soon add much to our rose resources.

HOW TO STOP THIS PAPER.—It is not a herculean task to stop this paper. Notify the publishers by *letter*. If it comes beyond the time desired, you can depend upon it we do not know that the subscriber wants it stopped. So be sure and send us notice by *letter*.

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.

ANNUAL STATISTICIAN OF 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 502 Taylor St. Price, $4.

CENTRAL CITY, SANTA BARBARA CO., CAL.

A. R. BOOTH:—Your Squirrel Poison gives good satisfaction. Send us some more. Enclosed find check for amount of bill. KAISER BROS.

SAN LUIS OBISPO, June 10, 1881.

MR. A. R. BOOTH, *Dear Sir:*—I tried one of your cans of Squirrel Poison, and find it very good. I found 42 dead squirrels after putting it out, and I think there were more which I did not find. Yours, J. B. TOWNSEND.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co.'s SCIENTIFIC PRESS PATENT AGENCY, No. 252 Market St., S. F.

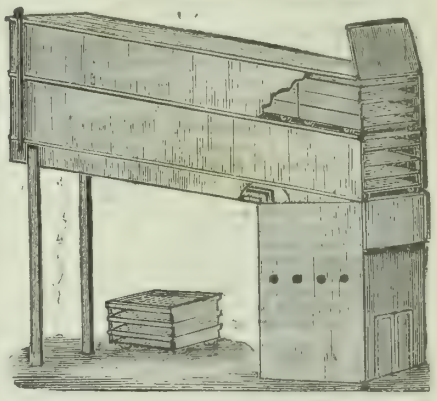
FOR THE WEEK ENDING APRIL 4, 1882.

255 918—FAUCET FOR REGULATING OVERFLOW FROM BASIN—F. A. Bishop, S. F.
255,838—BUCKLE—Alex. Cadwell, Petaluma, Cal.
255,935—ORE CRUSHER—A. N. Cameron, Greenville, Cal.
255,773—CURTAIN BRACKET—H. O. Clement, Albany, Oregon.
255,855—CHILD'S CARRIAGE—Adam Heim, S. F.
255,990—PUMP—Wm. D. Hooker, Oakland, Cal.
255 876—CUFF BUTTON—David Lubin, Sacramento, Cal.
255,802—NUT AND BOLT LOCK—B. Marks, Fresno, Cal.
255 882—CHECK FOR HORSES—M. M. Nathanson, S. F.
255,887—HAY-STACKING APPARATUS—Gamos Richardson, San Jose, Cal.
255,888—DUMPING CAR—I. B. Robbins, Stockton, Cal.
255,898—VINEYARD PLOW—A. C. Taylor, S. F.
256,079—SHACKLE—J. M. Trackwell, Skookumchuck, W. T.
255 842—TUYERE—James E. Day, S. F.
255,900—CUSHION PROTECTOR FOR BOTTLES—James M. Thorpe, San Jose, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast Inventors transacted with perfect security and in the shortest possible time.

The Latest Style Improved Alden Evaporator,

For Preserving Fruits, Vegetables, etc.



Latest Improved Alden Drier.

In the evaporator shown by the above cut we retain the Alden process, *i. e.*, "moving the fruit in currents of heated and humid air," while the capacity is greater and the cost much less than in the old style Alden machines, which have vertical chambers The new style, having the *inclined* chambers, requires no hoisting apparatus, no brick work nor building, and they can be set up, taken down and moved anywhere and by anyone in a few hours. Thousands of them are in successful operation in the Eastern States, giving perfect satisfaction. They are simple, compact, portable, and easily understood and operated. They are substantially made of the best material, and the fruit frames have galvanized wire cloth. The heat radiating from the smoke-pipe enters the lower chamber through holes in its bottom, so that all the heat is utilized. The stove can be used for house warming in the winter. Only one person is required to operate (including firing) this evaporator, and the product is equal to the best Alden fruit. The loaded frames are moved up through the upper and down through the lower chamber on rollers, as shown, which gives them a line of travel of 33 ft. We furnish two sizes of this style of evaporator. No. 1 is 17 ft. long and has 33 frames, 39 inches square each, giving a total drying surface of 350 ft.; capacity, 60 bushels of apples per day. Price, for everything complete, on board cars, $250. No. 2 is 10 ft. long and has 20 frames, 27 inches square each, giving about 100 ft. of surface; capacity, 20 bushels per day. Price, complete, $160. We continue to furnish the old-style Alden apparatus for large factory purposes at reduced prices.

Intending purchasers should calculate the number of feet of surface of our frames for comparison and so determine which drier gives the greatest capacity; and if they will also examine the material and workmanship of our Evaporators, and then follow the products of the various driers into the market, they will discover which is the best and cheapest Evaporator. For further information and prices of territorial rights, Address,

ALDEN FRUIT CO.
220 Sansome Street, San Francisco, Cal.

Laurel Glen Fruit Farm.

This place is beautifully located among the hills. A pleasant drive from railroad and beach. Deer and other game abound in the vicinity. A limited number of boarders can be accommodated for the summer and hunting season. The place is especially desirable for ladies with children. Address, for further information, Isaac Dakin, Soquel, Santa Cruz county.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

Beautiful Things.

Beautiful faces are those that wear—
It matters little if dark or fair—
Whole-souled honesty printed there.

Beautiful eyes are those that show,
Like crystal panes where heart fires glow,
Beautiful thoughts that burn below.

Beautiful lips are those whose words
Leap from the heart like songs of birds,
Yet whose utterance prudence girds.

Beautiful hands are those that do
Work that is earnest, brave and true,
Moment by moment the long day through.

Beautiful feet are those that go
On kindly ministries to and fro—
Down lowliest ways, if God wills it so.

Beautiful shoulders are those that bear
Ceaseless burdens of homely care,
With patient grace and daily prayer.

Beautiful lives are those that bless
Silent rivers of happiness,
Whose fountains but few may guess.

Beautiful twilight, at set of sun,
Beautiful goal, with race well won,
Beautiful rest, with work well done.

Beautiful graves, where grasses creep,
Where brown leaves fall, where drifts lie deep
Over worn-out hands—oh, beautiful sleep!

Ellen P. Allerton.

Life the School of Manhood.

A noble man may to a narrow sphere
Not owe his training. In his country he
And in the world must learn to be at home,
And bear both praise and blame, and by long proof
Of contest and collision nicely know
Himself and others—not in solitude,
Cradling his soul in dreams of fair conceit.
A foe will not, a true friend dare not, spare him;
And thus in strife of well-tried powers he grows,
Feels what he is, and feels himself a man.

A Man That Succeeded.

"My only daughter, sir," said Colonel Monteagle, "and, as I venture to hope, accomplished in her way. We are not much in the way of schools or academies here, but I have been her instructor myself, and she is a thorough mathematician, an excellent musician, and a linguist of no mean capacity. We are studying Hebrew now every day, she and I, and she devotes her evening to comprehensive reviews of her Latin and Greek. She will be a scholar sir, if I live to complete her education!"

Mr. Crofton looked curiously at the oddly-assorted pair—the silver-haired, shabbily attired old gentleman, with his bald forehead, eagle eye, and delicately white hands; and the dark-browed, sullen-looking girl, with a gypsy skin, untidy frock, and patched boots.

Pretty? Yes, she might be pretty under some circumstances. The diamond itself is not an attractive stone before the lapidary's art has polished its rude angles into glittering facets of white fire. But she certainly possessed no sweet, feminine graces now.

"How old are you, Miss Monteagle?" he asked, finding it imperatively necessary to say something.

And Mary Monteagle answered in words, "Seventeen," while her looks replied plainly, "None of your business!"

"Go, my child, and gather some flowers to deck our humble board," said the old gentleman, magniloquently, while he conducted the son of his oldest friend into the tumble-down, old stone house, where the carpets were moth-eaten, the furniture mildewed, and every trace of decayed gentility told the sad story of better days,

Mrs. Monteagle, who had been a beauty once, and had her portrait engraved in a "Gallery of American Rosebuds," was sitting up in state in a battered boudoir, in a black silk dress, that must have been quite a quarter of a century old, with a flower in her silver-sprinkled hair, and still preserving the girlish attitude in which the engraver's pencil had immortalized her, oddly contrasting with the sharpened outlines and haggard abruptness of her 60 odd years.

And this was the way in which the old couple lived, in the dead past as it were, Col. Monteagle starving contentedly on the recollection of his past grandeur, and his wife fondly fancying that time had stood still since the days in which she was counted worthy to be one of the "American Rosebuds."

Mrs. Monteagle sweetly welcomed her guest and touched the little hand-bell at her side.

"We will dine, Sarepta," she said to the maid.

"Please, ma'am," breathlessly uttered that young person, "there ain't nothin' for dinner. We ate the last of the cold beef yesterday, and the dog, he tipped over the pan of oysters, and—"

"That will do, Sarepta," said Mrs. Monteagle, with a red spot mounting to each of her cheek-bones. "I said—we will dine!"

And Sarepta withdrew with a jerk.

The dinner was served presently—an instance of the magnetic power of will—but there was no cold beef, neither were there oysters. Fruit, a thin, watery soup of herbs and parsley, tastefully garnished salad of lettuce and mayonaise, and a dish of peaches and cream, formed the meal.

"Quite Arcadian!" said Mrs. Monteagle, with a giggle.

"And very badly served," secretly commented Mr. Crofton to himself. "But the salad was nice."

"Where is Mary?" the colonel asked.

"Drinking in the beauties of the sunset, I presume," the lady answered, airily. "The dear child has an artist's soul, and we do not tie her down to any hours or rules."

The colonel fell asleep in his chair after dinner, Mrs. Monteagle and her painted fan withdrew themselves into the boudoir—and Mr. Crofton, inwardly bewailing himself that he had promised to stay a week at Monteagle Manor, sauntered out upon the heights which overlooked the valley below.

As he stood there, a rustling sounded in the bushes, and the dark-browed gypsy sprang up the hillside.

"You have a fine place here, Miss Monteagle," he said, by way of making himself agreeable.

"I hate it!" said Mary, darkly.

"I—beg your pardon!" exclaimed Mr. Crofton, in amazement.

"I do!" flashed out the girl. "I hate it all! The learning, and the purity, and the grand pretenses and miserable makeshifts!"

"But—"

"Ah!" said Mary Monteagle, "you don't know it all. You never heard the tradesmen howling at the back doors like a pack of howling wolves; you don't know that the house is advertised for sale for tax arrears. How should you? How should you be aware that the very clothes we wear are not paid for, or the coals on which we cook our dinner? Papa smokes his cigars and talks about the Mexican war, and mamma *poses* in the great chair and dreams of embroidery work and tapestry stitch, and I—I am expected to learn Arabic and Sanscrit, and nobody knows what else, and ignore our wretched poverty. But I can't! Who could?"

Mr. Crofton looked pityingly at the girl's sparkling eyes and pale, excited face.

"I am very sorry to hear this," said he. "Can nothing be done?"

"Yes," said Miss Monteagle, brusquely; "something can be done, and I am doing it, in so far as I can. But papa and mamma must not be allowed to suspect it. I am—learning a trade!"

"You!" he echoed. "A trade!"

"There's a factory near by here," she said calmly. "The country girls earn a little pocket money there sewing on shirts. I am to have a machine as soon as I have learned to manage it. I go every evening, while papa fancies I am at the Greek and Latin, to Farmer Pelham's, whose wife teaches me the use of the machine. I am learning housework, too. I made the mayonnaise for your salad to-day, and I baked the bread. Our servant can do nothing of the sort. But it would kill mamma to think that I stooped, as she would call it, to menial labor."

"You are quite right," said Mr. Crofton.

"That is what I wanted to know," said Mary, hastily. "Because, living here all by myself, in such a strange unnatural atmosphere, I sometimes get confused, and scarcely know right from wrong."

"But they will have to know it, when—"

"When I really go into the factory," said Mary. "Yes, I know that. But until then, I would fain spare them the pang. I am to have $1 a day, Mrs. Pelham says, if I operate the machine skillfully. And $1 a day will buy mamma many a little luxury, and go far toward paying the grocer and the baker."

"You are a noble girl," said Mr. Crofton, warmly; and in his eye, at that moment, Mary Monteagle was glorified with rare beauty, as she stood there, the fresh wind blowing her jetty curls about, the reflection of orange sunset deepening the color on her cheek, and the grave far-a-way sparkle of her eyes, halfveiled beneath the long lashes. "And if I could be of any assistance to you in this task—"

"You can," said the girl, abruptly. "You can stay here and amuse papa, so that he shall not suspect what occupies my time. You can divert his attention from Sanscrit and Arabic, and all these mysteries."

And, for the first time in his experience of her, Mary Monteagle laughed—a mellow, bird-like laugh.

"I will," said Mr. Crofton, heartily.

And so the compact was sealed between them.

Instead of the week he had promised his father to spend with old Col. Monteagle, the sojourn was extended to three.

At the end of that period, he gravely addressed himself to the dark-eyed daughter of the house.

"How is the trade?" said he.

"I am to have a machine next week," said Mary, with the conscious pride of one who has conquered fate; "and then—only think of it, Mr. Crofton,—I shall earn a dollar a day!"

"Mary" said Mr. Crofton seriously, "I have been thinking of another plan for you. You tell me that this farmer's wife has made a first-class housekeeper of you."

"I baked mince pie yesterday!" said Mary, exultingly; "and I quilted a quilt, and made soft soap within the week!"

"I don't like the idea of your going into a factory," said Mr. Crofton. "Suppose now, by way of variety, you were—to marry me?"

"But you're not in love with me!" said Mary, opening her bright, black eyes.

"But I am," said Mr. Crofton, with great gravity. "I have deliberately made up my mind that I can't be happy without you. And although I don't profess to be a rich man, I believe I can make you a better allowance than six dollars a week, while at the same time you will not be compelled to work ten hours a day for it. That is the business-like view of the question. Now on to the more personal one. Don't you think, Mary, that you could love me? Because I love you very much indeed!"

"I—don't know!" whispered Mary; "I might try!"

And then she blushed charmingly.

So Col. Monteagle's daughter went to the fair Floridian plantation, on the shores of the river St. John's, and astonished everyone there with her thorough knowledge of housekeeping in all its details. And the two old people, with their burden of insolvency and care lifted off their lives, dwell quietly on, and talk to everybody who crosses their path of "the excellent marriage which my daughter Mary has contracted."

"A thorough scholar," says Col. Monteagle, with dignity. "A musician, a linguist, a thorough Hebrew student, and a proficient in Latin and Greek. I myself was her instructor. It is not singular that a girl of such intellectual power should marry well."

But Col. Monteagle, honest man, never dreamed that it was the sewing machine and soft soap, the *mayonnaise* dressing and the vehement struggle to get free from debt, which conquered Mr. Crofton's heart. There are plenty of scholars and poetesses in the world—but a really womanly woman—is not her price far above rubies?

Light from Africa.

[Written for the PRESS, by MRS. C. I. H. NICHOLS.]

Verily, I thought my vocation gone. But no, the Egyptologists have illuminated "demotic script" of ancient Egypt, and the revelations of woman's rights in the buried ages, have revived brother Berwick's fears for the "masculine prerogative." I must needs obey the spirit that moves me to console and reassure him. He is not a child that I should coax him; or a sneak and a coward that I should worry him; but a man to be reasoned with, a man brave enough to say wholesome, though unpalatable things, over his own name, and, however hardly I may press him, I honor him more. Now, what is this that has so disturbed him? Simply that there was a place where, and a time when, men occupied the same relation, substantially, to their wives in personal and property rights that the mass of wives in these United States occupy to their husbands in the 19th century. Brother B. says: "The infatuated husband having *accepted* a wife on trial for one year, at the end of that year, if the wife proved acceptable, *established* her as his wife for life, and made over himself, his goods, chattels, lands and cash to her, merely stipulating that she should bed and board, embalm and bury him." Aside from the provision for the burial of his defunct person and the absence of any dower right in case of his wife's decease first, the condition of this Egyptian husband was the exact counterpart of a wife's, under the "English Common Law," which, 50 years ago, was the law of marriage in all the States, excepting Louisiana, and is still the law in most of the United States for wives who had no property at marriage, and have neither inherited nor acquired any by gift or devise since. In his provision for burial, the Egyptian husband had the advantage of our wives. I have seen reports of two cases within the last three months, in which the widow's right of burial in the burial-lot belonging to the estate of her husband was denied by the courts—"the lots belonged to the heirs." The widow's use of one third of the real estate being a "life interest," couldn't be allowed to a dead widow—no, not so much as 6x2 ft. of it!

Another essential difference between our civil marriage and the demotic marriage under consideration, is the fact that in the latter the husband voluntarily assigns his person, his effects and belongings to his wife, after a year's trial of her fitness for the trust; while in this country the effects, belongings and person of the wife are made over to the husband, without trial, bond or guaranty of fitness, by laws enacted by men only. An unmistakable advantage of these demotic marriage contracts over our civil marriage—an advantage of equal value to both parties—is their amendability by the parties themselves. As reported by Bro. B., there is nothing in them to prevent the wife from making the most generous provision for the needs and pleasure of her husband. And the simple fact of a voluntary surrender of property to the wife, as shown in the endowment scripts quoted—after a year's trial of her fitness to discharge the trust worthily—suggests that the women of that ancient period and people had proved themselves not less fond and faithful than the women of to-day; and also entirely discredits his conclusion that the male biped of that age had less manly vigor and virtue than the smirking "bipeds of to-day, who, unshamed, are content to continue the husband's ownership of his wife's wardrobe, because, forsooth, they are too slothful or too cowardly to repeal laws which their predecessors were mean enough to enact—predecessors who, after consigning the wife to legal nudity, and, further, securing to the husband the use and disposition of her earnings and savings, have made it unlawful for him to make her a gift, large or small, as against heirs or creditors. When the men of to-day purge themselves of the unmanly distrust which prevents them from measures of simple justice and decent respect, in their legal relations with women, they may rank with the Egyptian husband in marital considerateness, acquired, as his must have been, from a generation of women rich enough and unselfish enough to set him the example. Cause and effect, how clear! If, in her legal pauperism, the wife of to-day has been able to bring so much content to the heart and home of man, with or without his aid, is it not possible that, as joint partner in the use and disposition of their community savings and earnings, she would so apply them as to develop in him a generosity equal to the chivalrous Egyptian's, who, in giving *all* to the wife, proved himself noble enough to "share and share alike" with her in "the community fund."

Other questions are raised in connection with this demotic marriage; and first, what of the laws of succession of heirship? Did the sons of the married pair inherit from the mother? If not, how did the husband become possessed of the goods, chattels, etc., with which he endowed his wife? These men could not have received property from pauper fathers, nor acquired it in trade or labor, or in warring with surrounding tribes and nations, if, as Bro. B. concludes, "they were so sunk in sloth and cowardice as to have entirely lost all manly vigor and virtue, and have become an easy prey to a hardier and more masculine race, before the women thus almost entirely usurped the man's place." The inference is natural that they inherited not only property, but absolute faith in womanhood from wise, gentle and thrifty mothers. That, except when debarred by special contract, as in one of the cases under consideration, children inherited from both parents, may be inferred from the deed of Pchelchon to Neschons, his accepted wife. He says: "Neither son nor daughter has any concern in this deed. It is for me to protect thee against claims of theirs." And he does so by simply adding: "Take, therefore, this surrender of my property forever." Possibly Pchelchons was a widower, with grown-up children who had offended him, or were disposed to make trouble for a step-mother; or for whom he had already provided by a generous settlement. Brother B. is certainly unhappy in his choice of words when he speaks of women as "usurping" a position which they had been "accepted" for and "established" in, as he tells us, after a year's trial of their fitness for its obligations and duties. Such a view of the subject is equally irreconsilable with his representation of the man as "making himself over" to the acceptable wife.

He also passes without comment what, to my mind, is the only objectionable feature of these marriage contracts—the initial years of trial—which the will of the man might convert into a mere free love episode by declaring the candidate not acceptable. What sufficient offset was there, what recompense could there be for the chagrin, perhaps disappointed affection and other embarrassing results—to the wife that was no wife—of this probationary companionship? The possible children of these parties and their legal status—what of them? I am reminded of a picture of poor "Hagar in the Wilderness," with a jug of water in one hand and little Ishmael in the other, over which I shed many a childish tear and imbibed a distrust of patriarchal piety, which, even at this late day, prevents me from throwing stones at the irreverent Ingersolls, whose religion, if not of the Christ type, is something more akin to it than patriarchal humanity.

To Brother B.'s concluding paragraph, I will only say that I have become very tired of his kind of "protection." Woman suffragists may well be distrustful of the "chivalrous spirit" that protects single women in "their right to earn an honest livelihood," and withdraws that protection from the same woman when she marries. It looks too much like raising geese for the chance of their feathers when grown. It is a pity though that he cannot feel the compulsory pauperism of American wives as keenly as he does the voluntary impecuniosity of Egyptian husbands in the long ago.

A TELEGRAPH STORY.—One of the operators in the Western Union office at Boston had an epileptic fit. His medical attendant spoke to him, chafed him and made every effort to arouse him, but in vain. Subsequently one of his fellow-operators drew a chair up to the bed, and took the patient's hand in his. As he did so, he noticed a feeble pressure by the fingers, which pressure presently resolved itself into dots and dashes, faintly communicating to the tactile sense the words: "W-h-a-t d-o-c-t-o-r s-a-y a-b-o-u-t m-e?" Asked whether he could hear what was said to him, the patient signified assent by a slight motion with the tips of his fingers, and the result was that his fellow-operator got from the patient enough dots and dashes to describe his feelings to the physician, who was thus enabled to apply the necessary remedies. It is certain that no other method of communication was possible under the circumstances, since the sufferer from epilepsy, although he could hear, could neither speak nor move any of his muscles, except those situated in the digital extremities, and those only with the faintest requisite in electrical communication.

The Folly of Girls.

A thousand times the old story, which had such a tragical illustration recently, has been told through the press and whispered in society, and still the lesson is not learned. A young lady, just out of the school-room, is fascinated by the attentions of a man of the world, and nothing can persuade her that he is not the noblest, the bravest, the best of lovers. What does she know, poor thing, of the secret lives of these gallant gentlemen? She reads the legend of excess and evil courses, written on the bleared eye, and tremulous lips, and she cannot understand it. She hears a whisper, perhaps, of scandalous prodigality and excess, and she shuts her little ears and loves her hero all the better as the victim of detraction. She knows nothing of his previous history, nothing of his daily occupations, nothing of his associates. She little imagines that his soft compliments conceal a cruel temper, and the hand that presses hers so tenderly is a brutal hand, fit only for deeds of violence. That he is a gambler and a drunkard, false, quarrelsome, idle, selfish and sensual; that he is at war with his parents and a tyrant in the company of others, she might learn if she would exercise as much caution in choosing a husband, as in choosing a bonnet.

The girl triumphs, of course, over father and mother. Those who really love her follow the wedding festivities with aching hearts, and watch the future with sorrowful apprehension. The inevitable sequel is not long delayed. For a few short weeks life is a dream of soft sentiment and new gowns. Then the truth begins to dawn upon the poor little heart. She has sold herself for a passing fancy. Neglect is soon followed by angry words and contemptuous looks and brutal jests. Her jewels are sold to buy bread, and he steals the money to spend it for drink. There is a hideous bruise on the white neck of which he used to say such pretty things. She shudders at the footsteps for which she once listened with rapture. She hides herself in terror from the face on which she thought she could gaze forever. Sometimes, with the courage which seems to be given only to certain women, she holds a proud and smiling face to the world, hides the brutalities of her master, covers up her hardships, dissembles hunger, and no one knows, except the husband, when she rests at last from her sorrows, that the brave heart was broken in the first months of the marriage. Sometimes the sad story ends in that common curse and punishment of American marriages, a legal separation, and sometimes in the one catastrophe which is worse than divorce—in murder.—*New York Times.*

Unhappiness.

[Written for the Rural Press, by A. E. T.]

What will make a home more unpleasant and disagreeable than a cross, jealous husband? Nothing; there is nothing in the world that will break a happy, united family sooner than to have a husband eternally finding fault with his wife. He is jealous if she happens to smile on a gentleman friend; he is cross if she does not do everything to please him, and the poor cowed wife is willing to do anything for the sake of peace, and to keep her children from harm. The man who is vile enough to say one word against his loving helpmate should not be allowed to call her by the sacred name of wife. There is nothing so holy as the relationship between husband and wife, and he should treat her as he has vowed to do at the altar. But the husband does not upbraid and abuse his wife before the world; oh, no, that would never do. He wishes to be thought a model husband by his friends. It is when she has no one to protect her, that he will drive her almost to death by his cold, brutal language. Is it any wonder there are so many delicate women in the world? Could any one look into their private life, and see the poor, heart-broken wife and mother, draging her dreary life out with the cruel treatment of her husband, they would say no. It is nothing less than slow murder, and he should be punished as a murderer; it should not be allowed. "Oh, the constancy of woman!" She will hide all her husband's faults if she can, and will stand more than her share of the burdens of life, and God knows, sometimes it is almost past endurance. Life seems a dreary waste, when such is the case, and death would be a welcome visitor. Mothers have stood everything for their children's sake. They have stood between them and the maddened father, and taken the abuse, ay, even blows, that were intended for the poor, little helpless ones; and, yet, what does it amount to in the end? What thanks does a woman get for her loyal deeds? This, and nothing more: When the world finds out that unhappiness exists in a certain family, they invariably say, "there is a woman at the bottom of it." Ah! so on through life, must the weaker sex take the blame of all things, whether they are blameless or not; while the stronger sex may pass through life sinless in the eyes of the community; but there is a higher judgment than ours; he will not pass the judgment of God as blameless as he does here. Is it not a husband's place to protect and care for his wife? To make her path through life as smooth as it is in his power to do so? Yes, and he is no gentleman that will not do it. Many and many poor, heart-broken wives, are crying and praying to be released from their over-burdened lives. They are not allowed to see the bright side of this beautiful world.

Tuolumne Co., Cal.

Young Folks' Column.

Our Puzzle Box.

Cross-word Enigma.

My first is in health, but not in youth;
My second is in love, but not in truth;
My third is in travel, but not in trip;
My fourth is in spank, but not in whip;
My fifth is in hang, but not in kill;
My sixth is in evil, but not in ill;
My seventh is in lie, but not in cheat;
My eighth is in mile, but not in feet;
My ninth is in mine, but not in farm;
My tenth is in cheek, but not in arm;
My whole is the name of a celebrated poem.

L. C. C., Calistoga, Cal.

Problem.

A gardener undertook to plant a number of trees at equal distances apart in the form of a square. When the square was completed, on his first trial, 11 trees were left. He then enlarged the side of his square by one, when he found 24 more trees were required to complete the square. How many trees did he have?

Word Square.

1. A mineral.
2. A valuable metal
3. Temper of mind.
4. Limits.

Melanchton.

Numerical Enigma.

I am composed of 13 letters.
My 4, 3, 3 is sick.
My 2, 11, 7 is a snare.
My 6, 4, 7 is to strike.
My 3, 8, 13 is to rent.
My 6, 1 is a personal pronoun.
My 13, 11, 12 is a number.
My 10, 4, 7, 11 is an extremely small quantity.
My 5, 1, 13 is to gain.
My 7, 4, 9 is a very valuable metal.
My whole has made great progress since the invention of the art of printing the great "art preservative of all arts."

Jerry.

Proper Names.

1. A fowl and a grain.
2. To search and a personal pronoun.
3. A testament and a tropical fruit.
4. A railroad carriage and a personal pronoun.
5. To be aware and an interjection.
6. To blacken by fire and a falsehood.
7. A month of the year.
8. To injure and a metal.
9. A bony covering of certain animals and to put on.
10. An ancestor and ourselves.

Aunt Sarah.

Answers to Last Puzzles.

Numerical Enigma.—Hail Columbia, Happy Land.

Letter Changes.—1. Bog, dog, fog, hog, log. 2. Bray, dray, fray, gray, pray, tray.

Charade.—Wed-lock.

Syncopations.—1. Bear, bar. 2. Time, tie. 3. Place, pace. 4. Burt, but.

Anagrams.—1. Petunia. 2. Heart's ease. 3. Violet. 4. Belladona. 5. Coriander. 6. Dandelion. 7. Anemone.

Easter Hymn.

[By "Gem," aged 14 years.]

Let your hallelujahs rise
To him who reigns above the skies,
He who died, the world to save,
Now has risen from the grave.

He has suffered death and pain,
Now he goes with God to reign,
Goes to reign with God above,
God of mercy, God of love.

He has risen from the dead,
Risen from his lowly bed;
Let the whole earth stand in awe
Of Him who reigns for evermore.

Stand in awe, but not in fear,
Feel him far, yet ever near,
Near with his protecting arm,
Near, to keep us from all harm.

Above us, being free from sin,
Above the world's loud noise and din;
But, though he reigns with God above,
He watches us with tender love.

Santa Cruz.

"Jip."

[Written for Rural Press by E. Freemont Wood.]

"—the poor dog, in life the firmest friend,
The first to welcome, foremost to defend,
Whose honest heart is still his master's own,
Who labors, fights, lives, breathes for him alone."
—*Lord Byron.*

I write of a most noble brute—a large, handsome fellow with well-shaped head and bright, intelligent eyes. In color he is that beautiful combination of black and white commonly called blue. Jip is the pride of his master and as obedient as a slave. At regular hours his meals are placed before him, and his long, soft hair is combed with as much care as a child's. A short time ago I spent an evening at the home of Jip's master, where I first formed the noble dog's acquaintance. Hearing his master's voice, he came bounding into the parlor as the door was opened by some one entering. At a word, he sat up and extended his paw to "shake hands."

"Now, Jip," said his master, "go, close that door."

The knowing dog turned, walked slowly back to the door, reared upon his hind feet and placed his fore paws against it, closing it effectually.

A handkerchief was then dropped upon the floor, whereupon the dog seized it and returned it to its owner.

Next, a chair was placed before him and he told to get up and sit down in it. This he did, sitting down with his back to the audience. It was some time before his master could induce him to face the lookers-on, but he finally did so, and a clay pipe was then placed in his mouth, the bowl of which he suffered to turn downward in the true aboriginal style. A large hat, with a huge sunflower on it, belonging to a young lady of the family, was then placed upon his head. He seemed to have a just appreciation of the part he was acting, and sat perfectly still, with a sort of injured air, like a child that had been whipped and stood in a corner. Anon he would roll his large eyes up under the broad-brimmed, sunflower-bedecked hat in a manner—with all due reverence to Mr. Wilde—that was most esthetic.

Oakland, April 14, 1882.

Good Health.

Health in Town and Country.

An extended series of observations seem to have warranted two conclusions, both adverse to commonly received opinions:

1. There are more persons in lunatic asylums from the country than from the town.

2. The average of human life is greater in the largest cities, than in the country adjoining; yet farmers eat plain, fresh food, take abundant exercise, retire early, and get up by daylight, breathing the pure out-door air for at least half their existence. On the other hand, citizens retire late, rise late, eat food and fruits one, two, or a dozen days old; are in-doors three-fourths, if not nine-tenths of their time, breathing an air vitiated by furnace heat and a variety of other causes, and take comparatively little exercise.

It is practically useful to note some of the general reasons which may very rationally be considered as explanatory of such results.

The universal tendency of concentration of thought upon one subject is to monomania, madness. This is so palpable a fact that argument is not necessary. When, therefore, the subjects of thought are few in number, this same tendency exists. The weather, the crops, the market, are the idol trinity of most farmers; in a wide sense, they think, talk, dream about nothing else with any special interest; all besides is secondary, and if, by any novelty, the mind is compelled out of its wonted track, it soon relapses into the old tread-mill circle, into the same rut of ages gone. In great cities this destructive concentration is almost an impossibility; the morning papers, the prices current, the stock markets, the accidents, the wars of nations, the exhibitions of curious and stirring things, keep the mind on the look-out; in fact, almost too active; there is scarcely enough time for needed rest. The day begins with running over the state of the world, as exhibited in the newspaper. From nine until four the whole mind is absorbed in matters of business; from that until near midnight, there is a comparative abandon to dinner, to social ties, to giving or receiving visits from acquaintances, friends and kindred, in going to the concert, the lecture, the opera, to evening parties, or other sources of agreeable diversions or profitable intercommunications.

The farmer, glorying in his health and strength, thinks his constitution impregnable; scouts at method and system and precaution, considering them as nothing but doctors' whims and old women's notions. He believes in eating hearty suppers and late; he has done it all his life, and is not dead yet, and resolves so to continue until the end of the chapter, when some morning the news goes round, "Died last night" of apoplexy, cholera morbus, cramp colic, or the like. At other times, bilious fever carries him from health to the grave in 10 days, in consequence of going to sleep in the entry or on the front stoop after a hard day's work.

Farmers will become healthier in body and in mind, in proportion as agricultural papers are taken, for several reasons: These publications uniformly contain a large amount of unexceptionable family reading, as to health, temperance, and sound morals; they will also gradually waken up the mind of farming people to experiments, to what is often sneeringly styled "scientific farming." Every day the helter-skelter mode of agriculture is becoming less and less remunerative; every day it is becoming more and more necessary to study the laws of vegetable growth, the habitudes and needs of plants and grains and trees; and in proportion as this is done, and the analysis of soils becomes an indispensable pre-requisite, there will be a world of novelty and light to break in upon the farming mind, to interest, electrify, and enrich.

The time will come when, to attempt the successful management of a farm, large or small, without some considerable practical knowledge of chemistry and botany and geology, will be considered the extreme of Quixotism. Meanwhile, let farmers and farmers' wives, with their children, bear in mind that to diminish the chances of a dyspeptic or bilious madness, or a premature death from acute disease, they should practice habits of personal cleanliness and bodily regularity; should eat only at regular hours and never between meals or after sundown, eat slowly and of plain food; avoid damp clothing and cold or wet feet, and cultivate a cheerful spirit, a courteous temper, and a loving, generous heart.

Expectancy of Life.—The chances of life have been carefully studied and tabulated by life-insurance men, and, barring accidents, seldom prove misleading. The life of an ordinary man or woman is about as follows: A person of 1 year of age may expect to live 39 years longer; of 10 years, 51; of 20 years, 41; of 30 years, 34; of 40 years, 25; of 50 years, 21; of 60 years, 14; of 70 years, 9; of 80 years, 4.

Domestic Economy.

Egg Balls for Soup.—Egg balls to be served in soup make a welcome addition to a plain beef or mutton soup: Boil four eggs hard, say for 10 minutes, then put them in cold water; when cold cut the yelk soft with the yelk of one raw egg, and one teaspoonful of flour; add pepper and salt and some bits of parsley. Make in the shape of balls and drop them in the soup; let them boil for about two minutes. The whites of the eggs can be used to garnish a platter of cold meat for supper, or may be chopped fine or be added to the soup.

Liability to Infection.—A man wearing dark clothes is more liable to infection from contagious diseases than he who wears light-colored garments, because particles which emanate from diseased or decayed bodies are much more rapidly absorbed by dark than by light fabrics. This is easy of proof. Expose a light and dark coat to the fumes of tobacco for five minutes, and it will be found that the dark one smells stronger than the other of tobacco smoke.

Apple Omelet.—Apple omelet to be served with broiled sparerib or roast pork is very delicate. Take nine large, tart apples, four eggs, one cup of sugar, one tablespoonful of butter; add cinnamon or other spices to suit your taste; stew the apples till they are very soft; mash them so there will be no lumps; add the butter and sugar while they are still warm, but let them cool before putting in the beaten eggs; bake this till it is brown; you may put it all in a shallow pudding dish or in two tin plates to bake.

Potato Cakes.—Potato cakes to be served with roast lamb or with game are made of equal quantities of mashed potatoes and of flour, say one quart of each, two tablespoonfuls of butter, a little salt and milk enough to make a batter as for griddle cakes; to this allow half a teacupful of fresh yeast; let it rise till it is light, and bubbles of air form, then bake in muffin tins. These are good also with fricasseed chicken; take them from the tins and drop in the gravy just before sending to the table.

Baked Ox Tongue.—Soak the tongue well in lukewarm water for about 12 hours, scrape and trim it, stick it over with cloves (about 24), and boil slowly, according to size, for two or three hours. Then take it up and brush it over with the yelks of two eggs and sprinkle it with breadcrumbs (six oz.). Next bake it to a good brown, basting it constantly with a quarter of a pound of butter. Put it on a dish, and pour round it half a pint of good gravy. Serve with red currant jelly.

White Candy.—White candy made from this recipe has the merit of being pure: One lb. of sugar, two-thirds of a tumbler of water, one teaspoonful of vinegar, a piece of butter the size of a walnut, half a teaspoonful of cream of tartar; boil for 20 minutes, without stirring. Pour on buttered plates to cool, then butter your hands and pull; have a little vanilla or lemon in a sauce plate, and wet your hands with it occasionally.

Rice and Apple Pudding.—Boil a cupful of rice for 10 minutes, drain it through a hair sieve until quite dry. Put a cloth into a pudding basin and lay the rice around it like a crust. Cut six apples into quarters, and lay them in the middle of the rice with a little chopped lemon peel, a couple of cloves and some sugar. Cover the fruit with some rice, tie up tight, and boil for an hour. Serve with melted butter, sweetened and poured over it.

Mending Lace Curtains.—Old lace curtains that have little holes in the netting can be made to appear whole when they are laundered. Take a piece of lace, or very thin muslin, and when the curtain is starched starch this piece also and put it over the spot which needs mending. It will show very little if at all, and the starch will keep it in place.

Black Lace, when rusty and limp, may be restored by the following method: With a gill of rainwater mix a teaspoonful of borax and one of alcohol; squeeze the lace several times through this; then rinse in a cup of hot water in which a black kid glove has been boiled; pull the lace out carefully till nearly dry; then press two or three days between leaves of paper under a heavy weight.

Scrambled Eggs.—Heat one cup of milk in a spider with a piece of butter, a little salt and white pepper; beat five eggs, pour in, set over a very slow fire, and keep scraping from the bottom with a spoon until very little remains thin; then s rape into a dish without delay, as allowing it to harden with whey spoils it.

Fried Potatoes.—Cut a quart of cold boiled potatoes into cubes, prepare three tablespoonfuls chopped onion and one of chopped parsley. Fry the onions till done in three tablespoonfuls of butter, then add the potatoes, season with salt and pepper. Stir gently with a fork so as not to break them. When heated through, add the parsley and cook two minutes longer. Serve on a hot dish.

Shiny Silk.—Sponge the wrong side with dilute alcohol or ammonia water, and press with a warm iron.

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SAN FRANCISCO:
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TABLE OF CONTENTS.

GENERAL EDITORIALS.—Originating New Varieties of Potatoes; The Kennel Surprised; The Butter Outlet; Stock Premiums at the State Fair, 305. The Week; California Sheep and Wool; Deeds of Gift Instead of Wills, 312. The State Bag Factory; McLean's Grain Saving Attachment; Notes on Shasta County, 313
ILLUSTRATIONS.—The Puppies' Puzzle, 305 McLean's Straw Agitator and Grain-Saving Attachment, 313
CORRESPONDENCE.—Mount Diablo Valley; A Steam Spader; Notes on Farm Economy, 306
HORTICULTURE.—Pickling Olives and Olive Oil; Notes on Vine and Tree Planting, 306
SHEEP AND WOOL.—California and Foreign Merinos Compared, 307.
THE DAIRY.—Beet Growing in Humboldt County, 307.
AGRICULTURAL ENGINEER.—Results of the State Engineer's Irrigation Surveys, 307.
AGRICULTURAL NOTES, from the various counties of California and Nevada, 308-9.
PATRONS OF HUSBANDRY.—Wheatland Grange and the Debris Question; Co-operation at Lodi; A Vote of Thanks, 308.
ENTOMOLOGICAL.—Kerosene Butter: Bitumen as an Insecticide; How to Destroy the Apple Caterpillar; An Entomological School; Canker Worms, 312.
HOME CIRCLE.—Beautiful Things, (poetry); Life the School of Manhood, (poetry); A Man That Succeeded; Light from Africa; The Folly of Girls; Unhappiness, 311
YOUNG FOLKS' COLUMN.—Our Puzzle Box; Easter Hymn, (Poetry); "Jip," 311.
GOOD HEALTH.—Health in Town and Country, 311
DOMESTIC ECONOMY.—Egg Balls for Soup; Liability to Infection; Apple Omelet; Potato Cakes; Baked ox Tongue; White Candy; Rice and Apple Pudding, 311.

Business Announcements.

Agricultural Machinery, Marcus C. Hawley & Co., S. F.
Castor Rolling Colter, Manny M'f'g Co., St. Louis, Mo.
Siegler Springs Hotel, John Spaulding, Lake Co., S. F.

The Week.

All accounts of what all eyes have seen go to confirm the conclusion that California was never handsomer in field and orchard than at the present time. The prolonged chill and drouth of the early winter effectually checked vegetation, and the landscape was bare and dreary. Then came the rain and the warm sunshine, and, as if by magic, the green covered the hillsides, the fields and the roadsides, and the many hues of blooming fruit trees transformed the orchards into solid acres of bouquets. Those who have known the country for years have pronounced the change, in its rapidity and completeness, the most wonderful and beautiful they ever beheld. And the State is putting on her best attire for industry as well as for esthetics. The preparations for haying and harvesting and arrangements to handle the orchard and vineyard products are filling the time of all the workers. The fruit rejoices still in immunity from heavy frosts, and the grain has escaped prolonged northers, though some blasts of short duration have drawn upon the moisture. The outlook is a fairly good one on the average, and in some respects most promising. As we write the mingled rain drops and sun rays insure the growing weather which is so delightful to the farmer's heart.

California Sheep and Wool.

Readers who are interested in the golden-hoofed animal will not overlook the letter on the characteristics of California Merino sheep, by Mr. Peet, which we print in another column of this issue. Mr. Peet is one of our leading breeders, and has had a life-long experience with sheep here and in Vermont. The claims for excellence which he makes for California Merinos are worthy of attention, and the statement of them will be of direct benefit to our breeding and wool-growing interest. The facts should be duly recognized in Australia, for if the wool growers there learn that they can get an animal here better suited to their needs than they can get at the East, they can save themselves much expense for the first cost and transportation, without speaking of the results which will follow the choice of thoroughbreds of the California type. The fact is, there is not half enough said about California sheep and California wool, and if our readers in that interest would communicate their successes and failures in all departments of sheep husbandry, the benefits would be general and wide-reaching.

California is still recognized as the source whence sheep can be best drawn for peopling the ranges of the Rocky mountain States and Territories. For several years the eastward movement of our sheep by rail and on foot has continued, and yet large bands are still being taken. The Kern County *Californian* says: "Vast numbers of sheep have been bought since last fall, and are still being bought, in this county, by buyers from the Territories. The prices paid have generally been fair, all considered, and they would have been better but for an extraordinary drouth that has prevailed over a wide area on the east side of the Sierras that renders driving to the place of destination a difficult and dangerous operation. Such occurrences, however, are rare, and a similar cause for the depression of prices may not be anticipated another year. Many of our sheepmen who own no land, and had no means to provide feed against times of scarcity, have sold out entirely, but those who remain in the business are now generally provided against such contingences, and it is now on a good and safe footing."

This is a fortunate tendency in affairs. The time has certainly come when the sheep grower must be provident, and our wool product will certainly be improved if the sheep are better kept. There must be arrangements made to maintain the sheep during scant times in the pastures, and the providing of pastures which will yield better wool than the natural dust beds of the plains is also a matter deserving more general attention. The extension of the alfalfa area, owing to new irrigation enterprises, is becoming a great factor in the improvement of our wool product. The wool of the upper San Joaquin country is improving in quality as well as in quantity. A considerable part of it is produced on inclosed alfalfa pastures, and is clean and of a superior grade. This proportion will increase year by year, as great efforts are making to extend the area of these pastures, and sheep raising is the industry best able to endure the extortionate railroad charges.

The market for the better grades of the spring clip is promising. There is considerable interest manifested by buyers and we hear of their incursions in the remote parts of the State. It is probable that the amount clipped this spring will be comparatively small, because of the hard character of the early winter in the southern part of the State, the movement of sheep out of the State, and for other reasons. We notice that the Los Angeles *Mirror*, having conversed with several wool growers and dealers, concludes that this year's product will be about from two-thirds to three-fourths that of last year in quantity. It also says: "The crop of next year will also be light, owing to the fact of a light increase in the flocks that abide with us and which did not succumb to the hard fare of the early winter. The late and beautiful feed of the present year, and a favorable grass crop next winter, will replenish our decimated flocks, and 1884 will see us full-handed again in sheep and wool." These remarks will apply to a considerable area of the State.

AUSTRALIAN WHEAT CROPS.—The shipment of California wheat to South Australia, which we noted last week, calls forcibly to mind the fact that the wheat crop in that colony this year fell far below the average. It is also stated that in New South Wales, a commissioner of the Sydney *Mail* had arrived at the conclusion that in no instance this year will the crops of any district south yield as great averages as those which were obtained from it last harvest. The want of rain in the winter retarded plowing and consigned several districts to late sowing, and as the early-sown crops missed the winter moisture also, both early and late will be rather below the mark.

THE CENTRIFUGAL CREAM SEPARATOR.—It is reported from Germany that the centrifugal cream-skimming apparatus has hitherto answered very well. The skim milk retains a very sweet and agreeable flavor, and suffers no loss of conservative properties, although it appears to be very thin and watery. The apparatus was displayed at the Konigsberger dairy show, and was greatly admired.

ENTOMOLOGICAL.

Kerosene Butter.

This is not a new abomination to startle our dairymen, although the name has a sort of consinship with the grease compounds which vex the butter maker. Kerosene butter is an insecticide, and its history and uses are as follows: C. V. Riley was in Florida a few weeks ago, and while there proved the accuracy of Mr. Ashmead's discovery, that the red rust on the Florida orange, which so depreciates its price, is caused by a mite. There can be no possible doubt about it. Prof. Riley has seen them on the leaves and fruit, and can tell their presence on a tree by the appearance of the leaves, and without the use of a microscope. It is a minute insect that produces decay and discoloration. A peculiarity of it is that it works in the shade, and that fact accounts for the peculiar oval shape of the discoloration seen on most of the fruit. The remedy for the mite is the real discovery of value made this season. Mr. H. G. Hubbard, of Crescent City, has been for many months making experiments under the direction of the Department of Agriculture, and has been eminently successful in perfecting a remedy which Prof. Riley is sure is a perfect antidote to the mite and scale insect. It consists of an emulsion of kerosene and milk. This is churned into a sort of kerosene soft butter, which, when diluted with water, is sprayed on the trees, and is certain death to the scale insects and the rust mite. The remedy is cheap and available. Almost anyone having the formula can make it, and improved apparatus for economically and efficiently spraying it is already perfected. It is probable that the demand for the butter will become so great as to make its manufacture a distinct industry. Prof. Riley intends to embody the results of his investigations fully in a special report, which it is believed Congress will order printed for general circulation in the orange-growing sections of the Union.

This is an interesting statement, and may be suggestive to our fruit growers in fighting the red mite and the scale insects. As the matter now stands in this State, kerosene is in bad odor, because of the large numbers of trees injured by its use.

Canker Worms.

It is reported from the interior of the State that in orchards—especially apple—infested by the canker worms last year, they appeared last week in immense numbers, and threaten the destruction of the coming crop. The trees and foliage infested by these pests should be washed (sprayed) immediatey with the whale-oil soap and sulphur mixture, one lb. of the mixture to each one and one-half gallons of water used, or one lb. of home-made soft soap and one-fourth of a lb. of sulphur to each one and one-quarter gallons of water used. Well-made soft soap contains about nine lbs. of lye, 45 lbs. of grease and 46 lbs. of water to each 100 lbs. of soap. The canker worms hibernate in the ground around the bottom of the tree. The females are wingless, and when freed from the pupa-case creep up the tree to deposit their eggs, which may be found on the branches, especially in the cavities formed by the new growth from the main branches. The young, when hatched, are less than one-sixteenth of an inch in length, but grow very fast, and in a very short time destroy the foliage on the tree. The caterpillars of these species of canker worm are from one inch to one and a quarter inch in length, and are called leapers, or geometers, from the peculiar gait they assume when traveling. The variety of apples most infested with these pests at present is the yellow Newtown Pippin.

Bitumen as an Insecticide.

We read in our last English exchanges that the harassed wine growers of France are casting a wistful eye to Judea for help. M. Abria had addressed to the Academy of Science a communication to the effect that he had discovered in a Persian narrative of travels in Syria and Palestine two passages relative to the effects of bitumen as a preservative of trees against the attacks of worms; and this evoked from M. Dumas the statement that the French Consul at Jerusalem had forwarded a small barrel of the identical substance to the Academy, and that the analysis would presently form the subject of a communication, and "justify, in a certain measure, the confidence reposed in it by the inhabitants of Palestine as an insecticide." This bitumen is found on and near the shores of the Dead sea. The abundance of asphaltum (which is a form of bitumen) in this State may give some of our fruit growers a hint for experiments. We shall look out for the full report of the French investigations as to the efficacy of the material.

How to Destroy the Apple Caterpillar.

After trying everything that I could think of, everything everybody recommended, and all failing, I have adopted the following successful mode of fighting the apple geometer, or measuring worm: Make a little cone of earth round the tree, six inches high, and as steep as possible; cover this with dry, fine lime, smoke the trees with burning straw, and then, at once, have the limbs, beginning at the top, struck with a stick well covered with cloth. When all the worms are sent to the ground they will stay there; they cannot climb over the lime. The lime may remain, and will prevent all worms from ascending the tree during the summer, and will ultimately make a good fertilizer. —W. W. BRIER, Centerville.

An Entomological School.

The Paris municipality has granted a plot of land at the park of Montesouris for a school of insectology, to be founded by the Central Society of Agriculture and Insectology, and to comprehend a museum of useful insects, auxiliary insects, injurious insects. An experimental apiary has already been constructed, and this is being supplemented by a silkworm nursery and mulberry plantation. The Prefect of the Seine is about to ask the Municipal Council for the necessary building funds. It is proposed finally to add a collection of insectivorous mammals, birds and reptiles, and to institute lectures, conferences and periodical exhibitions.

Deeds of Gift instead of Wills.

Those who wish to be sure that their property will go, after their death, to the ones they desire, should not make wills which involve going through probate and many legal expenses. They should make deeds of gift, which they must personally deliver to the wife or other person to whom they wish the property to pass. We have repeatedly called attention to this matter before, but almost every week our attention is called to cases where the making of deeds of gift before death would have saved hundreds of dollars in money, and in some cases, almost untold annoyance and delay in probate. Were all lawyers good probate lawyers, widows and devisees would not be so much harassed; but the widow entrusts her probate business to the first lawyer mentioned to her, or to some one whom she happens to know; and as probate proceedings are at best but a complicated system of red tape, lawyers thoroughly familiar with every detail are scarce. Probate business has, therefore, to be repeated two or three times. Deeds of gift render all probating unnecessary, and involve an expense not to exceed four or five dollars. They place the devisee in immediate possession of the property, too. The following is the legal form of a deed of gift:

Blank Form of a Deed of Gift.

[Blank Published.]

This Indenture, made the *thirty-first* day of *April*, in the year of our Lord, one thou and eight hundred and *seventy-four*, between *James A. Clayton*, of the county of *Sierra* State of California, the party of the first part, and *William Clayton, his son*, of said county, the party of the second part, witnesseth:

That the said party of the first part, for and in consideration of the love and affection which the said party of the first part has and bears unto the said party of the second part, as also for the better maintenance, support, protection and livelihood of the said party of the second part, does by these presents give, grant, aliene and confirm unto the said party of the second part, and to his heirs and assigns forever, all—

[Description of Property.]

Together with all and singular tenements, hereditaments and appurtenances thereunto belonging, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof.

To have and to hold, all and singular the said premises, together with the appurtenances, unto the said party of the second part, his heirs and assigns forever.

In witness whereof, the said party of the first part has hereunto set his hand and seal, the day and year first above written. JAMES A. CLAYTON, [L. S.]

Signed, sealed and delivered in the presence of
WM D. BLISS,
D. D. CARDER.

This should be acknowledged before a notary, as in the case of other deeds.

SOAPSTONE AND FERTILITY.—At the meeting of the Academy of Sciences on Monday evening, a large piece of soapstone from Elko, Nev., was also exhibited, and it was explained that the analysis of a Miss Ara Sessions of the University proved the mineral to be an essentially aluminum magnesium silicate. An extraordinary property of the soapstone is that it becomes of a gelatinous character upon the addition of water, and while it swells by such application, no amount of water can dissolve it. Prof. Hilgard had discovered the mineral in Mississippi, and ascribed the fertility of the land to the water-absorbing quality of the soapstone, in turn to be abstracted by the plant. In the manufacture of soap the mineral also makes a ready combination with water, and, unlike talc, leaves no precipitate, or at least an inconsiderable one of only 5%.

THE first freight received on Wood river, I. T., this season, came in April 11th, from Kelton. There were two wagons drawn by eight horses, carrying four tons. The teams were only fourteen days on the road, including nearly three days delay at the crossing of the Snake river. All the stage roads to Wood river are lined with people coming in on foot, horseback, in wagons, and every possible way.

PETE LIVINGSTON, who was lately hauling 40 kegs of powder and other goods from Prescott, A. T., to the railroad, unintentionally ignited the powder from his pipe which resulted in blowing his wagon to smithereens, but not fatally injuring him.

ABOUT six ft. of ice and snow, says the Winnemucca (Nev.) *Silver State*, still covers the surface of Donner lake. By sinking shafts through this, to the water, some very large trout are caught, some weighing 12 lbs. They are hungry, and bite with exceeding avidity.

SOME prominent citizens of Chico, are discussing the project of building a narrow-gague road from that place to the Sacramento river, to furnish better facilities to farmers and horticulturists to get their produce to this market.

The State Bag Factory.

Work was begun last week at the new bag factory at the State prison, San Quentin. The warden, Mr. Ames, has secured 500 lbs. of jute seed from India which he will distribute to all who wish to try the growth of the plant. The present expectation is that California cannot only make the bags but can grow the fiber, and anyone desiring to plant jute, to test it as a crop, can obtain the seed by application to Warden Ames, San Quentin.

A resident of Napa who lately visited the State prison gives the *Register* the following account of his observations:

The fiber used at the prison is imported direct from Calcutta. It is quite coarse, is six or eight ft. long, and is tied up in bundles, each of which weighs about 400 lbs. Before it is ready to be woven into cloth it passes through several complicated machines, which reduce it to the fineness and softness of silk, yet when spun into yarn, it presents that coarse appearance all are familiar with who are acquainted with burlaps. There are 100 looms in the factory, besides spinning and other machines, all of superior quality and of marvelous workmanship. Only a portion of the looms are at present used, 115 convicts, 4 skilled foremen and 24 freemen being employed in running them. As soon as practicable all the looms will be put in operation, when about 400 men will be employed in the factory. There being but few workmen in the State skilled in weaving jute cloth, several Chinamen, who formerly worked in the Oakland jute factory, are and will be employed until the convicts are instructed in the workings of the machinery. As a matter of course the employment of these free Chinese has excited much opposition from various quarters, but it is the intention of Warden Ames to keep them only so long as is necessary for the instruction of others, when convicts only will be employed. Fifty thousand sacks per day will be manufactured when the works shall be run to their full capacity. After the cloth is woven it passes over and under a series of large rollers—termed a calendar—which exerts a pressure of 600 lbs. to the square inch, making the fabric more pliable, at the same time stretching it at the rate of one yard in ten. Then after passing through a finishing machine, it is run through a cutter, where revolving knives rapidly clip the cloth into suitable lengths for bags. These will all be sewed by hand in the best manner.

The opposition encountering the establishment of this factory has been principally by parties interested in the Oakland jute factory, but such jealousy is needless. It became evident to the authorities that when the system of contract labor should cease (December 31, 1881), that a large number of prisoners would have little or nothing to do. After much consultation, it was decided to inaugurate the manufacture of burlap sacks, as that industry would interfere less with the industry of the free laboring men throughout the State than any other. Present appearances indicate that the plan was a wise one. There is little fear that the State factory will injure the trade of the one in Oakland, for both together cannot begin to supply the yearly demands, which amounts to about 30,000,000 sacks. The annual production of the Oakland works is about 3,000,000.

Artesian Wells in Tulare County.

Since the stroke of Page and Morton last fall, the boring of artesian wells in Tulare county has proceeded rapidly and many gratifying results have been gained. The last issue of the Visalia *Delta* contains items of at least three wells, two of which were very successful and the third promising. One case is that of D. O. Harselson a few miles west of Tulare city. The record of this boring is as follows: For the first 30 ft. it was a bed of dry sand, and then sedimentary deposits to a depth of 200 ft.; then yellow clay and alternate layers of sand to a depth of 325 ft.; then solid blue clay to the depth of 374 ft.; then a stratum of sand 18 inches thick, with a flow of water of about one-fourth of an inch over the top of the pipe; blue clay again to the depth of 381 ft., with an additional flow of water, in a stratum of sand one ft. in depth; blue clay to the depth of 390 ft., and a still larger flow of water in a bed of sand, then blue clay to the depth of 394 ft., when, says our correspondent, the largest flow in the San Joaquin valley was obtained, rising over the pipe 4½ inches. The well was bored by B. F. Mull, under the superintendency of Mr. Pitcher, a practical well borer. The entire work was done in the short space of 15 days.

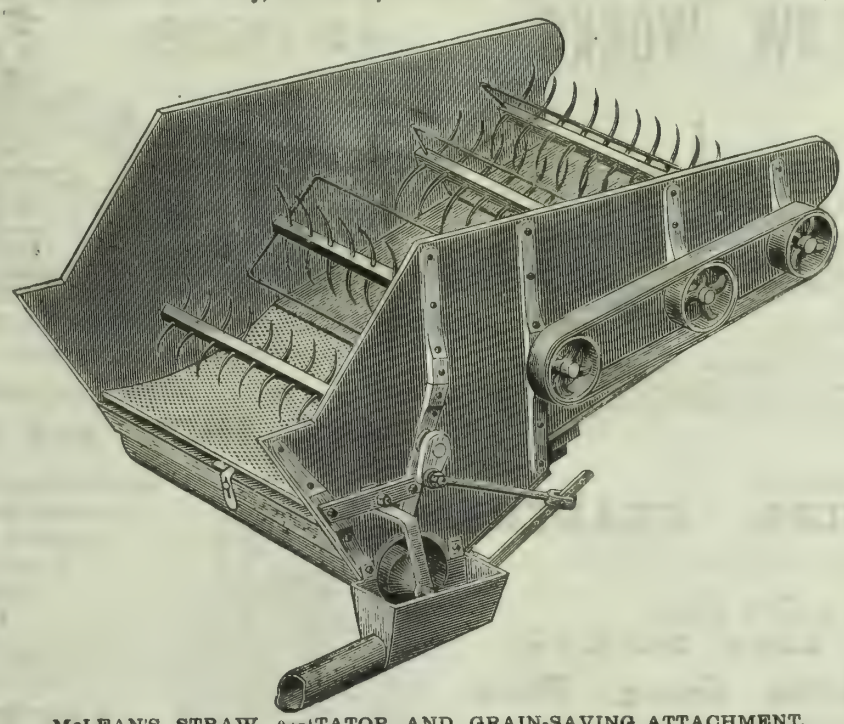
Another piece of successful work is that of Clendenin, boring an artesian well for T. J. Mitchell, two miles west of Tipton, struck a flow of water at a depth of 281 ft., but as the flow was small Mr. Mitchell had him bore further. On the 17th ult. they had reached a depth of 312 ft., and were in blue clay. At a depth of 297 ft. they found petrified fish bones, and wood, also a vein of coal. Still lower an excellent flow of water was obtained.

The result of all this successful well boring will be the rapid advance of Tulare county in the higher agricultural arts and the clothing of the country in perpetual green.

McLean's Grain-Saving Attachment.

We give on this page an engraving of a device of which we have received many good accounts from those who saw it in operation at the last harvest. It is an attachment, as is seen in the engraving, which manipulates the straw just before it goes over the end of the straw carrier. It is styled McLean's Straw Agitator and Grain-Saving Attachment. The agitator consists of three beaters situated near the end of the straw carrier, and worked by a two-inch belt. The straw, after it leaves the machine, is taken by these beaters and "agitated"—that is, the beaters, being constantly in motion, beat upon the straw as it passes over the carrier. The long straw is carried over, and the shorter straw, chaff and grain fall down on a sieve, which, by means of a crank, is kept in steady motion. The grain falls through the sieve into a semi-cylindrical box, and the chaff and straw work over the sieve and fall to the ground. In the apartment in which the grain falls, works a "worm," which forces the grain out into a shute, down which it passes into the main elevator, and from thence is carried on to the shoes, and the grain passes finally, with the other grain, out the grain shute. The attachment is simple, small and compact, and works easily. The beaters extend across the carriers, and though apparently weak and small, do their work effectually.

This device was used by W. H. Rowe on one of his threshers last summer, and it was favorably regarded by a large number of his patrons, who have united in a formal testimonial to its merits. The editor of the Watsonville *Pajaronian* was present upon one occasion when tests were made of its efficacy, and his report



McLEAN'S STRAW AGITATOR AND GRAIN-SAVING ATTACHMENT.

was as follows: "While we were watching the attachment, Charles Knapp and the writer fastened a sack into a slide of the shute down which the saved grain passes, and in 10 minutes saved a bag full of fine straw, chaff and wheat. Afterwards the mass was cleaned, and the result was six lbs. of wheat—wheat which without the use of this attachment would have gone over into the straw pile. Six lbs. of wheat in 10 minutes is the lowest saving yet made with this attachment, and twice that quantity of barley or oats has been and can be saved, the machines' loss on those grains being grater than on wheat. Six lbs. of wheat in 10 minutes is at the rate of 36 lbs. an hour, or about 450 lbs. a day, quite an amount (at least worth $5) to save in a day, and conclusive proof that the straw agitator and grain saving attachment is a complete success, and is something of great value to farmers. At a similar rate (and our estimate we are satisfied is low) one of those attachments would save $400 worth of grain in a season. This estimate is made on a wheat basis. On barley and oats it will save about twice as much. The time when we made the above experiment was the worst in the day to show up the saving qualities of the attachment, as it was in the middle of a hot afternoon, the straw was dry, and a smaller percentage than usual of grain was wasted; further, the machine was one that is noted for its small percentage of loss. In the morning we are satisfied the attachment would have shown a better record. But as it was the record was flattering to the attachment and satisfactory to the inventor."

During the coming harvest Mr. McLean's attachment will be used in different parts of the State, as he has received orders from threshermen who have heard of its work. Any further information which may be desired may be had by addressing N. McLean, Watsonville, Cal.

THE Senate has confirmed the nomination of Edward F. Burton, as Superintendent of the San Francisco Mint.

Notes on Shasta County.

A number of enterprising residents of Shasta county have organized a county irrigation association, with headquarters at Redding. The following are the officers of the society: C. C. Bush, President; W. A. Smith, Vice-President; S. J. R. Gilbert, Secretary; Frank Miller, Treasurer; Executive Committee, C. C. Bush, H. F. Johnson, S. J. R. Gilbert, D. Breslauer, Dr. J. H. Miller.

The association has now in mind the preparation of a number of township maps, and will furnish any and all information they possess regarding government or railroad lands, or private lands that are for sale, to parties desiring to settle in the county, free of any charge whatever.

We have just received a copy of a neat little pamphlet entitled "Descriptive Circular of Shasta County," which has been published for general distribution. In addition to general matters pertaining to the county, there are paragraphs descriptive of the several villages and settlements, which will be found of interest to the intending settler. They are too long for reproduction in our columns at this time. We take pleasure, however, in reprinting some paragraphs of general description, and those desiring fuller information can correspond with the association, at Redding, Cal.

Shasta county is situated between parallels of latitude 40° 20′, and 40° 15′ north, and longitude 121° 20′, and 123° west, in the northern part of the State—being separated from Oregon by the counties of Siskiyou and Modoc—by which counties it is bounded on the north, on the east by Lassen, on the south by Tehama, and on the west by Trinity. The Sacramento river runs through the county from north to south, there being about two-thirds of its territory on the east side, and one third on the west. The extent of the county is 2 500,000 acres. Of this the Government Land Office estimates that there are 2,000,000 acres unoccupied. The Surveyor General's report for 1881 shows only 143 339 acres inclosed, and less than 50,000 acres under cultivation. While there is a large area of rough and mountainous land, we are convinced that on the east side of the Sacramento river alone there are 200,000 acres whereupon the agriculturist and horticulturist can make desirable homes. On the west side there are, at least, 50,000 acres more, and in the northern and northwestern 30,000 additional, leaving a vast extent of territory for the sheep, stock, lumberman and miner.

Adaptation to Cultivation.

Every agricultural product that can be grown in the valley, including the semi-tropical fruits, can be grown with equal facility in the foothills. Ordinarily these lands have to be cleared of the trees and undergrowth found upon them, and cultivation must be continuous, for the native trees, when cut down, are rapidly replaced by a new growth of the same kind. When we speak of trees and undergrowth we do not mean dense woods or "black jacks" as in Illinois, but in most instances scattering trees, chaparral, etc. Nor do we intend to convey the idea that these lands will produce without labor upon them and intelligently applied, but the experience of many farmers has proven that these foothills, or "red lands," when properly cultivated, are the best and most lasting of soils.

With a rainfall averaging over 40 inches, a drouth is never known, and by summer-fallowing, as they do in the southern and middle counties, full crops can always be assured. These lands are nearly all foothill lands with an altitude of 350 to 1,000 ft. "It has been found that the foothills, up to a hight of 2,500 ft., have approximately the same temperature as places in the valley having the same latitude. It has also been found that with an increased elevation there is an increase of rainfall over those places in the valley having the same latitude."

Timber and Lumbering.

To the east and northeast of Redding, within a distance of from 30 to 50 miles, is a large extent of pine timber, among it some of the finest sugar-pine, and on the Pit and Sacramento rivers is much good timber. Also on the west side of the county, at a distance of say 20 to 30 miles, is good timber for lumber.

There are eight sawmills in the county, from the simplest to the best, and which have never yet been able to supply the demand. Lumber costs at the mills from $10 to $12 per thousand ft. There are thousands of shakes, shingles and fence posts made in this belt of timber.

Sheep and Stock Ranges.

In the county are some excellent sheep ranges. The climate is peculiarly favorable to sheep. They need neither shelter nor cultivated food, or, at least, most of them never get any. Sheep husbandry in California has proved very profitable. Stock, as a general thing, roams at large during the entire year without cultivated food.

Streams and Water.

The streams of the county are numerous, and all fall into the Sacramento—a name first applied to California's principal river about 20 miles north of Redding, at the confluence of Pit and Little Sacramento rivers. The Pit is several times the larger stream. In what is known as "Big Bend" of this river is sufficient land of good quality for quite a colony. Pit river has its source in Lassen county, flows westward into Modoc, southwest back into Lassen, and thence into Shasta, near the northeast corner. Through Lassen and Modoc the Pit is a sluggish stream of water of poor quality, but soon after entering Shasta county it receives Fall river as a tributary. This is one of the finest streams in the world; beautiful, clear, cold, pleasant tasting water, cold enough to drink in summer, and warm enough not to freeze in winter, the variation in stage being less than two ft. Being a typical stream in that portion of the county the description of it may be referred to in connection with several others. The whole course is but 14 or 16 miles. The water rises through a great number of springs in a small area, and forms a lake about one-half by two miles. From the lake the river winds through a beautiful valley, having several small rapids in its course, until within about 200 yards of its mouth, where it passes over a ledge in a series of cataracts and rapids, making a total descent of 60 ft. The river is 20 yards wide, 4 or 5 ft. deep, and flows with a good current. This and other streams near by are most probably fed from the great lava regions to the east and north. The next two tributaries, Hat creek and Burney creek, flow into the Pit from the south, and are in many respects similar to Fall river. Next, also on the south, are Roaring river, Hatchet creek and Montgomery creek; on the north, Squaw creek, McLeod river and the Little Sacramento. These three have many features in common: They take their rise in the high mountains around Shasta Butte, flow south, clear, very cold and very rapid, each about 100 miles in length, and fall into the Pit within a distance of 15 miles. The McLeod is the largest, and is almost as large as Fall river. The United States fishery is located upon it, near the mouth, 21 miles from Redding.

From the entrance of Pit river into Shasta county to its confluence with the Little Sacramento and change of name it flows in a general westwardly course, though making several bends, choked and turbulent through wild and glorious canyons; but with change of name it changes its course south, and enters the bottom lands of Redding.

Below this point comes Clear creek from the west, Churn creek, Stillwater, Cow creek and Battle creek from the east, the last forming the boundary between Shasta and Tehama counties, on the east side of the river, as Cottonwood creek does on the west, the only remaining stream on that side. Cow creek is a large creek, having many branches, all rising in the high Sierra Nevadas. Battle creek receives the waters from west side of Lassen Butte, as does Hat creek on the east side. These two creeks have sources close together; each is about 30 to 40 miles long. The former empties into the Sacramento, the latter falls into Pit river 80 miles above, at an elevation of more than 2,500 ft.

Besides the streams named, there are hundreds of others of smaller size. Water privileges exist to an extent practically unlimited, and edible fish abound in all the waters, trout and salmon being the principal varieties. Springs are found at frequent intervals. The water varies greatly in character, but is generally healthy and pleasant tasting. In sinking wells the depth necessary to obtain a supply of water varies from 15 to 50 ft., according to locality. No test has been made to obtain artesian water, but the geologic formation is of the most favorable character.

From Redding, by the river, it is more than 100 miles to the entrance of the Pit from Lassen county northeast, and 25 miles to the Tehama line south. The total length of the Sacramento, Pit, Little Sacramento, McLeod and Fall rivers in the county proximates 250 miles.

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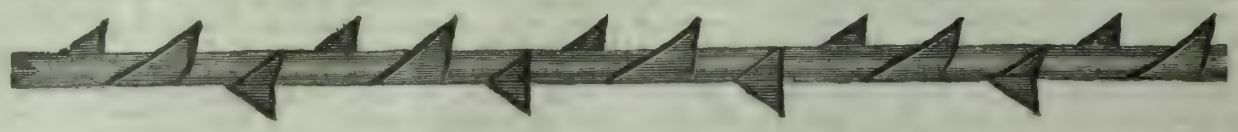

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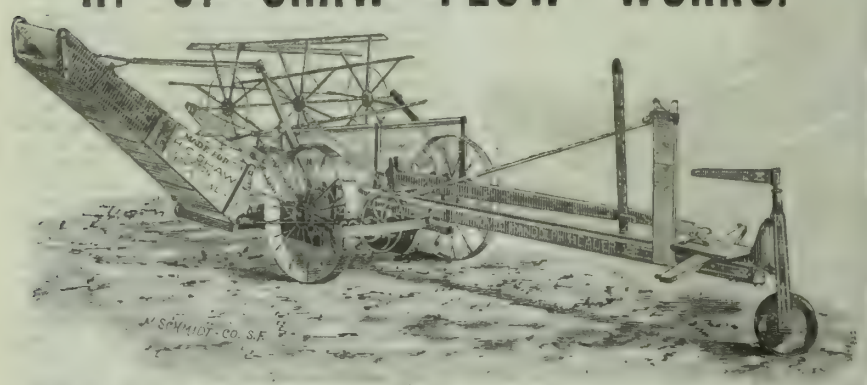

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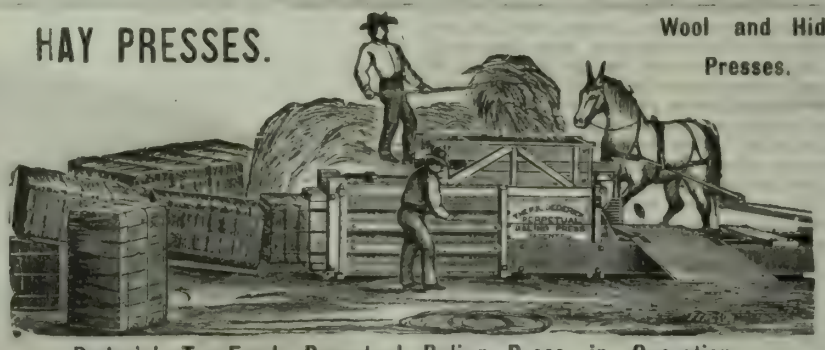

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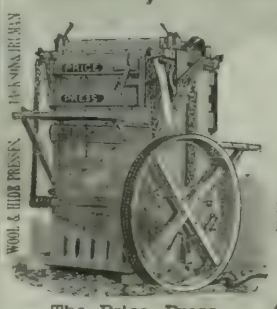

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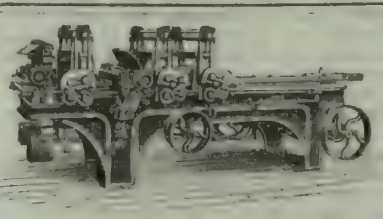

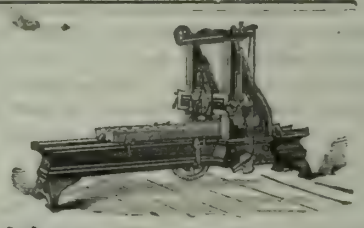

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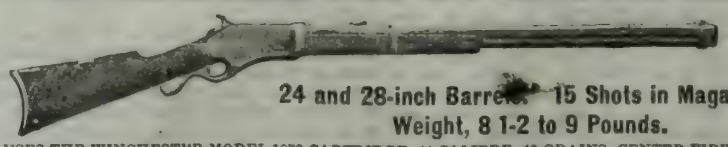

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No Colony in the State has now so promising a future, and none offer so great advantages for profitable investment. The extensive improvements of the past year will be more than doubled during the coming summer. In addition to the usual sales, lands are offered for planting in vineyards on shares. Here are grand opportunities for industrious men, as well as for capitalists.

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Importer and Breeder of all the best known and most profitable varieties of Land and Water Fowls.

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And the new fowl, AMERICAN SEBRIGHT or EUREKA.

AGENT FOR THE PACIFIC INCUBATOR,

WHICH IS MADE IN THREE SIZES,

No. 1,	Capacity,	550	Eggs, Price,	$90.
No. 2,	"	250	" "	65.
No. 3,	"	180	" "	56.

Guaranteed to hatch NINETY PER CENT. of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season For further particulars send stamp for illustrated circular to GEO. B. BAYLEY, Box 1771, San Francisco.

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An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

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American Sebrights, Langshans, Plymouth Rocks, and Brown Leghorns Choice birds for sale in pairs, trios, or breeding pens. Eggs for hatching in season. Satisfaction guaranteed. Write for prices. Address,

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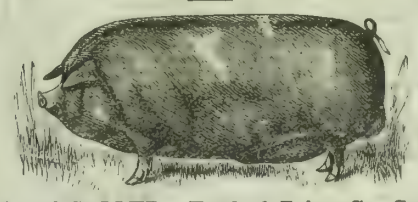

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Of California,

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For sale in large or small tracts, on easy terms, in the best parts of the State

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Good Crops Every Season Without Irrigation.

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SHEEP RANCH FOR SALE.

This ranch of

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Is located at

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About 100 acres are in grain, and 100 more are good plow land. The remainder has plenty of green feed, having been pastured but little since last September, and in this section the rainfall is always sufficient for grazing land and agricultural purposes

The place is pleasantly situated on the stage road, about 40 miles from the terminus of the railroad.

With House, Orchard, Barn,

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Parties wishing to purchase good stock raising lands, unaffected by severe drouths, will do well to address the undersigned. The lands can be purchased cheap, in lots from 100 to 2,000 acres. It is partly low table and rolling land, partly clear and level. Good for vine and fruit raising. Will raise vegetables and all kinds of grain. Crops certain every year. Near town and a $10,000 public school house. Price, $3 to $5 per acre. Good local market for fruit, vegetables, grain, poultry and dairy produce. Address the proprietor,

EDWARD FRISBIE,
Anderson, Shasta Co., Cal.

Silos, Reservoirs, Head Gates,

ARTIFICIAL STONE AND CONCRETE.

RANSOME, 402 Montgomery St., S. F. Send for circular.

S. F. Market Report.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, April 19, 1882.

There is rather more inquiry for wheat, and the tone of the market is firm, in harmony with foreign reports. Sales are however few. The latest from abroad is the following:

LIVERPOOL, April 18.—California Wheat, spot, strong at 10 @10s 4d. Mark Lane is the turn dearer. Cargoes are active and higher at 47s for just shipped, 49s for nearly due, and 49s 6d for off coast.

The Foreign Review.

LONDON, April 18.—The *Mark Lane Express*, in its review of the British Grain trade for the past week, says: The prospects for young Wheat have been greatly improved by a fine soaking rain. Sound samples of fine native Wheat command an advance on account of the scarcity, and the provincial markets close 10d@20d better for these samples. Foreign Wheat is more active, and business has increased. About half of the available supply is American. The best descriptions is better at Liverpool, and 6d better in the inland markets. Off coast trade is firm, but inactive. No. 2 California realized an advance of 9d. There were 15 arrivals and six sales. Cargoes on the passage and for shipment are stronger. Flour is rather firmer, and foreign is steady and firm. Barley is unchanged, foreign being firm. Oats are firmer, and foreign samples have improved 6d@1s. Maize has improved in Liverpool, but remained unchanged in London. A large business has been done in forwarding cargoes. The sales of English Wheat during the week have been 30,097 quarters, at 45s 11d per quarter, against 51,361 quarters, at 44s 9d per quarter, for the corresponding week of last year.

Freights and Charters.

During the past week rates have been advanced, under a good inquiry for tonnage. Charters drawn during the week, both spot and prior to arrival, number 9 vessels, of a register of 11,745, or a carrying capacity of 352,340 ctls. The chartered Wheat fleet in port has now a register of 57,553, or a carrying capacity of 86,330 short tons, or 1,726,600 ctls, against, 48,156 tons at the same time last year. The disengaged tonnage in port has now a register of 19,279, or an export capacity of 28.9 short tons, or 578,360 ctls, against 9,617 tons at the same time last year. There is also a disengaged tonnage of 5,482 at Wilmington. Tonnage now on the way to this port has a register of 269,145, against 248,542 at the same time in 1881, and 102,109 in 1880. The British iron bark *Yarra Yarra*, 1,242 tons, is chartered for Wheat to Cork at £3 2s 6d.

Government Crop Reports.

WASHINGTON, April 15.—A synopsis of the April report of the Department of Agriculture upon the area and condition of winter Grain shows an increase of nearly half a million acres, or 2%. The estimated area of the present crop was 24,346,000 acres. The States showing the increase are: Michigan, 3; Indiana, 0; Ohio, 1; Kentucky, 13; West Virginia, 2; Virginia, 3; North Carolina, 10; Georgia, 12; Florida, 11; Alabama, 33; Mississippi, 54; Louisiana, 5; Texas, 72; Arkansas, 70; Tennessee, 17. The average increase in the cotton States of 26% amounts to about 800,000 acres. In the Northern Atlantic States, from Connecticut to Virginia, the area is 402,000 acres, which is about 50,000 acres less than in 1881. In the Western States, from West Virginia to Kansas, there is an average decrease of 2%, the decrease being 1% in Illinois, 2 in Missouri, and 11 in Kansas. The estimated increase in 8 of the Winter Wheat States is 16,726,000. In California, partial returns point to an increase of 10%. The Pacific coast is not included in the list of strictly Winter Wheat States. The condition of Winter Wheat is high throughout the West, Ohio alone reporting below 100. Those below the average are: Connecticut, 82; New York, 87; New Jersey, 95; Pennsylvania, 95; Ohio, 97. Delaware averages 10 points above 100; Maryland, 9; Virginia, 4; North Carolina, 13; South Carolina, 17; Georgia, 10; Alabama, 12; Mississippi, 14; Louisiana, 15; Texas, 9; Arkansas, 12; Tennessee, 8; West Virginia, 6; Kentucky, 12; Michigan, 8; Indiana, 5; Illinois, 2; Missouri, 10; Kansas, 10. Winter Rye shows an increase of area, except in Connecticut, Pennsylvania, Delaware West Virginia, Kentucky, Ohio, Indiana and Missouri. The increase is relatively the largest in the South. The full report, when printed, will show the time of sowing, the proportion of drilled and of sown broadcast, the details of injury by the Hessian fly, which are comparatively slight, and other information illustrating the condition of crops.

Eastern Wool Markets.

BOSTON, April 15.—The market for Wool is more active, but prices are low and irregular. The buyers are willing to purchase freely, and are offering 40c for Ohio and Pennsylvania, and considerable has been bought on speculation in this and the neighboring markets at this price, but no more is offered now under 41@42c, and some is held higher. The sales of the week have been 2,000,000 lbs fleeces at 40@42c; select lots 42½@45c per lb. Michigan fleeces have been selling for 40@41c and are in fair demand; No. 1 fleeces selling at 42½@46c per lb, as to quality of combing; and delaine fleeces are in fair demand at 42@43c. For fine delaine and fine combing some select lots brought 50c. Unwashed combing is dull and sales can only be made at quite low figures, if at all. Ten thousand lbs Kentucky sold at 27c, and held even at 29c, and that the new clip has been sold at that figure, as it has been a dull article here for some time past. Unwashed fleeces are in fair demand and remain unchanged. California Wool is dull and prices nominal. The new clip attracts very little attention here. Pulled and Maine supers, 45@50c; common and good supers, 25@43c per lb. There has been 200,000 lbs Australia sold at 44@46c; clothing, 47c; combing, 100,000 lbs Montevideo, 37c; choice Cape, 38c per lb. Carpet Wools have been quiet.

BAGS—There is renewed interest and holders are firm. On call, 9½c was bid, 9¾c asked for Calcutta; June, $9 30 bid, $9 50 asked.

BARLEY—The bidding on 'change has been quite active, but sellers are above the figures. Call sales of 100 tons old No. 1 brewing, July, $1 80, and 100 tons do, September, $1 12½. The market is firm. Bids and offers were: No. 1 brewing, July, $1 25 bid, $1.35 asked; August, $1 25 bid, $1 30 asked; September, $1.75 bid; No. 2 brewing, April, $1.65 bid, $1 70 asked; July, $1.80 asked; July and August (old) $1.65 bid; August, regular, $1.15 asked; No. 1 dark brewing, April, $1 60 bid, $1 75 asked; May, $1 60 bid, $1.70 asked; August, $1.12 asked; No 1 feed, spot, $1.56½ bid, $1.60 asked: June, $1 37½ bid, $1.45 asked; July, $1 18 bid, $1 20 asked; August, $1 05 bid, $1 10 asked; September, $1 bid, $1 05 asked; October, $1 bid, $1.07½ asked; No. 2 feed, April, $1.50 bid; June (new or old), $1.30 bid, $1.40 asked; August, 96c bid, $1 05 asked; September, 94c bid, 96 asked; October, 92½c bid, 97½ asked; seller, 1882, 90c bid, 94c asked; No. 1 Chevalier, April, $1.62½ bid, $1.65 asked; July, $1.22½ bid; No. 3, Chevalier, July, $1.10 bid; September, 90c bid, 99 asked.

CORN—There is no trade in California Corn, and but little in Nebraska. Bids are $1 56½ and $1.61½ asked.

DAIRY PRODUCE—Butter is still well put away, and supplies are not excessive. Prices remain as last week. Cheese is in excess. There is considerable Western States Cheese in, which blocks the sale of the California.

EGGS—Eggs are disposed to improve this week, and fresh selections have reached 22c ⅌ dozen.

FEED—There is no change in Hay or Ground Feeds. Bran sales are few. On call bids and offers were: Spot, $12.50 bid, $13.50 asked; June, $13.25 bid, $13.75 asked; seller 60, $12 75 bid; seller 1882, $11.75 bid, $12.50 asked.

FRESH MEAT—The market is quiet this week, although rates are still high, and beef is even higher than last week.

FRUIT—Oranges are going for less money. Other fruits are unchanged. The first Strawberries came in at the last of last week, and sold at first for $1 ⅌ lb; the next day at 50c ⅌ lb. Another week will bring in good amounts.

HOPS—There is a fair trade at former prices.

OATS—Oats are in good request. There are now but few in sight, and they are being held high. Bids and offers were: Extra choice, April, $1.95 bid; September, $1.51 bid; October, $1.50 bid; No. 1, $1.85 bid; April, $1.80 bid; May and June, $1.75 bid; July, $1.50 bid, $1.57½ asked; September, $1.38½ bid, $1 40 asked; October, $1.36 bid; No. 2; May, $1.60 bid; July, $1.30 bid, $1.50 asked; August, $1.30 bid, $1.40 asked; September, $1.25 bid, $1.30 asked; October, $1.25 bid.

ONIONS—Choice Onions are high—the best selling at $1.60 ⅌ ctl.

POTATOES—Supplies are confined to Petaluma, Oregons and Salt Lakes, although more Humboldts are expected. Prices for old Potatoes are a little higher, but new are declining.

PROVISIONS—There is a good trade at old prices.

POULTRY AND GAME—Turkeys are 1c lower. Fowls are about the same as last week, and Ducks 50c lower per dozen.

RYE—Rye is quiet. Bids and offers were: No. 1 September, $1.40 bid, $1.47½ asked; No. 2, April, $1 95 bid, $1.97½ asked; September, $1.23 bid, $1 36 asked; October, $1.30 bid.

VEGETABLES—Asparagus is coming in large quantities. Peas are also abundant. Some from the lower coast are quite poor and sell as low as 2c per lb. Cabbage is in request and higher.

WHEAT—Wheat is in good heart, although rates are about the same. Bids and offers were: Extra choice, $1.67½ asked; August, September and October, $1.57½ bid; No. 1 White, May, inspection waived, $1.60 bid, $1.62½ asked; August and September, $1.56½ bid; No. 2 White, August and September, $1.50 bid, $1.52½ asked. No. 2 Sonora, $1.47½ bid, $1 52½ asked; July, $1 52½ asked; Outside sales of 35 tons extra choice, $1.62½; 140 tons No. 1 Shipping, alongside, $1 61½; 90 do, Port Costa, $1.60; 125 do, $1 60; 2,100 do in lots, $1 58¾@1.60; 70 do super fine, $1.47½ per ctl.

WOOL—There is considerable interest in the trade, though prices are not changed. Much is being bought in the country.

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., April 19, 1882.

FRUIT MARKET.		Pears, sliced	— @— 9½
Apples, bx	2 00 @ 3 50	do whole	— 7 @— 8
Bananas, bunch	2 50 @ 4 00	Plums	— 5 @— 6
Cocoanuts, 100	6 00 @ 7 00	Pitted	— 11 @— 12½
Cranberries, bbl	12 50 @14 00	Prunes	— 9 @— 10
Limes, Mex	8 00 @10 00	Raisins, Cal, bx	— @ 2 50
do, Cal, box	2 00 @10 00	do, Halves	— @ 2 75
Lemons, Cal, bx	1 75 @ 2 50	do, Quarters	— @ 3 00
Sicily, box	6 50 @ 7 50	Eighths	— @ 3 25
Australian	— @— —	Zante Currants	— 8 @— 10
Oranges, Cal, bx	2 00 @ 3 75	**VEGETABLES.**	
do, Tahiti M	— @— —	Artichokes, doz	— @— 50
do, Mexican	15 00 @17 00	Asparagus, box	— 75 @ 1 00
do, Loreto	— @— —	Beets, ctl	— @— 65
Pears, bx	— @ —	Cabbage, 100 lbs	1 25 @ 1 40
Pineapples, doz	8 00 @ 9 00	Carrots, sk	— 65 @— 75
DRIED FRUIT.		Cauliflower, doz	50 @— 60
Apples, sliced, lb	— 7 @— 7½	Garlic, lb	— @— 1½
do, evaporated	— @— 12½	Lettuce, doz	10 @— —
do, quartered	— @— 7	Mushrooms, bx	— 75 @ 1 00
Apricots	18 @— 20	Okra, dry, lb	— @— 50
Blackberries	14 @— 16	Peas, green, lb	— 3½ @— 4½
Citron	28 @— 30	do, sweet	— 5 @— 6
Dates	9 @— 10	Parsnips, lb	— @— 4
Figs, pressed	4 @— 6	Rhubarb	— 3 @— 4
do, loose	3½@— 5	Squash, Marrow	
Nectarines	14 @— 15	fast, ton	18 00 @20 00
Peaches	11 @— 11½	Tomatoes	— 10 @— 12½
do pared	14 @— 18	Turnips, ctl	— 75 @ 1 00

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., April 19, 1882.

Eng Standrd Wheat	8½@ 9	45 inch	9½@ 9½
Cal Manufacture	....	40 inch	8½@ 8½
Hand Sewed, 22x36	8¾@ 9	Wool Sks Hand Swd	
2ox36	8½@ 8¾	3½ lb	— @47
23x40	12 @ 13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	— @49½
Machine Swd 22x36	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10½	Bean Bags	6½@ 7
Quarters	6 @ 6½	Twine, Detrick's A	32½@35
Eighths	4½@ 4½	" " AA	35 @37
Hessian, 60 inch	— @12		

Pacific Coast Weather for the Week.

[Furnished for publication in the PRESS by NELSON GEROM Sergt. Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending 11:58 A.M. Wednesday, April 19th, at noon, for the stations named:

Date.	Olympia.	Portland.	Roseburg	Red Bluff	Sacram'to	San Francisco	Visalia.	Los Angeles.	San Diego.
Thursday	.00	.00	.00	.00	.00	.00	.00	.00	.00
Friday	.38	.31	.—	.00	.00	.00	.00	.00	.00
Saturday	.50	.—	.—	.00	.00	.00	.00	.00	.00
Sunday	.06	.18	.08	.00	.00	.00	.00	.0	.00
Monday	.—	.07	.06	.00	.00	.00	.00	.00	.00
Tuesday	.41	.12	.08	.00	.00	.00	.00	00	.00
Wed'sday	.22	.42	.58	.01	.05	.06	.00	.00	.00
Totals	1.57	1.08	.80	.01	.05	.06	.00	.00	0.00

Domestic Produce.

WHOLESALE.

WEDNESDAY M., April 19, 1882.

BEANS & PEAS.		Almonds, hd shl ⅌ lb	8 @ 10
Bayo, ctl	3 00 @3 25	Soft shell	14 @ 15
Butter	3 75 @4 25	Brazil	10 @ 11
Castor	3 50 @4 00	Pecans	13 @ 15
Pea	4 50 @4 60	Peanuts	6½@ 7
Red	2 50 @3 00	Filberts	14 @ 15
Pink	2 50 @3 00	**ONIONS.**	
Large White	3 00 @3 25	Red	— @—
Small White	4 50 @4 60	Silverskin	75 @1 60
Lima	— @6 00	do, choice	1 00 @1 10
Field Peas, b'lk eyel	5 @1 75	Oregon	— @—
do, green	2 50 @2 25	**POTATOES.**	
BROOM CORN.		New, lb	3 @ 3½
Southern	3 @ 3½	Early Rose	1 90 @2 00
Northern	4 @ 6	Petaluma, ctl	2 10 @2 25
CHICCORY.		Tomales	— @—
California	4 @ 4½	Humboldt	1 85 @1 95
German	5½@ 7	" Kidney	— @—
DAIRY PRODUCE, ETC.		" Peachblow	— @—
BUTTER.		Jersey Blue	— @—
Cal. Fresh Roll, lb	20 @ 22	Duffey Cove	— @—
do Fancy Brands	27 @ 2 1	River, red	1 90 @2 00
Pickle Roll	— @ —	Chile	1 50 @1 60
Firkin, new	26 @ 27	do, Oregon	— @—
Eastern	18 @ 20	Oregon Peerless	1 70 @1 80
New York	— @ —	Sweet	1 00 @1 25
CHEESE.		**POULTRY & GAME.**	
Cheese, Cal., lb	14 @ 15	Hens, doz	6 00 @ 7 50
EGGS.		Roosters	6 00 @10 00
Cal. Fresh, doz	20 @ 22	Broilers	6 00 @ 7 50
Ducks	— @ —	Ducks, tame, doz	7 00 @ 8 50
Oregon	— @ —	Geese, pair	1 25 @1 50
Eastern, by expr'ss	— @ —	do, young	2 50 @3 00
Pickled here	— @ —	Wild Gray, doz	— @3 00
Utah	— @ —	White do	50 @1 00
FEED.		Turkeys	15 @ 17
Bran, ton	12 50 @13 50	do, Dressed	— @—
Corn Meal	36 00 @37 00	Turkey Feathers, tail and wing, lb	10 @ 20
Hay	10 00 @15 00	Snipe, Eng	1 75 @2 00
Middlings	— @18 00	do, Common	50 @ 75
Oil Cake Meal	— @27 50	Quail, doz	75 @ 80
Straw, bale	— 62½@— 70	Rabbits	1 00 @1 25
FLOUR.		Hare	— @2 00
Extra, City Mills	5 25 @5 50	Venison	5 @ 7
do, Country Mills	4 75 @5 00	**PROVISIONS.**	
do, Oregon	4 75 @5 12½	Cal. Bacon, extra clear, lb	13½@ 14
do, Walla Walla	4 50 @5 00	Medium	13½@ 14
Superfine	3 50 @4 25	Light	14 @ 15
FRESH MEAT.		Lard	13 @ 16
Beef, 1st quality, lb	8½@ 9	Cal. Smoked Beef	11½@ 12½
Second	5 @ 7	Shoulders	9½@ 10½
Third	4 @ 4½	Hams, Cal	12 @ 13½
Mutton	5 @ 6½	do, Eastern	15½@ 16½
Spring Lamb	7½@ 10	**SEEDS.**	
Pork, undressed	5½@ 7	Alfalfa	12 @ 13
Dressed	8½@ 9½	do Chile	— @—
Veal	7½@ 8	Canary	3½@ 4
Milk Calves	7½@ 8	Clover, Red	14 @ 15
do, choice	— @ 10	White	45 @ 50
GRAIN, ETC.		Cotton	— @ 20
Barley, feed, ctl	1 45 @1 55	Flaxseed	2½@ 3½
do, Brewing	1 70 @1 75	Hemp	— @ 5
Chevalier	1 60 @1 67½	Italian Rye Grass	25 @—
Buckwheat	1 50 @1 75	Perennial	25 @—
Corn, White	— @ —	Millet, German	10 @ 12
Yellow	1 55 @1 60	do, Common	7 @ 10
Small Round	— @ —	Mustard, White	1½@ 2
Oats	1 30 @1 67½	Brown	2½@ 3
Milling	1 80 @2 00	Rape	2½@ 2
Rye	2 05 @2 15	Ky Blue Grass	20 @ 25½
Wheat, No. 1	— @1 62½	2d quality	16 @ 18
do, No. 2	1 57½@1 60	Sweet V Grass	— @ 75
do, No. 3	1 45 @1 50	Orchard	20 @ 25
Choice Milling	— @1 65	Red Top	— @ 15½
HIDES.		Hungarian	8 @ 10
Hides, dry	19 @ 19½	Lawn	30 @ 40
Wet salted	9½@ 11	Mesquit	10 @ 12
HONEY, ETC.		Timothy	9 @ 10
Beeswax, lb	23 @ 25	**TALLOW.**	
Honey in comb	14 @ 18	Crude, lb	6½@ 7½
Extracted, light	9 @ 10	Refined	10 @ 10½
do, dark	7 @ 8	**WOOL, ETC.**	
HOPS.		SPRING—1882.	
Oregon	20 @ 21	San Joaquin, free	20 @ 21
California, new	22 @ 25	do, fair	18 @ 19
Wash. Ter	19 @ 20	do, dusty	15 @ 17
Old Hops	— @ —	Southern Coast	15 @ 18½
NUTS—Jobbing.		Stanislaus & Tuolumne	23 @ 25
Walnuts, Cal	10 @ 11		
do, Chile	7½@ 8		

Retail Groceries, Etc.

WEDNESDAY M. April 19, 1882.

Butter, California		Rice	8 @ 10
Choice, lb	45 @ 55	Yeast Powdr, doz	1 50 @2 00
Cheese	17 @ 25	Can Oysters, doz	2 00 @3 00
Eastern	25 @ 30	Syrup S F Gold'n	75 @1 10
Lard, Cal	— @ 18	Dried Apples, lb	10 @ 15
Eastern	20 @ 25	Ger Prunes	12½@ 20
Flour, ex fm, bbl	8 00 @9 00	Figs, Cal	9 @ 10
Corn Meal, lb	2½@ 3	Peaches	15 @ 25
Sugar, wh crushd	12½@ 13½	Oils, Kerosene	50 @ 60
Light Brown	8 @ 9½	Wines, Old Port	3 50 @5 00
Coffee, Green	23 @ 35	French Claret	1 00 @2 50
Tea, Fine Black	50 @1 00	Cal. doz bot	2 00 @4 50
Finest Japan	55 @1 00	Whisky, O K, gal	3 50 @5 00
Candles, Adm'te	15 @ 25	French Brandy	4 00 @8 00
Soap, Cal	7 @ 10		

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The owners of the Redlands tract having disposed of a large portion of their lands, now offer for sale one hundred and fifty acres only, at $125 per acre, this being all that will be offered the present season.

Redlands is located on the south side of Mill Creek Ditch, between Old San Bernardino and Crafton.

The lands are a clayey loam, very similar to the lands at the head of Magnolia Avenue in Riverside.

There are no fences on the land and no brush to clear off.

The tract is being put on the market as rapidly as the water can be put upon the lands, and no faster.

One thousand acres of the tract have just been surveyed and platted, about nine hundred acres of which have already been sold. The price of the remaining tracts is $125 per acre.

The third five hundred acre tract will not be put upon the market before the winter of 1882–3. In the meantime the system of irrigation will be completed by finishing the large reservoir conducting the waters of the Company to the reservoir in pipes and flumes, and laying concrete pipes through the tract to carry water from the reservoir to the highest point on each tract.

The main avenues are one-quarter mile apart, 100 feet wide, and run from northeast to southwest for convenience of irrigation. The course of the sea breeze is parallel with these avenues.

The cross streets are sixty feet wide, and run at right angles with the avenues every half mile.

The tract is subdivided into ten-acre lots, with a town site composed of smaller blocks.

Its situation is the finest in the San Bernardino Valley, the view being unequalled, and the elevation near 2,000 feet above the level of the sea.

The climate is unsurpassed, the location being so far inland that fogs and northers are almost unknown.

The title to the land is United States patent, and is therefore beyond question.

The Water Right is ample and beyond dispute. It consists:—

First—Of fifty shares in the Sunny Side ditch, one of the oldest ditches in San Bernardino county. This water will be conducted from the Sunny Side ditch to the Redlands reservoir in a ditch flumed part or all of the way, so that no water will be lost by seepage. The ditch is already constructed and will be flumed before the next irrigating season. This is good for 500 acres of land.

Second—An eighty-inch stream developed in Santa Ana Canyon. This stream is being piped down to the head of the Redlands ditch, so that the entire water supply will be handled without loss. This stream is good for 500 acres more of land.

Third—Two reservoirs will be constructed. The work on these is now in progress. The largest reservoir will have a capacity sufficient to cover 500 acres of land 9 inches deep with water. There is an abundance of winter water to supply this reservoir. The second reservoir will be much smaller. The large reservoir will cover 17½ acres of land, and will be 60 feet deep in the deepest place

Fourth—The water will be conducted from the reservoirs to the highest point on each ten-acre tract by means of concrete pipes, thus saving expense and wastage in the distribution of the water. These reservoirs will irrigate another 500 acres.

These water rights, reservoirs, pipes, flumes, ditches, etc., are the property of the Redlands Water Company,—a company incorporated to furnish water to the Redlands tract of 1,500 acres, with 1,500 shares of stock. One share of stock goes with each acre of land, so that when the land is all sold the owners of the land own and control the water, and they only charge such price for the water as is absolutely necessary to pay running expenses for handling the water in the most economical manner possible, as there are no ditches to clean.

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☞ Send for Circular containing Map and further information.

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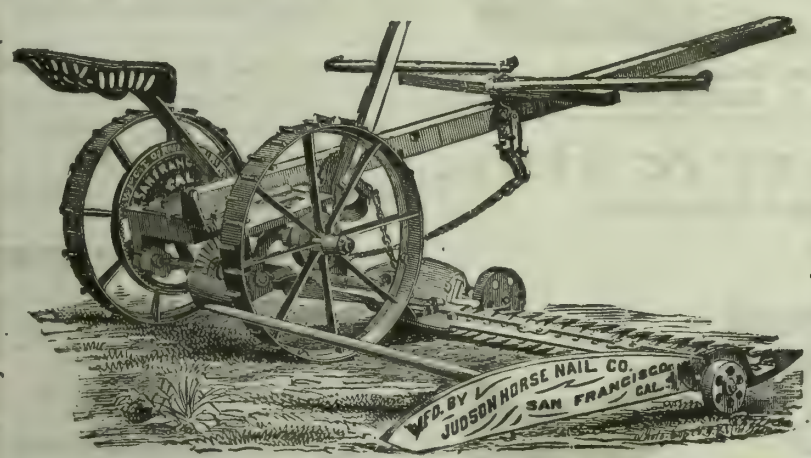

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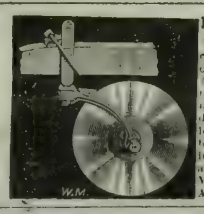

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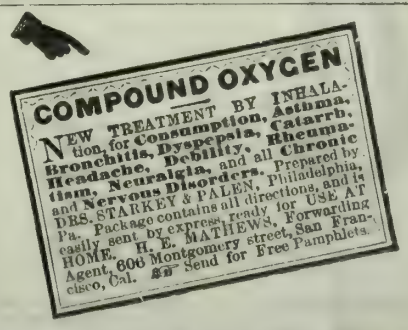

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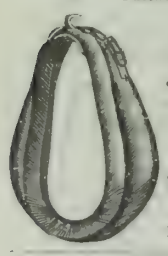

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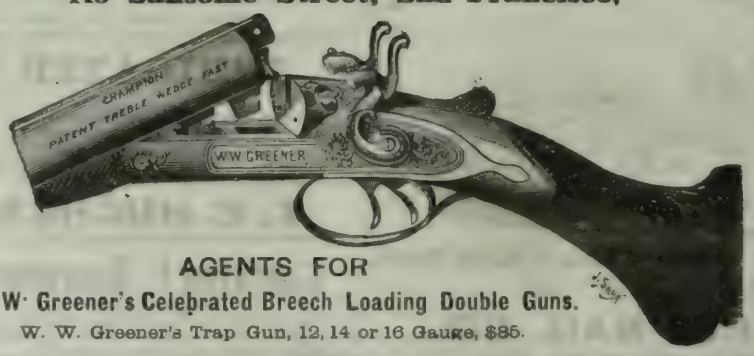

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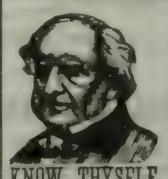

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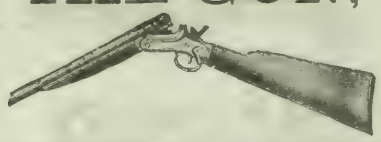

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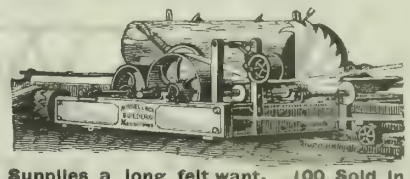

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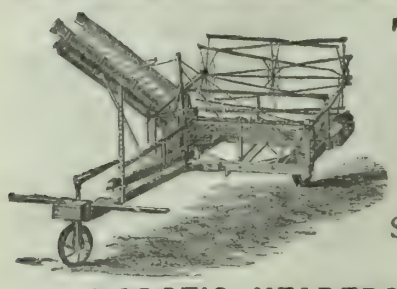

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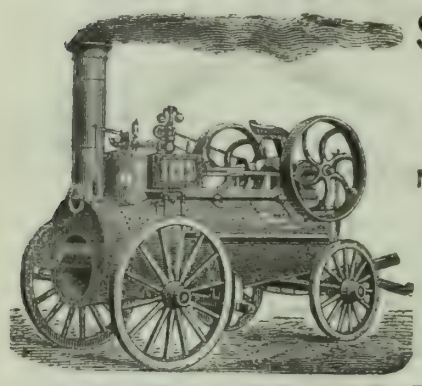

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PACIFIC RURAL PRESS

HAY-MAKERS' EDITION — TWENTY-FOUR PAGES.

Volume XXIII.] SAN FRANCISCO, SATURDAY, APRIL 29, 1882. Number 17

Hay and Climate.

Haying in California has not as much of the poetic element to adorn its operations as clings about the Eastern hay fields. It is a very satisfactory business operation, but its colors are less varied, and the monotony in form and hue of the grain heads is not so artistic as the varied grass tops and clover blooms. The picture on this page suggests strongly the poetic features of an Eastern haying, and those who need a closer reminder than the artist gives, can find it in the interesting article by Mr. Price, on another page of this issue.

Haying in California is eminently a business or an industrial operation, and it is not fraught with the dangers and excitements which agitate the rural peoples in moister lands. There is generally a little water falling at the haying season, but the "hay rains," as a rule, are so light as to be left out of sight in arrangements for haying. What we may lack in the growth of some hay plants is more than compensated for by the growth of other plants, and by a safe gathering in. The conditions here are not unlike those described as pertaining to Georgia, by C. W. Howard, in his book about grasses in the South:

As compared with the Northern States of this country, the climate of the South is certainly better adapted to grass culture, if we take into consideration the whole year. At the North, during the winter and late in the spring, the ground is hard frozen or covered with snow. Of course, during that period the grass is useless, and this constitutes a large portion of the year. The heat and dry weather of the summer are the drawbacks to grass culture in the South. But these affect summer pasture alone. They do not affect the hay crop. This is an important consideration. Clover and the hay grasses are cut before the dry weather sets in. The hay crop at the South will not be injured one year in 20 by dry weather in the spring. We do not know a country more favored in this particular. In England, while the grass grows luxuriantly in the spring, it is very uncertain whether there will be enough dry weather at the proper time to save the hay. Hence the preparations for hay harvest in England are made with a degree of care and anxiety to which we are strangers. If the occasional sunshine be not used to the utmost advantage, the crop is lost. We, on the contrary, always have rain enough in the spring to mature the grass, and not enough rain to render the hay harvest at all precarious.

It is usual to say that the hay grasses, so called, will not succeed in California. This, like most other generalizations about our varied conditions, is only partially true. The immature cereals which we grow for hay have excellent qualities for animal forage, and they are grown permanent meadows of other grasses could doubtless be grown. In other parts it may be found that, without irrigation, nothing but these quickly growing annuals would succeed. But, by using water artificially, a long list of hay plants is made possible even in the dryest parts of the State, and in other parts, naturally moist from fogs and heavy rainfall, the list of hay plants is increasing because experimenters have found that the plants, once thought ill adapted, are really successful. There is need of much more test and inquiry on this point, and they will no doubt be applied.

All in all, there is no doubt whatever that California can truly boast of superiority in conditions favorable to the production of good hay in large amount and at a small cost. Hay from preference, even in some parts where markets are also good, for the growth of various mining and manufacturing industries necessitate the keeping of many working animals, and the transportation of hay by rail is profitable on this coast, over greater distances than in any other part of the country.

AN EASTERN SUMMER SCENE—HAYING IN THE MEADOW.

Bermuda Grass on the Levees.—The use of this plant for levee protection, which has been long advocated in the Press because of the successful experience in the Southern States, is constantly increasing. According to the *Appeal*, four men have been employed about two weeks in planting Bermuda grass on the Marysville levee. With the exception of that portion of the levee lying between the Oroville railroad and Brown's Valley grade, their work is completed. The grass roots have been planted on both sides of the levee. It is believed that the grass will materially add to its strength and efficiency, as the roots of the plant form a very strong sod. The circuit of the levee measures 7 miles and 200 ft.

Mr. Cooke Says, Play on the Fruit.—Mr. Cooke says that after the next 10 days but little good can be done by scraping the trees, as it will be too late. The first brood of moths will have emerged from the pupæ. However, he advises the owners of apple, pear and quince trees, infested by codlin moth, or located near any trees infested by said insects, as follows: As soon as the fruit is set or formed, procure a force pump and spray the foliage and fruit with a solution of whale-oil soap and sulphur, known as codlin moth wash, or soft soap and sulphur. Of either mixture use one lb. to each one and a half gallons of water used. These solutions will not injure the foliage or fruit, but will prevent the moth from depositing the egg on the fruit sprayed with either of the above solutions It is not claimed that sulphur is an insecticide, but the fatty matter in the soap holds the sulphur on the parts washed, and that insect life, especially the codlin moth, will not go where it is to be found. Eight lbs. of lye, 45 lbs. of grease, 47 to 60 lbs. of water, and 25 lbs. of sulphur will make 125 lbs. of excellent soap for spraying fruit and foliage.

A Horse Protecting Association.—The farmers and horse owners held a convention in City hall, Salinas City, to take measures to secure themselves against any contagious diseases among horses, rumor having mentioned that some animals were suspected of having glanders. A committee was appointed, with authority to procure expert services, if necessary, and report what they find as the facts, with the view of prompt, efficient, defensive measures being inaugurated, if found necessary. It is certainly wise to be forehanded in this matter, and to stamp out contagious diseases which cause incalculable losses by rendering working animals unfit for service.

Clover Ensilage.

There seems to be quite a general disposition to test the ensilaging of different fodder plants in this State this year. On another page may be found a record of an experiment with alfalfa, by using straw as an absorbent. There is every reason to expect success from such proceeding, especially when one has to deal with such succulent plants as the clovers. We believe that something good can be done with the several annual indigenous clovers, which grow in such rankness in the coast counties, if straw be combined with the cut clover in the silos. At all events, there is good *a priori* ground for experiments in this direction.

Prof. Norton, of the Normal school, gives the San Jose *Herald* an item concerning the use of burr clover, which is important. He writes: I have recently visited the silo prepared and filled last summer by Mr. J. Q. Pearl, near San Jose. The building was an old adobe house, some 18x40 ft. The windows and doors were closed with concrete, and it was filled with freshly cut burr clover, much the worse for a rank growth of weeds. As fast as cut, the forage was pushed in through a gable-window, and thoroughly trampled down. An active fermentation followed, the mass shrinking and settling down greatly. Other layers of fresh forage were added as fast as there was room for them, and finally the whole mass was covered with plank, over which a foot of earth was shoveled. The silo was opened in November. The ensilage was nearly black, and looked worthless, but the cattle preferred it to all other food, and it seems more valuable as a milk-producing agent, than any form of dry forage. Mr. Pearl estimates that his eight acres of weedy burr clover were worth more to his dairy than his best 40 acres of oat or wheat hay.

Those who desire to get the fullest account of recent Eastern experience with ensilage should send to J. H. Reall, Secretary of the American Agricultural Association (26 University Place, New York city), for a copy of the January journal of the society, which can be had for 50 cents. It contains 30 pages of articles on ensilage, by those who have made and used it, and it will give many hints for local experiments which we would like to see tried.

Hay on Hand.—The slow growth of feed this winter has occasioned an unusually large consumption of hay, and the amounts of old hay on hand when the new crop comes in will be much smaller than usual. Probably there is not one-third as much old hay in the State as there was at this time last year; perhaps much less. This will prepare the way for the new crop, and extra efforts should be made to secure it in the best possible condition.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS

San Joaquin Valley.

Crops, Pastures and Rainfall.

EDITORS PRESS:- The ride by rail now from San Francisco to Fresno City being all made in daylight, gives a very good opportunity to judge of the probable yield of the grain crops along the route. Evidently the portions of Alameda and Contra Costa counties most influenced by the coast climate, will have abundant crops of the finest wheat and barley. No young grain could look better at this date than it does now. But, as you pass near Point of Timber and to southward, the prospect for good crops diminishes as you go towards Fresno, until the region of irrigated fields is reached, because of the constantly decreasing rainfall for the season.

The excellent rain-gauge made by James Green, of New York, which your correspondent brought to this State 14 years ago, and the results from which the RURAL has so often published, during that time, from my observations or those of my friend, E. S. Russell, on whose ranch, six miles south of Borden, the instrument is now kept, gives the following

Rainfall for the Season

There, to date: Nov., 0.41; Dec., 0.38; Jan., 0.91; Feb., 1.23; March, 1.77; April, 1.03; total, 5.73 inches, or less than half the amount to date last year.

Crops generally on the west side of the San Joaquin, near Bantas and Ellis, look very unpromising, unless aided by good rains in the latter part of this month and in May. Your correspondent has just been informed by a careful observer, who has lately been on the west side of the San Joaquin river, above Firebaugh's ferry, that there the plains are entirely bare of vegetation. From Lathrop to Fresno, the wild feed, on which so much stock depends, though made quite abundant by the increased rains of the past five weeks, is blooming and going to seed with very short stems. Owners of sheep are generally intending to take them to the mountains as soon as they can. Feed in the foothills of the Sierra is reported as abundant. The spring clip of wool has proved comparatively light, because of scarcity of pasturage up to the middle of February.

Beyond question, the general yield of wheat in this entire valley is likely to be lighter than earlier estimates have placed it. If the average yield of all its unirrigated grain fields exceeds one-third the yield of last year, it is more than present appearances indicate. From Lathrop to Merced City some fields of barley, wheat and rye are

Already Headed Out.

So short in most such fields are the straw and the heads, and much of the less advanced grain is "booting" so short, that it indicates a very small yield. There are fields of dark green and rank wheat that covers the ground well as far south as Merced, that can make a half crop with a few more good rains to strengthen and mature it.

Unfortunately, one of the heaviest northwest winds of the season continued to blow and raise a regular "sand-storm," from noon, Saturday last, continuing unabated till after midnight last night. It has seriously injured all growing grain and feed, drying up rapidly the surface moisture and the sap of all plants. Nothing can undo its injury but a good rain within a week. The northwester having died down without the southeast wind following to bring rain, as it often does, there is little prospect of a rain so soon.

Last night, from 8 to 9:30 o'clock, while the wind-storm was still raging, there was a superb display of the

Aurora Borealis

In the north and northeast. It is remembered as occurring but once before within the last 12 years so as to be visible in this valley. Last night's display is said to have been more brilliant than on the former occasion.

Much interest here is felt in the excursion gotten up by Thomas Hughes and sons, which is to leave San Francisco for Fresno city next Thursday, 20th. Some 400 or 500 visitors are expected, and ample preparations are being made to render their stay pleasant and to give them a good opportunity to see all the peculiar features of this part of Fresno county. Vegetation generally is looking beautiful, including the many fine shade and fruit trees in this handsome town and in the numerous flourishing colonies.

This dry season has been a stimulus to new enterprises for irrigation. A new company has been recently organized, the

Fowler's Switch Canal Company.

Its ditch is to be taken out of the north bank of King's river between the Fresno Irrigating Co.'s ditch and the Kingsburg. The capital stock is fixed at $450,000, or 1,500 shares of $300 each. Frank Dusy is President and A. McCall, Superintendent. Its object is to provide irrigation for all lands as yet unprovided, between the two ditches named. Enough capital has been subscribed for the beginning of the work and to complete, at least, a large part of the work this year. It proposes to furnish water for each 160 acres for $250, the usual charge now being from $500 to $800. The main crosses the railroad between Fowler's Switch and Selma, about two miles south of the former. Its western terminus will be just west of the railroad. The whole bed of this large and important ditch has been plowed, in the last three weeks. It is to be 100 ft. wide on the bottom, and with an estimated capacity of 1,500 cu. ft. of water per second. Many teams are now completing one-tenth of a mile just north of Dusy's ranch, to test the expense of removing each cubic yard of earth. They are using a newly invented buck-scraper that does more work, and with less draft, than the old one. Many farmers are interesting themselves in this valuable improvement. J. W. A. W.

Fresno city, April 17th.

THE FIELD.

Notes on the Growth of Hops.

EDITORS PRESS:—As it is time to set the hop poles, and will soon be time to tie up the vines, I want to compare notes with some of the leading growers and see how we agree; and if we do not agree, then there will be a chance for discussion, and we will be able to arrive at the best methods of hop culture.

I think all the poles should be set by the 1st of May. I set my poles from 12 to 15 inches deep, and 18 inches apart at the bottom, and the tops from 3 to 5 ft. I use an iron bar 4½ to 5 ft. long, and conical-shaped at the bottom, say for a distance of 8 or 10 inches, and the large part of the cone about 3 inches in diameter. Some use a pod auger and make the hole by forcing the auger into the ground with the foot and then turning it around and hauling out the dirt. Some use a three-inch common auger, and set their poles without pointing. I set my poles east and west of the hill, so that the prevailing winds, say from the south, will blow between the poles, not from one pole to the other, as the wind will blow the long arms from one pole to the other, and they will catch and run up the next pole.

The first vines I saw this year came up about the 25th of March. My experience is that I have most always tied up my vines too soon. The first vines will not make as many hops as those that come out later. I think from the 1st to the 10th of May is the best time to tie them up. The first vines get chilled and stunted, while those that come out the 1st of May will run up the pole very fast, and there is nothing then to set them back.

Most all the vines have to be started around the poles or tied to it, and they will start themselves. I take gunny sacks, and cut them in squares long enough, so that, when unraveled, they will go around the pole and tie in a single knot. After the vine has got a good hold on the pole, the string can be taken off and used again.

A hop vine is hollow, except at the joints, which are from 8 to 12 inches apart; is hexagonal or six-sided, has little hooks pointing downward at each of its six edges. When a vine is cut, it bleeds, or the sap flows freely, is transparent, tasteless, except as to its astringency. The leaf comes out of one of the six edges, while the bud or arm above the leaf grows from one of the six sides, showing that the vine above or at every joint turns one-twelfth around.

As far as my observation goes, there are but one or two vines that run up a pole or string the same way a hop vine does. Morning-glory and beans run up a pole the reverse of the sun, or the same as an auger bit. A hop vine has two motions. The vine itself (or the first motion) twists the same way as an auger bit; the second motion is spiral, and is the one that twines it around the pole (the reverve of the first) in the direction of the sun.

In tying, select the two most thrifty for each pole, and let the rest trail on the ground until such time as the grower is ready to cut them off. The vines in a new yard, when once placed around the pole, will require but little attention, as they are of slower growth and appear to have more twist in them. The vines in an old yard require to be looked after every few days, as they are of rapid growth, and have less of the spiral motion, and when there has been a strong wind for two or three days, the ends of the vine get blown so far away, they cannot get back on the pole without assistance, either by the owner or by the change of wind.

The outer surface of a hop vine, when matured, contains a good deal of fiber suitable for coarse articles, such as burlaps, gunny sacks, etc. DANIEL FLINT.

Sacramento.

[These observations are very interesting. We hope they will draw out the experience and observation of others.—EDS. PRESS.]

THE FIRST LINE OF TELEGRAPH was erected less than 40 years ago, and at the present time there are more than 100,000 miles in operation. The United States comes first, with 250,000 miles, with the immediate probability of adding another 100,000 miles; Germany comes next, with 150,000 miles, and the great Chinese empire last, with 1,200 miles.

THE VINEYARD.

Annual Meeting of the Viticultural Commission.

The State Viticultural Board held a called meeting at the office of the Board, on Wednesday, the 19th inst. The meeting was called to order at 11 o'clock A. M., President Haraszthy presiding. Present, Commissioners DeTurk, West, Krug, Wetmore and Shorb, together with the Chief Executive Horticultural Officer, Mathew Cooke, and the Secretary, J. H. Wheeler. Commissioners Blowers and Rose appeared later.

Tax on Wines.

Mr. Wetmore offered the following resolution, which was, after full discussion, unanimously adopted:

Resolved, That the Committee on Distillation, Counterfeits and Adulterations be instructed to prepare and transmit to the Senators and Representatives of this State in Congress, an address urging them to use their best efforts to secure the passage of the proposed amendment to the revised statutes, now pending in Congress, as favorably reported by the Committee on Ways and Means, relating to the taxation of imitated and adulterated sparkling and still wines; it being understood that this commission does not consider that the amount of the tax to be imposed is of vital importance, but that the provisions requiring a stamp to be placed upon such products indicating to consumers the true character of the goods so taxed, will protect not only the public against imposition, but also subserve the best interests of all producers of pure wine, and tend towards advancement in the production of fine wines and increase our markets for genuine produce.

It was stated during the discussion of this resolution that many vine growers and wine dealers had been induced to sign protests against this measure, under misapprehension of its probable results upon their industry. All who have so signed the protest will be requested to write to our Senators and Representatives, acknowledging their error. The committee charged with the duty of preparing the address is composed of Commissioners J. De Barth Shorb, Charles Krug, and George West.

The Secretary reported to the Board on Investigations of the Phylloxera made in the last month, which report was by the President referred to the Committee on Phylloxera, Vine Pests and Diseases of the Vine.

Under the head of unfinished business, the resignation of Charles A. Wetmore as Chief Executive Viticultural and Health Officer, came up before the Board, the same having been presented at the last meeting. Numerous petitions from the viticultural districts of the State were presented, and Mr. Wetmore was induced to withdraw his resignation, for which act he was voted the thanks of the commission.

It was moved by Mr. DeTurk that this commission endorse the commendable action of the St. Helena vine growers in their late discouragement in and their opposition to the use of glucose and other adulterations practiced in wine making.

Vine Grafting.

After the above, Mr. Wetmore exhibited an interesting system of grafting which has lately come into vogue in France, and is especially applicable to the grafting of small seedling vines. It is one which enables the vine grower to use and graft seedlings which would otherwise be too small, in which case they are customarily put in the nursery or planted in the field, to be grafted when larger. The new system is by "approach," and consists in shaving off the bark of the seedling plant at some point of the stock and also the bark from the middle, or thereabouts, of the cutting of the desired variety. These fresh surfaces are bound together by a vegetable fiber (which will rot off before strangling the plant) and fine clay used to seal the graft instead of wax. The seedling and cutting thus bound together are planted in one hole. During the summer a union takes place, and before the following spring the graft cutting is severed from its lower part, being cut off below the point of union. The seedling top is also cut off, leaving the desired single resistant plant. Another great advantage arising from this system is that the grafting by approach may be done any time during winter, and is not crowded onto the vine grower all at once in spring.

The following is an extract (translated) from a letter written Feb. 20th, of this year, to Mr. Wetmore, by Prof. G. Foex, of the National School of Agriculture at Montpellier, France, being presented as a matter of interest to California wine growers:

"The tendency toward the reconstitution of our vineyards by American vines becomes stronger and stronger in the south of France. American cuttings have completely given out in the market for two weeks past, so many having been planted. The Jacquez and the wild Riparia still take the lead. The wine of the Jacquez sold for 75 francs per hectoliter (about 57 cents per gallon) at this place this year, while the ordinary wines of our vineyards brought only 35 francs, and I have seen a crop from Aramon grafted on American stocks, which yielded 250 hectoliters per hectare (about 2,700 gallons per acre). These facts, and a great many others of analogous character, are a great encouragement to our viticulturists."

The following is the

Report on Phylloxera

Referred to the committee above named:

To the Board of State Viticultural Commissioners:—At the request of Mr. Wetmore, Chief Executive Viticultural Officer, Mr. F. W. Morse, formerly employed by this commission for investigating the extent and ravages of the phylloxera and myself, visited the diseased vineyards of Sonoma, for the purposes expressed in the following questions and answers:

1. Can the phylloxera be found on the grapevine in winter? If so, in what form? How does the hibernating insect differ from that of summer, and what metamorphoses are observable?

2. Does the hibernating phylloxera change to adapt itself to different soils, locations and varieties?

3. Is there any particular part or portion of the vine root to which the phylloxera commonly resort during the hibernating period?

4. Is the so-called winter egg, which exists in France on wood two years old or over, to be found in California on either the wild or cultivated varieties?

5. Do the phylloxera attack the roots of the Vitis Californica, or wild vine of California, when the latter exists in its native state?

6. Do the phylloxera attack the roots of the Vitis Californica when the latter is under cultivation, and what evidences of resistance are to be found on the Californica.

The districts comprised in this investigation belong to Sonoma valley. First, the vicinity of Sonoma town, then three miles east of the same; finally, up the valley as far as Glen Ellen.

The search was assisted by the use of appropriate glasses and instruments. First, a low-power hand-glass, for scanning; second, one of higher power. In cases where these proved insufficient, a large microscope was resorted to, with the power of increasing the surface examined 500,000 times, if necessary.

Throughout the route traversed, infected spots were examined on high and low ground, and on gravelly and clayey soils. Confining our work to phylloxerated spots where the insects had been known to exist during the previous summer, the vines were chosen without any reference to variety or location, and on every vine examined the phylloxera was found in abundance.

In form, the insects found were subterranean *agamos aptera*. They were fully developed pucerom of the average size and shape, differing from the summer insect only in color and inactivity. They lay close to the exterior of the root bark, though not apparently seeking even the protection of crevices. Ofttimes they were observed in close contact with each other—huddling together, as it were. Owing to the dormancy of the insects and to their dark amber color, they were at first difficult to find, but once their appearance was fixed in the mind, once knowing what to expect, it became quite as easy as the search followed in summer or autumn.

No old ones or young ones were visible except as indicated by remains. There were, however, to be found the carcases of old and defunct mothers, broadened, flattened, discolored and partly decomposed. Some were found covering with their lifeless bodies eggs developed but not yet laid, which might possibly be thus protected by the old hulk, and hatch out in the following spring.

It is interesting to note that on one root, where the dormant insects were found, a demonstration was had of the readiness of the insects to renew their depredations on the approach of warm weather. The specimen was breathed upon and warmed for about two minutes. On returning it to the glass, activity was exhibited, not violent or unusual, but a sluggish movement of the antennæ and legs.

As regards the adaptability of the phylloxera to different soils, varieties and localities, nothing can be said, further than that they everywhere appeared the same; on the high and comparatively dry land they seemed identical with those found three ft. under water, and that on land where the water had been standing for some weeks. Those on the surface, rootless, too, appeared identical with those on the roots.

It has often been suggested and thought that the phylloxera may resort to certain portions of the vine on the approach of winter, where it can best stand its inclemency—perhaps to the tap-root, perhaps to the small fibrous roots, perhaps to surface roots, as opposed to deep ones. None of these surmises have proved correct. In the cases observed, the hibernating phylloxera had not moved from the spot in which it had issued from the egg. The old dead mother phylloxera, or their remains, were observed in nearly every case lying by the side of the live ones, and no part of the vine seems particularly favored by their presence in winter. This fact has a decided bearing on the winter use of insecticides, and proves that even in winter the ground must be completely saturated with the poison. As a conclusion, the phylloxera may be found on all roots of the vine in winter as well as in summer.

In searching for the winter egg, the bark of vines belonging to the vinifera as well as that of the Californica in its native state, was carefully examined, and everything of a suspicious nature preserved and put under glass for development (these specimens, since placed in a warm atmosphere, have none of them hatched anything resembling the *agamous aptera*, or gall-producing insect). The only available means of identifying the winter egg was from incomplete descriptions observed in text books, which means was, in a sense, uncertain. With this method the same, if existing, might still have been overlooked, and although some hours were spent in the careful examination of infected vines in different localities, we are yet unable to positively affirm its absence from our

vineyards. There is, however, a happy conclusion deducible, viz.: That this form does not exist in Sonoma valley in any abundance, either on the vinifera or Californica, when these are infested spots.

The Wild Vines.

To ascertain whether the Californica, growing wild, is subject to the depredations of the root louse, an examination was made of vines growing on the banks of a stream running through a badly infected vineyard of vinifera. About the wild vines the ground was uncultivated, compact and weedy, but the Californica roots exhibited no signs of attack; in fact, there was every appearance of health and vigor.

As to the transplanted Californicas, we have the following: In the experimental department of this commission there were, last year, a number of Californica seedlings—flower-pot plants, and accordingly diminutive—planted immediately over the remaining roots of badly infected vines of the vinifera, the latter being cut off below ground at a depth sufficient to permit of the young plants being put immediately over them. This transplanting was done in the spring of 1881, and the ground was swarming with the greedy insects searching for new roots. The new plants seemed equal to the emergency, starting out early with a vigorous growth. The late frosts disabled and checked them, but recovering from this they again put forth, and were found in the fall in an apparently healthy condition. For the purpose of examining the above, one of the seedlings was taken up and carefully cleaned. On many of the roots of a very profuse system existing, the dormant pucrons were found; and on all of them were the characteristic swellings and nodosities produced by the phylloxera, though scarcely any decay was seen. The roots seemed to have gone on without the usual effects of the poison, pushing right forward and through it as if not bitten. Beyond the swelling, the growth appeared quite as healthy as before it, and the large and healthy system developed certainly proves a remarkable power of resistance. From the general condition of these seedlings, as found to-day, having been the subjects of a most unwholesome attack of the insects, having been swarmed upon from every side and after all appearing so well, the inevitable conclusion is that it will stand among the foremost of our resistant stocks.

The specimen taken is preserved in alcohol at the office of the commission. Another year another of these vines will be examined and placed by the first for comparison, and it is hoped to continue by adding one each year and thus ascertain accurately the value among resistant vines of the Vitis Californica.

Use of Fertilizers.

Of other facts noticed, one of peculiar interest was presented near Glen Ellen, as bearing upon the use of lime for an insecticide. About 20 vines out of a large vineyard had been removed, after being nearly destroyed by the phylloxera. About the vacant spot thus formed were vines attacked by the insects, but not yet badly reduced. On the surface of the ground around the stumps of the remaining infected vines, the proprietor had heaped lime from three to five inches deep. This operation had been performed six weeks before the examination I am here detailing, during which time heavy rains had been taking the lime downward in solution on the infected roots. The examination began with rootlets two inches from the surface, on which was heaped the lime, and, suffice it to say, that the phylloxera were found in abundance on the first root taken up.

It was found on digging around the vines of our experimental vineyard, near Sonoma, that where soluble fertilizers had been applied, in the spring of 1880, by making a basin at the foot of the vine and applying the material in solution, a dense system of little rootlets had pushed up to take possession of the artificial nutriment, and had formed a heavy tangle or network for absorption. It is generally known that roots will follow nourishment, but in this case there was a surprising abundance and quick appearance. It demonstrates the necessity of applying fertilizers where the roots are desired. Soluble fertilizers should not be placed between the vines unless thoroughly incorporated in the deep soil; nor should they be put at the surface about the trunk of the vine. If practicable they should be applied by means of a bar or dibble and placed underneath the vine.

Before closing this report it may be proper to present a question as bearing on the first conditions noted in the work. Though not universally the case, it was found in the majority of the vineyards examined that the infected spots, and, in many cases, the only infected spots of the vineyard were those low places where the water stood at the surface during much of the winter. These spots were characterized especially by being low, moist and poorly drained. This and the fact of the phylloxera being found in a good state of preservation two or three ft. under water which had been standing for six weeks, seem incompatible with the insect's hostility to water and inundation generally. That its existence is not a result of this low, wet and sour condition of the soil is proved by the parasite being found at some places in deep, well-drained, good soil, and on growing and otherwise healthy vines; and the question remains to be considered: Why does the insect adhere to and thrive best in the wet spots? This is certainly one conclusion properly arising from the facts present, viz, that good drainage must be had.

JOHN H. WHEELER,
Sec'y Vit. Commission.

HORTICULTURE.

The American Pomological Society.

EDITORS PRESS:—This society has just issued its report, and I am sure I cannot do the readers of the RURAL PRESS a better service than to give some account of the proceedings, and to summarize its latest conclusions respecting the best varieties of fruits.

This society is now acknowledged to be the leading institution of its class, and owes its high position mainly to the enlightened zeal and unceasing efforts of Marshall Pinkney Wilder, one of the most prominent and now the oldest merchant of Boston. Two generations of men have seen him filling the highest positions of honor and trust, yet as constantly engaged in most praiseworthy efforts to elevate the labors of husbandry by every resource of science, art and skill. The first President of the society, he has continued to hold that position for more than 30 years, winning the co-operation of every distinguished pomologist in the United States and of Europe, and now, with the silver crown of four score years upon his honored head, he dispenses from his accustomed place, words which are truly "apples of gold in pictures of silver." Many of the original members of the society, whose names are well known throughout the land, Downing, Thomas, Ellwanger, Barry, Hovey, Warder, the Parsons Brothers, still lend their influence to extend its benefits. Among the members present were representatives from the boards of agriculture of nearly every State in the Union except California. Dr. George B. Loring, United States Commissioner, William Saunders and Prof. Riley, from the Agricultural Department at Washington; Bliss, Dr. Hexamer, George Thurber, the Parsons, of Flushing; Patrick Barry, Peter Henderson, of New York; Mr. Hoopes and Thomas Meehan, of Pennsylvania; Mr. Berkmans, of Georgia; P. T. Quinn, of New Jersey; with a host of newer names of active and zealous horticulturists, from Florida to Nova Scotia, were there.

A feeling tribute was paid by the President to members deceased during the year. To the late Bernard S. Fox, our well-known culturist of the pear; to Robert Binst, the distinguished florist and seedsman, who had reached a ripe old age; to Mr. Bateham, of Ohio, a veteran agricultural editor of, first, the *Genesee Farmer*, and afterwards the *Ohio Farmer;* and to William Lawton, of New Rochelle, N. Y., who brought out the famous blackberry of that name, and died in the eighty-sixth year of his age; and to Dr. William Howsley, who has labored so long in perfecting the classification and nomenclature of our deciduous fruits.

Perhaps the most significant words of Mr. Wilder's opening address are upon grape culture. He says: "In the order of discussion, I have placed the grape first upon our roll, because there is no other fruit which excites so much enterprise and interest, or is of so much importance as a source of revenue." New and improved sorts will be produced, adapted to special localities, if the laws of hybridization are thoroughly mastered. Mr. Wilder believes that "before the close of this century, with our present zeal and skill, we shall produce native varieties of grapes that will rival the choicest foreign kinds." He instances the number of white varieties, all of superior excellence, which have come from the Concord. He thinks the Pocklington nearly approaches the Cannon Hall Muscat, and that the Duchess is as valuable for shipping as the White Malaga. By the White Malaga he probably means some of the Muscat, Muscatels or the Loga, for the grape known as White Malaga here is too tender for shipping. "Nature has, in her laboratory, infinite stores of the same elements which have produced our finest fruits, and we have only to knock at her portals and pronounce the *sesame*, when she will open to us the secrets of her wonder-working power." And so strong is the conviction of this Nestor of pomology in the importance of the work of improving our fruits, that he declares that, "if his life could be prolonged another four-score and three years, he would devote them all to this most benevolent and interesting employment."

The report read during the second days' session, by Hon. George W. Campbell, of Ohio, on the improvement of our native grapes by crossing, or hybridization, fully carries out Mr. Wilder's view of the future of native grape growing. Mr. C. says: "At a meeting of this society in Philadelphia, in 1865, the Catawba and Isabella were the only varieties recommended for general cultivation, and the Diana the only new variety named as promising well." Six years after the Concord and Isabella were added to the list recommended. In September of last year, 1,500 plates of native grapes were exhibited in St. Louis, which contained 249 varieties of American seedlings and hybrids, a great proportion of which are better than the Isabella and Catawba.

Work in the improvement of American grapes has demonstrated what might have been expected by the observant naturalist; viz., that no one grape is suited to all localities; neither is any locality suited to all grapes.

Mr. Bush, of Missouri, called the attention of the society to a new grape, first exhibited in 1880, at Rochester, called Taylor's Seedling, No. 14. He had made wine from the grape which closely resembled the claret St. Julienne. It is a black grape, hardy and prolific.

After grapes came the strawberry growers, Mr. Quinn, of New Jersey, leading the discussion with an exhaustive account of his methods of cultivation, picking, marketing, etc. He found the Chas. Downing the most profitable variety. He obtained last season, which was one of unprecedented drouth, 856 bushels from less than 10 acres, which averaged 14 cents a lb. net. The Chas. Downing was well endorsed by strawberry growers from Maine to Florida. The Cumberland Triumph was one of the most uniformly successful varieties in all climates.

Mr. Benjamin Hathaway, of Michigan, who originated the Bidwell, said it was a hybrid from the old Virginia Scarlet, and gave an interesting account of his experiments in crossing varieties. The Crescent was not very much in favor, though President Wilder said it was a good mother to breed from, and that its seedlings would be found to have a remarkable power to take care of themselves. You might pick it early and late, but it was not worth much when picked.

Dr. Hexamer thought it a good berry for undiscriminating palates, and profitable to the grower.

Monarch of the West was killed with faint praise, as it did not suit many localities. So with the President Wilder, which Dr. Hexamer believes is *the* best American berry, but which requires very high culture. Mr. Wilder said a neighbor of his succeeded in getting splendid crops by giving 12 cords of manure to the acre. Seneca Queen got a good many votes.

Mr. Barry, of Rochester, gave the Sharpless the preference. President Wilder said the Massachusetts Horticultural Society gave the first premium for the largest and best strawberry to the Sharpless.

Mr. Dempsey, of Ontario, found the Sharpless succeeded wonderfully when fertilized with bone dust and ashes, and Mr. Hope, of Georgia, praised its sweetness; though the flavor was delicious, it required no sugar.

No berry was more lauded than the new variety, the Manchester of New Jersey, which I am trying at Pasadena.

In a similarly exhaustive manner all the other small fruits were treated in turn, and then apples, pears and peaches, which I will report in another number. I have been so much interested and profited by reading this report that I find it hard to convince myself that I was not personally present at the meeting.

JEANNE C. CARR.

Pasadena, April 12, 1882.

SHEEP AND WOOL.

Points on Sheep Breeding.

EDITORS PRESS:—With your further indulgence I will give your readers some valuable ideas drawn from my experience in breeding fine wool sheep. In order to continue the improvement in a flock of sheep great care and good judgement must be exercised in the

Selection of Rams.

Improvement can be continued as long as the constitution and strength can be kept up, and rams found that are unlike the ewes in important points. The greatest improvements that have been made in sheep, have been by wide crosses with those of pure blood, but different. To keep up the constitution the wide cross—which is nothing more than opposites in all essential points—is not all that is necessary, but rams should be selected that have short, broad heads, their lower jaws far apart, and are well and stoutly made generally.

Between the lower jaws and under the tongue are the salivary glands, and if the jaws are well spread these glands will be large and afford a good supply of saliva, a very important ingredient in digestion.

When the head is long and the jaws near each other, these glands will be small and not yield sufficient to carry on digestion with a force always assuring the animal's good condition. Another important point to be considered in the selection of rams is, to select none but those that appear full of life, wide awake, with eyes not partly closed, but wide open. An active temperament is always indicated by a bright sparkling eye and the two set well apart. A ram with the right form and temperament, when crossed with ewes unlike himself, will give an increase, carrying heavier fleeces than sire or dam. In chemistry it requires two distinct properties to produce the third; in takes two distinct gases to make a drop of water, and two opposite winds to blow the misty vapor together to form rain drops; and in generation two opposites are required to produce strong and healthy issue. It looks as though the power that governs the universe had a great dislike to perfect sameness, for there are no two things in nature exactly alike; and few animals of the same family and line of breeding are so near alike as not to be easily distinguished one from the other. And because this is so, it is hard to tell if ever a point could be reached beyond which no improvement could be made.

In-and-in Breeding.

The question of in-and-in breeding often comes up for discussion among the best breeders of all kinds of stock. It is fully settled to a certain degree to be safe, but in all such experiments as these a full knowledge of the traits and qualities peculiar to both lines of ancestry must be possessed by the breeder, or serious mistakes will be made. In sheep breeding it rarely occurs that any chances need be taken in this particular. Near relatives may be coupled, with better results, when there is a sufficient difference existing between them, than those that are too much alike, when there is no relationship existing.

We are sometimes asked why, in the increase some years, one sex will predominate. It is held by some to be a universal law that exists in all of the different races of animals, that the natural tendency of the male is to produce the female, while the natural tendency of the female is to produce the male. The party in which the life principle is the strongest at the time of conception predominates. If it be the male, the issue will be a female, and if it be the female, the issue will be a male. Young rams kept in a triving condition and bred to old ewes in low condition, will be sure to leave more ewe than ram lambs. A knowledge of this fact sometimes may be turned to advantage.

Wrinkles.

It is a matter of great curiosity with some, how and why wrinkles come to adorn some thoroughbred Merino sheep in profusion and not others, and why they exist at all, and of what use can they possibly be. Nature has certainly a method in all her operations. In everything there must be cause and effect. Every living system in the animal kingdom is a chemical laboratory, manufacturing ingredients required for its growth and that of the material it produces, as well as supplying the places of worn-out matter. One of the ingredients composing the skin and wool of sheep is called silica. This is secreted in the skin before it passes to make wool, and if there is a large supply of it, more skin is formed than can lay on the sheep without being thrown out in wrinkles or folds. To get a very heavy fleece, such sheep are necessary, as in their blood a large amount of silica is stored; and as that is first attracted to the skin before it is changed to wool, wrinkles and folds are unavoidable on sheep that produce very heavy fleeces. By breeding sheep whose blood produces the greatest per cent. of silica of an even quality, the most and best wool is obtained.

[We are not aware that this has ever been demonstrated.—EDS. PRESS.]

Food.

In producing the best and heaviest fleeces much depends upon the quality and supply of food. That which contains the most gluten will produce the most wool. Wheat bran contains 18% of gluten—the same as oats; beans and peas contain 25%; corn abounds mainly in fatty matter, and of course will produce a large amount of oil, which is requisite in producing the largest growth of wool, because it keeps the skin soft, while it generates a large amount of heat, a rapid waste and supply.

A knowledge of the peculiar qualities, traits and requirements of animals is all that is necessary to insure success and profitable results; and sheep (reasonably good sheep), in any country where they will live and thrive, are more profitable than other stock by at least 40%. If anyone doubts this, and will write us through the PRESS, or otherwise, we will prove it or forfeit 40 sheep.

E. W. PEET.

Haywards, Cal.

THE FORMATION OF CLOUDS.—The French Society of Aerial Navigation recently entrusted MM. Dutet-Boitevin and du Hauvel with different balloon observations, among which was the study of the formation of clouds, taking into account the vapor tension in neighboring strata of air, but of different temperature, and also the release of the latent heat of vaporization at the moment of precipitation. The observations yielded the following results: 1. The clouds are formed in the zone of mixture of two layers of air saturated with moisture. 2. The clouds originate in the warm layer and dissolve in the colder layer. 3. They move in the direction of the belt of air which has the highest temperature. 4. The winds which are observed at the surface of the ground, which are only effects of the reaction of the principal wind, may have a hight of several hundred yards, and may have different directions in neighboring localities, while the upper current has a great regularity of direction and intensity.

THE BLUE COLOR OF WATER.—The *Photographic News* states that Mr. Aitken has been studying the blue color so characteristic of the Mediterranean and the Lake of Geneva, and his conclusions are embodied in a paper recently presented to the Royal Society. Mr. Aitken begins by saying that two solutions have been offered of this puzzling problem—the one explained the color as due to reflection of small suspended particles which did not reflect the lower rays of the spectrum, and the other, that the color was the result of the absorbent action of the water itself upon the white light, before and after reflection of these particles. The latter theory Mr. Aitken holds to be the true one. The smaller the number of white reflecting particles the darker or greener the water appears to be, Mr. Aitken having been successful in turning the still green water of lake Como into a bright blue by scattering finely divided chalk in the middle of the lake.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully solicited for this department.

Reunion at Alhambra Grange.

EDITORS PRESS:—In the *Patron* of April 22d you will notice a letter from the Secretary of Alhambra Grange, in which she extends to all the brothers and sisters in the State an invitation to be present with them on May 3d, at 10 A. M. sharp.

We, who have had the pleasure of enjoying the hospitality of this Grange on previous occasions, need no second invitation. Those who have never been, ought, if possible, to embrace this opportunity. If your Grange blood and enthusiasm are becoming lukewarm and sluggish, they will be resuscitated and enthused.

As Patrons, you can not afford to miss all the good things that will be said there. Brotherly love and good fellowship flow there as freely as the clear, sparkling waters of the mountain streamlet. You will be sure to go away with a renewed hope, strengthened Grange principles, and a more kindly feeling toward all mankind. Your mind will have pleasing thoughts to dwell upon for months after, that will go with you as you pursue your daily toil, thus making the heavy burden seem light.

If you have any new thoughts, do not be afraid to speak them here, do not keep them to yourselves because you think you can not clothe them in suitable words. Remember that simplicity is the soul of eloquene. And the most impressive speakers are those who are the most in earnest, and who thoroughly believe what they say.

You will find the pleasant Grange hall in the second story of the building, and very suggestive of Patrons and their labor; decorated in all places with emblems of Husbandry. Here, too, you will find the patron godesses have vouchsafed their choicest blessings.

On the lower floor you will find tables spread with all the luxuries of the season, and tempting, even to the dainty appetite of an epicure. To healthy, active Patrons who have traveled that morning, the temptation will be irresistible, and the kind sisters who will have provided this feast will have the pleasure of knowing that their efforts have been appreciated. No good cook likes to have taken from the table untasted the victuals over which she has spent time and brains—for it does take brains to do good cooking.

We can testify that the sisters of Alhambra Grange are adepts in this art. Go, all who can, to this reunion, and you will never regret having thus spent a pleasant and profitble day. CLARA DEMING.

April 25, 1882.

Co-operation.

By the revolution of the earth, the genial rays of the sun warm every part of its surface, preparing it for the co-operation of man. If man will accept the condition, mellow the soil, sow the seed and cultivate according to the law of growth and waste, the earth will reward him bountifully for his labor. But if man will not accept the condition, co operate, mellow the soil, plant the seed, thorns and thistles will be his reward. This system of co-operation is not a system of co-operative speculation and accumulation, but is founded upon the basis of equivalents. If he accumulates and hoards up year after year, without returning an equivalent for that which he has received, the earth will refuse to reward man for his labor. The sun co-operates with this earth, emitting heat for summer's growth, and winter's frosts for decay; preparing fertilizers to remunerate the earth for the summer's draft. If man would be remunerated for his labor, he must return the vitality taken away.

Man is so constituted that he is forced to labor for the comforts of life. The sun and earth are ever ready to co-operate with him for that purpose. Year after year the winter's frost admonishes man that decomposed fertilizers are demanded at his hand to replace the vitality taken away. For every production taken from the soil the producer becomes debtor to the soil for the vitality expended in its production, and himself or his children after him will have the debt to pay, or suffer the consequences. Thus it is plain that nature's plans are co-operation and remuneration. The sun never flies into a passion and refuses to send forth heat to warm the earth because the lazy and selfish refuse to cultivate the soil; neither does the earth put on high heels because man won't mellow the soil and plant the seed, but keeps on in its steady routine of duty, whether man will co-operate or not. Man is an intelligent being, capable of perceiving, comparing and arriving at conclusions. In nature no two are organized alike, in shape or form. Having different developments and organizations, they have consequently different abilities and duties to perform, necessitating co-operation to perform those duties. Every individual should co-operate with every other individual for the healthy existence of the whole. When there is an unwillingness to co-operate on account of these different developments of matter and mind, stagnation, confusion, and often cyclones whirl through the social fabric, causing desolation and destruction to the whole framework of society.—H. GREENE, Lecturer Enterprise Grange, Wis.

Work for the Grange.

Work develops muscle and brain, and develops in both the power for something higher and better. Muscle unused loses its power, the person is dyspeptic, suffers from the "blues," "things are not what they seem," and he confers no benefit upon self or his surroundings. Brain, unemployed, loses its brightness, its crystal, is dull. "A mind quite vacant is a mind distressed," and the individual sinks instead of rising and developing "onward and upward." The mine unworked develops no gold, the farm untilized goes back to thorns and forest, the water unused grinds no grist, the oxen unyoked plow no field, the Grange uncultivated produces no bright sheaves for the members or the world at large. Patrons, at this season of the year, the farmers' first degree, let us think on these things, and as we follow the plow or scatter the seeds that, with our labor and faith in God, are to grow and feed us and others; ask ourselves the question, is our Grange well tilled? are we cultivating that farm? are we developing its grand resources? are we using all its advantages? or are we permitting the ground to lie fallow, the thorns and briars to choke the crops? are muscle and brain unused and useless? is our Grange or its members dyspeptic? has it got the "blues" for want of healthy exercise and work? Let us, as we cultivate our farms, keep our plows bright by diligence; also "plow deep" the Grange fields, and "keep the plowshare of our minds bright by thinking and active use." The plow left idle in the furrow, the Patron who neglects his Grange opportunities, soon come to the same condition—rusty. Let us then be up and doing in the Grange, as well as upon our farms, and keep it well before our minds that the crops upon both will be brought forth, will be developed just in the same proportion that we actively employ both mind and muscle. "Work wins."—*Grange Bulletin.*

The Grange in Oregon.

A "Granger," writing to the Harrisburg *Disseminator*, says: In 1876, the Grangers attempted to put on a line of steamboats to run from Albany to Portland, and then there was a compromise made with the O. S. N. Co., with the understanding that they would carry freight from Albany to Portland for 9 cents instead of 14 cents. This transaction saved the farmers of Linn county that year $72,000. By co-operating together, the Grangers of Linn county have been benefited a great deal financially. The Order is also a social and moral institution. The lectures on the moral part were excellent, showing that the associates a young man or lady kept had a great influence with them, and that the influence of the substantial farmers and their wives was much better for the young people than the influence of a certain class that are around the different saloons. My opinion is that there is no organization that is having as good an effect on our children in Linn county as the Grange has to-day. Nearly all the farmers' children on the prairie are joining the Grange this winter and spring, and it does my heart good to see how much good it does the sisters to see their children becoming members, and to know that they are coming under the influence of the substantial farmers and their wives, instead of those young men who run around the "dead falls" in the different towns. I am satisfied that there are but few farmers in Linn county but what would join the Grange if they understood the objects of the Order and the moral influence it will have on their children.

THE DEPARTMENT OF AGRICULTURE.—It is announced in Washington correspondence that the enlargement of the Department of Agriculture, with its Commissioner as a Cabinet officer, will, as last year, come up late in the session. Seven bills have been introduced in the House, and one in the Senate, on this subject, giving some idea of the general interest in the question, and that farmers and farmers' interests are receiving some attention. Four of these bills provide for the elevation of the Commissioner of Agriculture to full rank with the Treasury, State, and other Departments. The Senate bill, introduced by Senator Davis, of West Virginia, provides for the creation of a Department of Agriculture and Commerce on an equal footing with the other departments, and to include the present Department of Agriculture and the present Bureaus of Public Lands, Geological Surveys, the Light-House, Coast-Survey and Life-Saving services, the Weather Bureau and the railroads.

OJAI.—The extraordinary merits of the Ojai valley for asthmatics and those with pulmonary troubles are being widely made known, so that there has been at least double the number of that class there this season than ever before; while its attractiveness to mere tourists is evidenced by its having become the favorite and fashionable through route between Santa Barbara and Los Angeles for those looking for charming scenery.

Agricultural Notes.

CALIFORNIA.

COLUSA.

LEVEE BUILDING.—*Sun*, April 22: Quite a party of gentlemen went down to the head of Butte slough on Tuesday last, to examine a piece of levee being built by L. F. Moulton. It is about the best levee that has been built on the river in this county. It is from 12 to 15 ft. wide on top, and is 3½ ft. higher than the highest water-mark; and, being built when the ground is wet, makes it better than those levees built in the fall. The earth packs and bakes until it becomes so solid that it does not wash, even with the water running over it. Mr. Moulton has about two miles river in front, above Butte slough, and most of this has now been leveed. As there has been no levee on any portion of this land heretofore, and as the increased hight of the river has been permitted to flow out over this two miles, it is very certain that it will have the effect of raising the hight of the flood for some distance above, at least during the first rises in the river. People owning land just about this point, on either side of the river, must take notice and build higher and stronger levees, or else they will have a fearful crevasse. Mr. Moulton is making the levee wide enough for a road on top, and will also have a road on the river side of the levee made by widening the base. When completed to Butte slough, a bridge across the slough to the levee of district No. 70 will give us a good road by way of the bridge to Meridian, Marysville, etc. Mr. Moulton has a fine body of land in that vicinity subject to overflow, and he expects to plant it to jute, broom-corn and such crops as grow after the subsidence of the flood waters in the river. Instead of being worthless, this land can be made to bring a rental of $15 to $20 an acre per annum.

AGRICULTURAL SOCIETY.—The Colusa Stock Association has almost completed its arrangements for incorporating under the laws of the State. The name will be changed to Colusa County Agricultural Society. The Directors named in the articles of incorporation for the first year are, W. H. Belton, Wm. Ash, Peter Peterson, Dillon Sherer, Wm. Billups, E. W. Jones and W. S. Green. It is the intention of the Directors to get up a fair this fall.

CONTRA COSTA.

TRAPPING GOPHERS.—Point of Timber Cor. Martinez *Gazette:* The gopher, that destructive rodent, caused quite an alarm among the farmers interested in alfalfa. The question was, what shall we do with our gophers? shall we give up alfalfa, or shall we spend its value in trying to kill them? I am pleased to state that we have not done either. One farmer discarded poison and tried traps. We all tried them; and to-day the gopher is nearly exterminated. The California gopher trap and the Newhouse steel trap are the best. One man with 50 traps can average 35 gophers per day. Those who have tested the value of alfalfa hay thoroughly, for horses and cattle, prefer it to any other.

FRESNO.

THE CANNERY.—Fresno Cor. *Delta* People here are somewhat discouraged over the failure of the fruit cannery company to secure desirable rates from the railroad company. The members of the canning company say they cannot make such an enterprise pay at such exorbitant railroad rates. It had been hoped that the railroad company would encourage any undertaking for the promotion of an increase of business, but such hope seems to have been vain. It is generally believed that the Central Pacific will make no concessions to Fresno county, or to any other sections where it is not so compelled to do by competition or by legislation. Messrs. Oden & Hay, however, have determined to do all they can in the matter, and if it be possible to proceed with the construction of the cannery, they intend to do so.

LAKE.

EDITORS PRESS:—It has been a cold and backward spring here. It often begins to rain from the south, then suddenly the wind comes from the northwest and blows off dry and cold. A slight frost one night last week killed some beans. We had a few very warm days the first of the month. Some grain on low, moist land, is looking well, but generally on upland it is rather backward. No frost as yet to hurt fruit, but it is to be feared that the continued cold weather may do harm.—C. P. SCRANTON.

LOS ANGELES.

BEEF SUPPLY.—*Mirror*, April 22: In one decade, from being a large beef-exporting county, Los Angeles has become an importer, and has to cast about to all our contiguous territory for the wherewith to meet the demands of our rapidly increasing population. We deem it well to call general attention to this dearth of beef cattle, hoping we may attract the attention of stock men and induce them to prepare to meet the immense demand of the near future. Already have our butchers exhausted our own supply of cattle, and about all that is worth eating that can be obtained readily from Arizona, as well as the near northern counties. And they are about nonplused at the outlook. For the future we must draw our supplies from Texas and Nevada or enter into competition with San Francisco in her immediate surroundings and the northern counties of the State. And accepting either alternative, we have before us the cold fact that choice beef in the future will be an expensive luxury. Already butchers demand twenty-five cents per pound for choice cuts of steak at retail, and twenty cents for ordinary. And this, with the present rates for beef on foot, where purchased, and the high freights on cattle, leave the butchers none too much profit. These rates are far in advance of a year or two ago; when we could boast of having the best beef in the land at figures below most other markets. In view of the broad acres we have that may be turned into fields of alfalfa and feed thousands of cattle, this state of oppression should not be allowed to continue long. A twelve month can give us the feed, and stock the fields by importation, if capital can be turned into this sure channel of profit. Who will profit by taking stock in this, one of the best of our money bonanzas.

THE COUNTY THIS YEAR.—*Express*, April 24: It is now a settled fact that Los Angeles will produce this year the largest, most diversified and most valuable crop ever raised in a single season; and that, too, relatively to the acreage planted. The wheat and barley crops will be immense, and the fruit crop prospect promises to surpass all previous years. In estimating the volume of agricultural production this year, it must be borne in mind that a much wider acreage has been planted than ever before, and if it had not been for the unpropitious character of the weather in the early part of the season, the acreage sowed would have been at least 20% larger than it is. But even with that drawback, the vast extent of land plowed and sowed at a much later period than has heretofore been usual, will swell the volume of the harvested crop far beyond what it has ever been in previous years. There are at least 5,000 more acres tilled in San Fernando valley than were cultivated last year, and from the present appearance of the growth, the yield will be at least 35% heavier than in 1881. A large area of new land has been tilled on the Sausal Redondo and Centinela ranches, and never before was there so broad an acreage sown in the lands reaching from the foothills of the Cahuenga range to the ocean. The Assuza country, too, will give an unprecedented account of itself this year. The settlement of titles in that fertile region has enabled the farmers to develop the resources of their lands to the utmost, and an unusually large crop has been planted. In the Pomona and Spadra region there has been great agricultural activity, and the fact that there has been a large accession of newcomers there has caused the cultivation of extensive tracts of new land. The crops are looking very promising, and the harvest will be heavy beyond precedent. The Monte district and the Puente country also make a fine agricultural showing, and will contribute very large crops to swell the general returns. The southern portion of the county never was in a more flourishing condition, and besides the great fruit and vineyard prospects, shows a very large increase of wheat and barley fields. It is needless to say that the rich country this side of the Santa Anita ranch, and the great agricultural and horticultural region embraced between the San Gabriel and New rivers, with the extensive tracts reaching from the Anaheim railroad to the ocean, are burthened with growing crops. Wherever one turns, the signs of a year of great agricultural prosperity greet the eye, and it is risking nothing to say that the yield of cereals, as well as of all other products raised in this section, will far surpass in volume and value that of any other year in the history of Los Angeles county.

NAPA.

THE PROSPECT.—*Reporter.* The last rains came at the most opportune time to benefit all of the grain crops languishing for more moisture. Recent reports from Berryessa valley are to the effect that growing wheat suffering for want of rain has been redeemed from all danger of the ground not being sufficiently saturated, and that at no time previously in the history of the valley has the prospect been better for a good crop. From the lower end of Pope valley, which is all put in grain, similar encouraging reports come, and the statement is made that the prospect for the best crop that has been made for years was gladdening the farmers' hearts. The rain has been in quantity in Pope, but the last rainfall was needed to refresh the growing crops, and give them a revived vitality. Chiles and Capell valleys tell like stories, while the smaller valleys, given up to pasturage and hay crops, are looking beautiful. Napa valley proper has not a very large acreage in grain, but the seed was gotten in in good season, and the fields look very promising for an exceptionally fine yield. Light frosts have not injured the fruit or grape prospects, which could not be more encouraging at this time of year.

SANTA CLARA.

PARIS GREEN AS AN INSECTICIDE.—Prof. Hilgard's letter, read before the Horticultural Society: I have no doubt that Paris green can be successfully used against the tree caterpillar, as against the potato bug or the cotton caterpillar. But I should consider it radically objectionable to use it after the fruit is formed on apple or pear trees, on account of danger to consumers, and I connot consider it is likely to be really efficient against the codlin worm. Observe that when caterpillars eat leaves they will be sure to get some of the poison some day of their lives; but it will be the merest accident if the codlin moth happens to get hold of a particle on the minutest surface speck it bites. I think of Paris green a good deal as I do of strychnine used against squirrels, instead of

carbon bisulphide. It is a poison that stays, and you never know for certain who will eat it in the end. Carbon-bisulphide, lye, coal oil, tobacco decoction, whale-oil soap, etc., disappear as poisons soon after their use—act at once or not at all. While this fact involves repetitions of the process, it seems to me to be a small evil as compared with the danger to life and health incurred in the use of the fixed poisons. Even potatoes have been poisoned from having been covered over with their vines to keep them from frost, the latter having been treated for the potato bug with Paris green.

LOS GATOS.—EDITORS PRESS: Our part of old Santa Clara still presents a fine prospect for the coming harvest. The grain fields are looking finely, there having been rain enough to carry the crops to maturity, while the bearing trees are loaded with fruit to an excess far beyond what can ripen, giving growers an opportunity to pick off the smaller settings, and harvest only the largest and finest fruit, thus guaranteeing a choice article to market. I have been over many of the newly planted orchards and vineyards, and noted with much satisfaction the success that has attended the putting out of our vines and trees. There seems to be a special adaptability in the soil of this section for fruit raising; its situation, its kind working, with great power to retain moisture, makes it very desirable. It would do you good to stand on some of our hill-tops and look abroad and mark the great number of fruit-raising acres to be seen, climbing, as they do, the great hills at the head of the valley, while spread out before you, like a beautiful panorama, lies the great garden of Santa Clara valley. Surely He who planned this country is worthy of all praise for His beneficence—for His great goodness in giving to an enterprising people such a heritage. Our town is growing steadily. Newcomers are building homes where thrift and work show their earnestness, while the generous soil sends back its production in profuse abundance.—CLAYTON, Los Gatos.

SUTTER.

CROPS.—*Farmer*, April 21: The progress of the crops in this county is satisfactory. The summer-fallowed wheat has attained good size, though not so far advanced as in some years. The winter-plowed lands show crops of various growth. We hear considerable complaint of weeds in wheat. This is not confined to any particular locality—is found more or less all over this and adjoining counties, and by some is attributed to the overflow a year ago. The bottom lands on the Feather river between this point and Oroville have always been very productive of weeds, and Feather river having "spilt" itself out over the valley, carried with it the weed seeds, now complained of. Barley promises a good crop; the earlier sown is heading out.

TUOLUMNE.

EDITORS PRESS:—A recent visit to Sonora enabled me to ascertain the extent of damage to the fruit crop by frost. The general opinion seemed to be that the trees will have all the fruit they can reasonably carry. The prospects seem to be encouraging to fruit growers. Gardens certainly have a splendid appearance, with their rich foliage of green and bloom. Modesto papers complain because of a light supply of fruit from this county, giving reasons, etc. The codlin moth is one cause, and maybe the most difficult to overcome. The Chinese also are blamed for drying what ought to be sold to cities and farmers in a green condition. Another reason exists. Peddlers find that their expenses eat up most of the profits. Small is the amount from sales, when profit and loss is figured up. What is realized from dried fruit is almost clear gain. The young trees set out this season are to produce fruit of a superior quality, with a view of reaching market by rail—a problem which is being daily solved, promising to be a reality within two years. Not one load in ten has gone to the San Joaquin plains, as in former years; hence the complaint in Modesto papers. The weather is really cold for this season of the year, the glass ranging from 30° at night to 60° in day-time. The rains have been just sufficient to keep crops and fruit trees in splendid condition. Abundance is written on nature's products all around. What splendid panoramic views we of the foothills enjoy, surrounded by high conical hills, from tops of which the high Sierras and level plains are in full view. The scene toward the snow-capped peaks of the north presents a picture of desolation. No vestige of life or busy haunts of men in view to relieve the scene; still, it is grand in its rugged aspect—rich in its minerals, timber and fruitful valleys; pure in its eternal, snow-capped hills—the storehouse of health and wealth through summer's scorching heat. What a dreary waste the scene presents when viewed as a panoramic picture. The stranger would never surmise that thousands of happy homes, luxuriant dwellings and gigantic enterprises were being daily wrought out amidst the rugged hills and smiling valleys which everywhere abound.—JOHN TAYLOR, Chinese Camp.

VENTURA.

THE PROSPECT.—*Free Press*, Apr. 19: There is, we think, no doubt that the people of Ventura are to-day more prosperous than at any previous time in their history. Two years ago, owing to the low price of hogs, corn, barley and beans—coupled with the terrific losses of the preceding rainless year—our farmers were nearly bankrupt. We don't care to publish the percentage of them who were deeply mortgaged; but it was appalling. Last year, things took a turn. There was a splendid crop of every staple, and prices of all products went up to paying rates. One good year enabled the farmers to pay off (as shown by the records) at least 80% of the indebtedness incurred during three exceptionally bad years, and the splendid crops now coming forward will place all of them ahead of all the world, including banks and money lenders. The wheat, barley, corn, beans and honey crops never looked more promising than they do to-day. Where else—in or out of California—are the farmers obliged to run mowers over their wheat and barley crops and cut them back, so as to prevent them lodging and thereby rendering them difficult to harvest? Almost every grain farmer in this county is doing this thing to-day, in consequence of the over-exuberant growth. In addition to this promising crop, it should be stated that the very early rains enabled the farmers to get their plows at work weeks sooner than usual, and consequently a greatly increased breadth of land has been sown.

YOLO.

MILDEW AND LEAF HOPPERS. — Woodland *Mail*: We learn from Mr. Blowers that this is the proper time to protect vines from mildew and the leaf-hopper. If delayed much longer it will be too late for the season, and the result will be the same as last year—many will lose their vines. All that is to be done is to scatter sulphur plentifully on the vines. The dredging-box, with which it is done rapidly and thoroughly, can be found at Kuhn's tin shop in this place, as he makes them for everybody. With this instrument a man can go through two or three acres of vineyard per day and put the vines beyond the reach of harm from mildew. To protect from the leaf-hopper, the work of sprinkling with sulphur will have to be repeated once or twice at an interval of nine or ten days. Attention to this matter promptly will be likely to save many from serious loss.

YOLO

STRAWBERRY FIELDS.—Brown's Valley, Cor. Marysville *Appeal*, April 21: The strawberry gardens in this neighborhood are striking illustrations of what may be accomplished by energy and perseverance. As barren and forbidding as the natural aspect of the land appears (save for a few weeks in spring), all that is seemingly necessary to produce all kinds of fruits and berries in the greatest abundance is irrigation and cultivation. The strawberry crop for this season is most promising, but is several weeks later than in the last season which, it will be remembered, was remarkably early. Palmer and Barton expect to commence picking by the first week in May.

Another Steam Spader.

EDITORS PRESS:—I saw an article in the last number of the PRESS headed, "A Steam Spader." In the fall of 1856 I was in Illinois, and much was said about steam plows. I conceived the idea of a steam spade, as did Mr. Snow. I studied out a plan at that time for a steam spade to work, with blades arranged in a wheel, like the paddle-wheel of a steamboat. Instead of the paddles being stationary, they were to have pivots at each end, and attached to the frame of the wheel, so as to be reversed by a peculiar device, the same as I find in your great disseminator of knowledge, *i. e.*, the cylinder press. The spader should be constructed on a strong frame engine, and all on the same frame, with three carriage wheels. The spader should revolve in the direction the machine is going, and each blade in the wheel must be reversed as it attains a certain depth in the ground, and depositing the earth just the same as a man would in spading by hand. The wheel containing the spades must work by gearing, and revolve faster than the carriage wheels. Also, the same machine can have a grain seeder or drill vised on the frame to seed the ground at the same time.

The spader revolving in the direction of the progress of the machine assists its progress, as will be seen, instead of retarding, as with the plow, or drag. This is the reason why I studied up the spade. I never heard of any other man thinking of such a machine before I saw Mr. Snow's article. I have often mentioned my plan to engineers and machinists, and stated to them that I could not make it nor put it into practice, and would be glad if any man who was able would try it, and I would do anything I could to assist in getting it up. I have always thought, as Mr. Snow does, it would afford a better tilth of the soil, and consequently make the land more productive. I never have encroached upon business to study inventions. This occurred to me from reading about steam plows, and being a farmer myself, I thought it would be a valuable thing for cultivating the nice prairie land of Illinois.

Red Bluff, Cal. J. H. INGALLS.

THE Southern Pacific railroad company has inaugurated a complete system for taking care of sick or injured employes, and for providing those who are permanently injured with suitable employment. A tax for the Hospital Fund of fifty cents is levied on the monthly salary of each employe. The hospital is situated at Tucson, and all the sick on the line between Yuma and El Paso, are sent there and cared for free. About twenty patients a month are received.

News in Brief.

PERSONS intimate with Howgate, say he is in the mountains of Pennsylvania, and that he will not return for trial until he desires to, and that in the mean time he will be supported by those who are connected with him in the frauds in the Weather Bureau.

MARK SHELDON, the well-known Sewing Machine agent, has removed to 9 and 11 First Street.

AFTER expending several thousand dollars in experimenting on the one-track railroad in Tulare county, the enterprise has been abandoned. The track and rolling stock were sold under attachment, and the engine will be used in hoisting coal from a mine near Huron.

THE collapse of the American Electric Light company of Massachusetts, of which Col. Fred Grant is President, is announced. Among the directors were Wm. Windom, ex-Secretary of the Treasury, and other prominent Washington gentlemen. The company owes $150,000 and has no assets.

WOOD CITY, M. T., says a correspondent of the Butte *Miner*, is growing marvelously. All the roads leading there are crowded with immigrants and miners, and buildings of all sorts are being put up in the town. It is a pushing, booming mining town, and every one there has big prospects.

IT is admitted by the Land Commissioners of Texas, that claims have been allowed for nearly 8,000,000 acres of land in excess of the public domain, certificates for 7,508,670 acres having been issued to railroad companies and others over and above what vacant land there is in the State subject to location.

F. A. KIMBALL, of National City, San Diego county, has forwarded information to the Immigration Bureau that there is every probability of the formation of a county association for San Diego. A party of English capitalists, now in China, have sent word that they intend to locate in this State some time in November next.

THE Wood River *News* says: The Central Pacific are to commence the construction of a line from Humboldt Wells to intersect the Northern Pacific in Montana. The proposed new line will skirt the Wood River mountains, and branch roads will run up the valleys of Big and Little Wood rivers, in opposition to any lines the Union Pacific may build.

A LOT of shoemakers who passed through here from the East for California, a few weeks ago, says the Elko *Independent* of Wednesday, returned on their route yesterday, by the emigrant train. In conversation with citizens they stated that white artisans in their line had no business in California, the Chinese having completely monopolized that trade.

REPRESENTATIVES of the Big Oak Flat road and stage line, came into Yosemite valley last week. They report a belt of snow some 9 miles wide and from 7 to 12 ft. deep; but, fortunately, they were provided with snow-shoes for their horses, and met with neither trouble nor delay. These snow-shoes are 9 by 13 inches, made of ash plank a full inch in thickness, in the center of which is an iron band, and which is firmly fastened by screws across the foot of the horse. This holds the foot firmly to the board. The horse acquires a sort of side gait to his feet, so that one shoe passes the other very readily. In no place did the horse snow-shoe sink over four inches, while men without snow-shoes sunk in the soft snow to their knees. This experiment is a great success, and the superintendent says that he can now bring tourists to Yosemite at any season of the year and over any depth of snow.

Pacific Coast Weather for the Week.

[Furnished for publication in the PRESS by NELSON GEROM Sergt. Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending 11:58 A.M. Wednesday, April 26th, at noon, for the stations named:

Date.	Olympia.	Portland.	Roseburg	Red Bluff	Sacram'to	San Francisco	Visalia.	Los Angeles.	San Diego
Thursday.	.06	.10	.19	.00	.00	.00	.00	.10	.05
Friday....	.66	.32	.17	.—	.00	.00	.00	.00	.01
Saturday.	.68	.83	.73	.74	.12	.05	.00	.00	.00
Sunday ..	.03	.02	.09	.00	.04	.00	.00	.00	.00
Monday ..	.20	.27	.79	.	.18	.06	.00	.—	.00
Tuesday ..	.27	.53	.28	.00	.00	.—	.00	.00	.00
Wed'sday	.11	.34	.41	.00	.00	.00	.00	.00	.00
Totals ...	2.01	2.41	2.66	.74	.34	.11	.00	.10	.06

SPRING TOOTH HARROW.—The California spring tooth harrow and cultivator is continually winning new friends and new approval from old ones. It is being used extensively for fallow working, and a marked increase of yield is reported, because, doubtless, of the fine tilth produced. We are told that over 2,000 have been sold, and two large farmers have ordered them in lots of 40 and 20 each, after having fully tried them last year. The spring tooth harrow is handled by Bachelor & Wylie, being successors to Bachelor & Van Elder. The new firm have removed from 900 K street, Sacramento to 31 Market street, San Francisco, as may be seen by their advertisement in another column.

SOAP.—The Alta Soap company manufacture all kinds of toilet and domestic soaps of the best quality. The Eagwer Borax soap has a reputation second to no other soap, and families who have used it once prefer it to any other kind, as it has a peculiar faculty of removing grease from flannels and leaving them bright and soft.

POULTRY YARD.

Notes on Incubators.

EDITORS PRESS—The article on artificial production and care of fowls, in your edition of April 15th, has just come under my notice, and I deem it a duty, as one interested in the subject, to question some of the assertions set forth, as it may tend to mislead beginners, causing them to fail, hence bringing artificial incubation into disrepute. I, for one, would have taken it for the views of only one man, or passed it over, had it been from a correspondent; but bearing, as it does, the opinions of the RURAL PRESS, and knowing that your only desire is to promote the welfare of your patrons, and give the true principles of any art, I beg leave to quote the views of the very best writers we have on the subject, under the following heads:

Situation of Thermometer in Connection with Actual Temperature. — Your article reads: "The temperature is regulated by means of a thermometer, which is placed in the water at the top, and this indicates the actual temperature much better than when a thermometer is laid among the eggs, as in the latter case it will not be shown, sometimes within 10.°" Lewis Wright, in his illustrated book on poultry, the standard English authority, commenting on Mr. F. Schroder's incubator, page 54, gives his opinion of the above, viz:

"The principal defects which strike us are the absence of a regulating valve, and the immersion of the thermometer in the tank, or source of heat, instead of being where it should be, in the drawer or chamber which is heated. The tank may preserve the same temperature, and yet that of the egg drawers differ widely, according as that of the room rises or falls. Hence this incubator is more to be studied for the excellence of its general plan than copied in its various parts, and has never become extensively useful or popular, though cheaply made."

If any person would think but for a moment, they would agree with Mr. Wright. A hen sets with her breast on the eggs, supplying the heat directly to their upper surface. The proper heat for artificial incubation was ascertained by inserting a thermometer between the hen's breast and the eggs. Thus we were taught to place the thermometer directly on the eggs, and the required amount of heat by dame Partlett herself. All leading incubators to-day have the thermometer so placed. The article further states that the thermometer placed in the tank of water on top registers the actual temperature over the eggs, sometimes 10° closer than when it is placed directly on them. I must say, a most startling statement, and would like to see it proven.

Automatic Regulator.—"No attempt has been made to employ voltaic or other automatic regulators; but very little attention is needed to keep up the proper temperature."—(RURAL PRESS.) A. M. Halsted, of Rye, N. Y., is the standard American authority. In his work on Artificial Incubation and Incubators, page 8, has the following, touching the above.

"The positive necessity of this is obvious to every one who has attempted to hatch chickens artificially, for no matter how nicely a machine may work in a room of even temperature, when subjected to a variable temperature, it cannot retain the same heat. If to use an incubator without any regulating apparatus, it is necessary to have an evenly heated room, why purchase any machine at all? A tank of water with a lamp under one end, and a shallow tray of eggs under the other, will answer every purpose. If the heat of the room is kept uniform, and the flame of the lamp of even hight, the heat generated by and radiated from the tank of water will also be regulated and even, but if the temperature of the room varies the tank of water will vary with it. As well attempt to run a steam engine without a governer, as an incubator without a regulator."

No need of further comment. Halstead is our *Webster* on incubation.

Artificial Warmth.—Authority on this point is as unanimous as on any of the others. A difference in climate may somewhat change the mode of rearing chicks, but artificial warmth is essential, and that only second to the heat in the incubator itself; so a beginner would be wise to rear his chicks as your article suggests, with the very good exception of the house and glazed sash, which is most proper and worthy of attention. Some place within the house should be supplied with warmth for night, of an artificial character, under which the young could hover, for once thoroughly chilled, no amount of nursing or care will ever cause them to recover. "The box and blanket" would fail, during our cold winter, nights and weeks of damp, chilling rains, for it is then artificial hatching is at its hight, rearing chicks for the early spring market. During the summer months incubators rest, it being difficult to get properly impregnated eggs; the chicks hatched are puny, and it takes months of care and attention to bring them to maturity, owing to the lack of strength in the egg and heat of weather.

These facts are well known to poultrymen here, and will be in accordance with their experience, I know. I hope the reader will not consider this letter an endeavor to run down any particular incubator, but a statement of facts, which I beg leave to submit.

Petaluma, Cal. I. L. DIAS.

A LARGE number of deaths have lately occurred among the Russian creole population in Alaska. Through want and disease these people are rapidly decreasing in numbers.

Butter.

When bread goes down and wit goes 'round,
And every palate's in a flutter,
The gastric muse is surely bound
To sing the praise of golden butter.

Not only in the winter morn,
When buckwheat pancakes smoke and splutter,
Nor on autumnal ears of corn
That bathe themselves in golden butter,

But, slipping on, through History's page,
Where other unctions clog and clutter,
And dripping down from age to age
Behold the streams of golden butter!

When Jason left the shores of Greece,
Commander of the Argo cutter,
He went to find the famous fleece
That Phrixus took from golden butter.

When miners gathered at the dam,
Above the mill of John A. Sutter,
He found his old hydraulic ram
Transformed into a golden butter.

And at our great Centennial rout
A Western woman deftly cut her
Clear way to fame, by carving out
A lovely girl in golden butter.

Let oleo and other shams
Slide back into their native gutter,
While dairy-maids, as high tide clams,
Are happy in their golden butter.

With biscuit light and tea-pot bright
The storms without may roar and mutter,
But we sit calm at candlelight,
And revel in the golden butter.

In peaceful days, our days of strife,
When bane or bliss is too, too utter,
We'll grease the jarring wheels of life
With pretty pats of golden butter.

In days of rain or days of drouth,
With flowing style or futile stutter,
While melts it not within our mouth,
We'll sing the praise of golden butter.

—*Rossiter Johnson.*

Judged.

"She had real good jedgement," said Widow Brooks to Miss Eunice Pell, as they sat together at a funeral, in the pause that followed the religious services, and allowed the neighbors to file silently by the coffin and look at the stern features of the dead, settled now into that dumb and wonderful repose unknown to life or sleep.

"Well, I expect she hed," said Miss Eunice, nodding her rusty black bonnet at the widow's.

"She was a master hand to tell her jedgements all abroad, too; she didn't make no bones about sayin' what she thought of folks, be they who they may."

"Well, I dono as that's what I meant. I was thinkin' about her faculty for housework and sech. You never see no poor bread, nor no soft pickles, nor no worked preserves to her house; seemed as though she knew jest the identical minute cream had riz all it would, or bread had rose jest right."

There would have been more than one echo to Miss Eunice's characterization of the departed Mrs. Weeks, if the outspoken had been the spoken thoughts of several who had "viewed the corpse," as country phrase had it, and wondered in themselves what sort of atmosphere, in the accepted idea of heaven, would suit the out-gone soul, or which of the "many mansions" would be a congenial home for the rigid spirit earthly companions had never suited. Let us record one of her judgments."

When Mary Prince married Augustus Barber and settled down to her life in Barton, she knew just what she was coming to; her husband was a poor man, beginning life as a dealer in a small way, in flour and feed. Her preparations had been simple and inexpensive, for she was not able to spend money freely, being a poor minister's daughter. Augustus had meant to study for the ministry, but his health failed; active life was peremptorily ordered for him, and in the clear air of Barton he had become well again and comparatively strong. Both he and Mary took an active part in the Sunday school, and made friends as naturally and easily as two bright, kindly young people will in an ordinary New England village.

Mrs. Deacon Weeks was a widow; her patient, excellent husband had been dead five years. But she was a woman of dominant temper and critical disposition, and magnified her husband's office, even after he had laid it down, into a needful supervision of her neighbors and their affairs, particularly if they were members of the church.

Now, Mary Barber had relations who were wealthy and generous, and often gave her presents of articles they knew very well she could not buy, and she accepted them with the meekness and gratitude necessarily educated into the children of those laborers in the ministry who are never paid their due hire, and so have to take gifts of charity. But Mrs. Weeks knew nothing about Mr. or Mrs. Barber, except that they were poor. When a cousin, just going into mourning for her father, sent to Mary the pretty silks, soft cashmeres and black lace hat wreathed with pansies, for which she had no further use, they came to the little woman as a real God-send. "Oh, Gus," said she, "look here! see what Georgie has sent me! Now I shall not have to buy a dress for two years at the very least. I can just shorten all the dresses, for we could always wear each other's things but for their length, and I have not even a summer bonnet to buy; my last year's straw will do nicely for common wear."

Mr. Barber, like most men, liked to see his pretty wife well dressed; they had been married two years now; the trousseau was getting worn and a little dingy; the black silk needed trimming again, for its cheap fringe was already rusty, and Mary knew very well that there was no spare money to renew even the ornaments of her scanty wardrobe, much less the gowns themselves; but here, on a quiet gray silk, was black lace enough laid over the knife plaitings to trim all her old silk afresh, and the plaitings satisfied her taste without lace above them; and very fair and elegant she looked in that gray dress, fitting her perfectly as it did, with gloves and parasol to match it, and the little French bonnet set on her waves of gold-brown hair.

But Mrs. Weeks glared at her across the old meeting-house with indignant eyes, and at the "noon-spell" prayer meeting made a long and loud petition that the "young members" might be rebuked and convinced of the sin of pampering the lust of the eyes and the pride of life; that they might deny themselves of such extravagance and finery in regard to the poor, perishing body as made scandal in the church, and come out and be separate from a sinful world. Mary Barber, just invited to join this select assembly, which always met during intermission at Widow Brooks' house, wondered who Mrs. Weeks was praying at, for that her petition had a personal application was only too evident; after her first serene satisfaction at being well-dressed once more, and her shy joy in her husband's admiration, Mary had not thought again of her dress. To tell the truth, it was far less in her mind than the frayed fringe of her black silk would have been, or the faded aspect of her lilac muslin. But she asked no question, of course, and went her way home to get her husband his piece of pie, the substitute for a 12 o'clock dinner that made Sunday a day of rest. Mrs. Brooks, however, was not so incurious, and while three or four women lingered to eat their lunch in her kitchen, one of them also detaining Mrs. Weeks to ask some questions about a mutual relative, the widow came forward with a smirk, and said, "You seemed to be real roused up in prayer to-day, Mis' Weeks, as though there was a concern on your mind, now didn't ye?"

"Well, I did," answered Mrs. Weeks, with solemn brevity.

"I thought so," sighed Mrs. Brooks, but with instinctive tact asked no more.

There was a sort of expectant pause, curious eyes regarding her. Mrs. Weeks felt that she was expected to explain; that she ought also to point a moral, so she continued: "I had Mis' 'Gustus Barber in mind. I have felt as though she done well usually, and wore such clothes as was according to her means; but seeing her come out to-day with a span new silk gown, a real good silk, too, for I priced one just like it at Mathur & Mix's for my niece, Sophronia's weddin' gown, and she felt as though she couldn't see her way to buy it; and them gloves and umbrysol to match, and a bonnet all covered with flowers atop of her head, why, I felt as though it was my privilege to pray for her, and maybe to speak to her about such mortal extravagance; there ain't no flour and feed business in Barton 't'll ever keep up such dressin' as that."

"That's so!" echoed Mrs. Martin, "and I know he ain't doing dreadful well, neither; for Paphro was into the bank the other day, and he heerd Barber a-askin' for an extension. I wonder they let him hev it."

"Well," said Widow Brooks, "folks will bite off their noses while the world endures; but seems as though he'd know better'n to buy her such things."

"Pshaw! men don't know no more about clothes—women-folks' clothes, anyway, than they do about the moon," said Mrs. Martin, who did not really persuade clothes enough to keep her respectable, from the tight grasp of "Paphro's" pocket-book.

"I guess he'll find out more'n he ever knew, when the bill comes in for that finery," went on Mrs. Weeks. "And, moreover, I think it's my dooty to let the bank folks know what I think about it. I don't want to hev our bank took in, no way."

"Wouldn't you wait a bit, and talk to her, mabbe?" interposed Miss Eunice Pell, the village tailoress, who had not an exalted opinion of Mrs. Weeks, having more than once suffered from her hasty judgment.

"I dunno; mabbe I won't go to-morrow. If he's got an extension, they can't help it now. I think I will have a talk with her; she had ought to see the error of her ways, anyhow."

"Land!" sighed Miss Eunice.

But not on Monday or Tuesday did Mrs. Weeks deal with the offender. Unexpected company kept her at home. Wednesday was sewing society day, and Mary Barber appeared at Mrs. Weeks' house where, it convened, dressed in her black silk sponged and pressed over till it looked like new, and trimmed with the handsome lace abstracted from the gray silk; among Georgie's dresses and wraps she had found a little box of French flowers, and a cluster of blush roses at her throat fastened the pretty tie that was also a gift—one of her wedding gifts, indeed. Mrs. Weeks was filled with new horror, and Mrs. Brooks opened her green eyes to their fullest extent.

"Sakes alive!" she said to her hostess. "Did you ever! Just see that lace on her gown. It's real thread; I know 'tis. Cost a dollar a yard if it did a penny. I never did!"

If Mrs. Brooks had known what the lace did cost, perhaps her eyes never would have shut again. Georgie Lasalle never gave a thought to the cost of her dress; that was left to the dressmaker whose bills were paid by her father without question. Nothing was too good for Georgie in his eyes, and to consider what she was giving away when her father lay dead, never entered her mourning soul. Nor did Mary know any better. She had not been brought up in the knowledge of laces any more than Widow Brooks, who had made a lucky guess indeed when she suggested thread lace, without an idea of its price.

Mrs Weeks did not make a successful call at Mrs. Barber's on Thursday; she began wrong. She said at once, on taking a seat in Mary's tiny parlor: "I have come to say a few warning words of advice, Miss Barber, on the subject of your dress."

Mary had a temper of her own, which long control had merged into dignity. "Excuse me," she said, coldly. "I must decline to discuss such a personal subject with a mere acquaintance."

"Well!" exclaimed the astonished visitor, "don't you think I haven't got no right to admonish a backslider in the church, 'specially one as young as you be?"

"No, I don't," said Mary, quietly. "I decline to receive admonition except from my husband or my pastor. If I had done you any harm or wrong, Mrs. Weeks, it would give you a right to talk to me on that subject. I cannot and will not receive unkind criticism on my trivial private affairs from you."

"Trivial! well, mabbe you won't find they're so mighty trivial in the end on't!" and with this back-handed thrust, Mrs. Weeks departed.

Mary was indignant, but at last began to see a ludicrous side to the affair, and resolved not to tell Augustus about it lest it should annoy him, for she knew he was anxious enough without hearing her small troubles. But Mrs. Weeks did not delay her work. Her nephew was general clerk in the little Barton bank, and was as frugal as an anchorite in his own expenses, because he had to be. Only last Sunday he had glanced across the church at Mary Barber in her elegant dress and bonnet, and sighed as he thought how such graceful attire would become his own dark-eyed wife, looking doubly sad and tired in her well-worn Sunday suit, turned and freshened and dyed over for at least six years.

He was quick to take the alarm and to spread it before his employer, for it was a private bank, this little nucleus of the moneyed interest in Barton, and Mr. Short, who was at its head, made up his mind to give Barber no further extension of credit.

His son owned the flour mills at Coventry, where Barber dealt, and received a hint to send in his bill, which, as a matter of courtesy, he had not pressed.

Mrs. Weeks related the upshot of her visit to Mary Barber at the counter of the country store where she met Mrs. Brooks, and the storekeeper, overhearing it, thought it the part of wisdom to present his account and give a hint to the butcher who was his brother-in-law.

So the ball rolled on; not in days did it gather force enough to crush its objects, but in the course of months it increased and grew mighty. Just as Mary Barber held to her breast a fair, frail little baby, new-born to the world of deprivation and distress that awaited it, her husband failed, and failed hopelessly. Mrs. Weeks said, triumphantly: "I told you so! I always told Deacon Weeks that my judgment of folks was worth havin'. I can see through a stun wall as well as anybody."

But while she plumed herself on her judgment, forgetting its results, Mary Barber, hearing the story from her husband's lips, which she had read first in his face, laid down her whirling head on the pillow, too weak to fight against the fate that had come upon them. She and her baby went home together to the land where we shall know as we are known. And her broken-down husband left Barton forever, drifting away with the crowd of homeless and hopeless men who people the waste places of the land, living, no man knows how; dying no man knows where. And all the result of one woman's hard, ignorant, uncharitable judgment of another.

"Well! she's judged herself, now!" soliloquized Miss Eunice, as in her turn she paused beside the coffin to look at the rigid face of the dead Mrs. Weeks, years after. "Wonder how she likes it? Anyway He's marciful, if she wa'nt." And yet as she turned away, an echo in her mind whispered: "For with what judgment ye judge, ye shall be judged."—*Rose Terry Cooke.*

How to Cleanse Mica.—Every woman who has been obliged to spend half a day several times during the winter cleaning plates of mica in her coal stove, usually by taking them out and washing them in soap suds, will rejoice to know that there is no need to take them out or let the fire burn very low in order to do it successfully. Take a little vinegar and water and wash the mica carefully with a soft cloth; the acid removes all stains, and if a little pains is taken to clear the corners thoroughly and wipe them dry, the mica will look as good as new.

Leaflets from the Margin of Lake Tahoe.

[Written for the Rural Press by M. E. O. W.]

Will springtime never come to us, perched up among the high Sierras? The character of March is not to be envied, but this year it was so very snowy, and so very pleasant, too, that it fairly outdid its own reputation. To realize how the snow can come, one must be where it snows as it does at Lake Tahoe. For three days we were a veritable prisoner in our own castle. The snow covering the house, windows and all, making it, in part, dark as a dungeon. It was a new experience; the great wrap of snow shut out every sound, as well as the light.

The lake is 150 feet from the door, was just booming, a part of the time, but within, was a perfect stillness; even the bright blazes on the hearth seemed oppressed. Twice in the three days, we climbed out a chamber window, and shoveled three feet of solid snow off the study roof. At the end of that time, the lake became smooth, and Will and Frank, two boys, who have seen snow in New Brunswick, came in a boat from their home, two miles away, and shoveled us out. We have many, many kindnesses to thank them for in the last two winters. The hours they did have to work to free this roof! In some parts the snow was eight feet deep, and the doors and windows were like loop-holes through the snow. One mile back from the lake, the snow was 16 ft. deep on a level. But for snow-shoes, there would have been no traveling on shore. Exercise is good, but we would prefer ours, with a pencil and paper, to a shovel and snow. We have found that sore, tired muscles are very uncomfortable things to own.

The last 10 days of March were like summer-time, with a grand carpet of snow, but it went fast. The coldest night was 28° above. At noon several times the mercury stood at 70° in the shade. The pleasantest thing about the storm was that we were happy every moment, and thought of going to Alaska, where such snows are common the most of the year. We read, wrote and sang as if we were within speaking distance of any number of people, instead of being one lone, solitary mortal, with two black cats, the only living things within ever so far. To-day, April 3d, it is snowing again. It may equal Alaska yet—great, heavy, wet flakes—as April knows how to send down. Yesterday we heard the song of a robin, and saw the first pair of blue birds, poor things! to-day, I guess they think they have come a month or two too soon. A very remarkable feature at Lake Tahoe, is the great dearth of water birds. Early yesterday morning, two pairs of loons, or North American divers, were swimming round the wharf. For several days they have been laughing about this coming storm. They are most beautiful birds, and but very few here. They are very difficult to kill with a gun, but easily caught with a baited hook. They dive and remain under water a long time, swimming great distances, without coming up for even a breath. It is counted rare sport to tire out a grebe—another species of diver—by following it with a boat, keeping it under water so much that, at last, it seeks to hide among the rocks on shore, for rest and breath. It seldom looks for safety in flight. There is room for many more here. I have heard of one swan, and that was killed at the island near Tahoe. Gulls, gray and white, are quite numerous; have seen 11 sitting on the water at a time. Three tern, or sea-swallows—a tiny species of gull—were seen near Tahoe last summer. These are truly curious, flying like a swallow, and riding the waves as well as the best of water birds. A large flock of geese rested on the lake at Carnelian bay in the winter. They awoke the echoes far and near with their boisterous play. There are a few marsh-hens; and ducks would be here in great numbers if they could find some protection, and not war to the death all the time. A pair of canvasbacks came to Carnelian bay in 1880, and nested, bringing out 15 fine young ones. In 1881 they came to the same place again, and came off with 17 young, that lived to be half-grown, the last time we saw them. At that rate, it would not take very long to people these waters, now so silent, with bird life. Where birds are so scarce it seems a pity to kill one, just for the sake of killing it, when a patch on a tree would answer as well. Loons, grebes, gulls and terns are not fit for food; so, unless specimens are wanted by naturalists, let's give them a home instead of a grave; and cannot we forego the pleasure of a roast duck or goose, if we could get one, until they have a chance to multiply and replenish?

How any one, who can read and think at all, does enjoy the mail and the few books one is the happy possessor of. Others, beside myself, like the Rural Press. The following extract from a friend's letter, made me go and look over my papers—not for the second time, but for the manyeth: "Father brought over the last two Presses, and I have been interested in the nurserymens' fight over the 'walnut,' and Ed. Berwick's article on 'eatables,' and Rumford's 'exiled cook.' Just at night, though the rain was coming a little, went out and made arrangements with a hare, so he will not prune any more vines. I had some *posies* picked ready to send you, but the day is too rough to go with mail; nothing but fire and shelter at such a time." With the letter came a package of Rumford's "raw food," and it was most delicious—oat, graham meal, or cracked wheat, with crushed raisins, made in crackers; I was sorry when the last one was gone. Will surely

have to get a grape-cracker machine, and there is a good cook-stove here for sale, cheap. I will now have my time with my books; no more cooking if I can have such crackers, fresh fruit and nuts. Shall watch the P. O. anxiously for the "posies picked."

CASTLE KEEP, April 3d, 1882.

Temperance and Health.

From the annual report of Grand Master W. H. Barnes, of the Ancient Order United Workmen in California, we take the following paragraph, since what is said will apply very generally:

I believe the A. O. U. W. is as free from drunkards as any association of like character in the world, and yet the general social customs of the day and age are surely sapping the vitality of many of our membership. Men have turned from stronger drinks to beer, flattering themselves that there is no danger in the cheap and seemingly harmless beverage, yet the fearful increase of kidney and liver diseases, and deaths from seemingly trifling hurts, are directly traceable to cheap beer.

A large proportion of our accidents and suicides, intemperance is directly responsible for, to say nothing of blasted reputations, broken homes and mourning families. As long as men invite and encourage each other to drink, so long will the curse continue to afflict our race. We are very particular about evidences of consumption, heart disease, what a man's parents died of, how the respiration and pulsation stands; but men propose and doctors endorse those who are known to be regular drinkers, without scarcely a question; and if a man who is in the liquor business has his beneficiary certificate declined, because his examination shows that under the instruction to Medical Examiners he ought to be rejected, a fiery protest is received, or a long argument made, or a numerously signed petition by every member of the Lodge, asking that the decision be rescinded, as the applicant is "such a good man!" Although, personally, I wish that no man ever drank a drop of any kind of liquor; although I know that the death rate among moderate drinkers is largely in excess of that among total abstainers, yet I have never rejected an applicant simply from this cause, unless his medical examination showed him to be a dangerous risk, and his habits such as unfitted him for a place among us.

Standing here to-day as your Chief Executive, I say to you it is not consumption, heart disease or Bright's disease that you need spend hours debating how to guard against, but the great evil overshadowing all of these is liquor and beer drinking, which leads not only to all manner of disease, but also to accidents, suicides and murders.

Solve this problem, and the rest is easy. I place more faith in the earnest and fraternal efforts of man with man, than I do in acts of legislation on this subject. If every Workman will resolve that as far as he is concerned, hereafter there shall be reform in this particular, and that he will do what he can to aid his brother, at least 15,000 men will be free from this evil, and there will be certainly 15,000 happy homes in California. Is it not worth the effort?

A True Story.

EDITORS PRESS:—If you think the following worthy for the PRESS, I would be thankful to you for printing it. I'm 15 years old, and will in the future try to write something of more interest if you think they will be worthy of notice.

I once knew three sisters who walked four miles to school over the wide plains of the San Joaquin valley. They were good girls but could talk but very little English being accustomed to talk German at home. When but half way to school they would be joined by some more children. But how these little sisters did wish that they had gone to school long before, for these children would tease them most mercilessly. They would call them "Dutchies" and all sorts of names, or slap them and make them walk in the wet grass. How much nicer it would have been had they treated them kindly and tried to help them in talking English.

But these children never thought that these "Dutch girls," would some day talk English as fluently as they, and be liked more than what they would with these unkind acts. These children are now grown up, but are disliked by everybody. O, children, be kind to your playmates if you would have your parents be proud of you. Remember by making others happy, is the only way to make yourself happy.

San Jose, Cal. YOUNG READER.

A NEW speed indicator, called the strathmograph, for indicating the speed of locomotives, has been introduced on the Hanoverian railroads. By it the engineer can read from a scale the actual speed of his engine at any time, besides which a record of the trip is kept on a strip of paper.

THE MODERN HAT.—Bayard Taylor says: "It is a withering commentary upon our modern costume that no sculptor has dared, or ever will dare to model a statue wearing a stovepipe hat."

YOUNG FOLKS' COLUMN.

Major Jones' Courtship.

"Crismus eve I put on my new suit, and shaved my face as slick as a smoothin' iron, and after tea went over to old Miss Stallinses. As soon as I went into the parlor whar they was all sittin' round the fire, Miss Carline and Miss Kesiah both laughed right out.

" 'There! there!' ses they, 'I told you so, I know'd it would be Joseph.'

" 'What's I done, Miss Carline,' ses I.

" 'You come under little sister's chicken bone, and I do believe she know'd you was comin' when she put it over the door.'

" 'No, I didn't—I didn't no such thing, now,' ses Miss Mary, and her face blushed red all over.

" 'Oh, you needn't deny it,' ses Miss Kesiah, 'you belong to Joseph now, jest as sure as there's any charm in chicken bones.'

"I know'd that was a first-rate chance to say something, but the dear little creeter looked so sorry and kep' blushing so I couldn't say nothin' zactly to the pint; so I tuck a chair and reched up, and tuck down the bone and put it in my pocket.

" 'What are you going to do with that old chicken bone, now, Majer?' ses Miss Mary.

"I'm gwine to keep it as long as I live', ses I, 'as a Crismus present from the handsomest gall in Georgia.'

"When I sed that, she blushed worse and worse.

" 'Ain't you ashamed, Majer?' ses she.

" 'Now you ought to give her a Crismus gift, Joseph, to keep all her life,' ses Miss Carline.

" 'Ah,' ses old Miss Stallins, 'when I was a gal like you, child, I used to hang up my stockins' and get 'em full of presents.'

" The galls kep' laughin' and blushin'.

" 'Never mind,' ses Miss Mary, 'Majer's got to give me a Christmas gift—won't you, Majer?'

" 'Oh, yes,' ses I; 'you know I promised you one.'

" 'But I didn't mean *that*,' ses she.

" 'I've got one for you, what I want you to keep all your life; but it would take a two-bushel bag to hold it,' ses I.

" 'Oh, that's the kind,' ses she.

" 'But you promise to keep it as long as you live?' ses I.

" 'Certainly I will, Majer.'

" 'Now, you hear that, Miss Carline,' ses I. 'She ses she'll keep it all her life.'

" 'Yes, I will,' ses Miss Mary; 'but what is it?'

" 'Never mind,' ses I; you hang up a bag big enough to hold it, and you'll find out what it is, when you see it in the mornin'.'

"Miss Carline winked at Miss Kesiah, and then whispered to her—then they both laughed and looked at me as mischievous as they could. They 'spicioned something.

" 'You'll be shore to give it to me, now, if I hang up a bag?' sez Miss Mary.

" 'And promise to keep it?' sez I.

" 'Well, I will, 'cause I know that you wouldn't give me nothin' that wasn't worth keepin'.'

"They all agreed they would hang up a bag for me to put Miss Mary's Christmas present in, on the back porch, and about 10 o'clock I told 'em good evening and went home.

"I sot up till midnight, and when they were all gone to bed I went softly into the back gate, and went up to the porch, and thar, shore enough, was a great big meal bag hangin' to the jice. It was monsterous unhandy to get to it, but I was 'termined not to back out. So I got some chairs on top of a bench, and got hold of the rope and let myself down into the bag; but, just as I was gettin' in, it swung agin the chairs, and down they went with a terrible racket; but nobody didn't wake up but Miss Stallinses old cur dog, and he come rippin' and tearin' through the yard like rath, and round and round he went, trying to find what was the matter. I scrooched down in the bag, and didn't breathe louder nor a kitten, for fear he'd find me out, and after a while he quit barkin. The wind began to blow 'bominable cold, and the old bag kep' turnin' round and swingin', so as to make me seasick as the mischief. I was afraid to move for fear the rope would break and let me fall, and thar I sot with my teeth rattlin' like I had an ager. It seemed like it would never come daylight; and I do believe if I didn't love Miss Mary so powerful I would froze to death, for my heart was the only spot that felt warm, and it didn't beat more'n two licks a minute; only when I thought how she would be surprised in the mornin', and then it went into a canter.

"Bimeby the old dog come upon the porch, and began to smell about the bag, and then he barked like he thought he treed something. 'Bow! wow! wow!' ses he. Then he'd smell agin, and try to get up to the bag. 'Git out!' ses I, very low, for fear the gals mout hear me. 'Bow! wow!' ses he. 'Be gone! you 'bominable fool!' ses I, and felt all over in spots, for I spected every minit he'd nip me, and what made it worse, I didn't know wharabouts he'd take hold. 'Bow! wow! wow!' Then I tried coaxin'. 'Come here, good fellow,' ses I, and whistled a little to him, but it wasn't no use. Thar he stood and kept up his everlasting whinin' an' barkin' all night. I couldn't tell when daylight was breakin' only by the chickens crowin', and I was monstrous glad to hear 'em, for if I'd had to stay thar one hour more, I don't beleeve I'd ever got out of that big alive.

"Old Miss Stallins come out first, and as soon as she seed the bag, ses she:

" 'What upon yearth has Joseph went and put in that bag for Mary? I lay it's a yearlin' or some live animal, or Bruin wouldn't bark so at it.'

"She went in to call the galls, and I sot thar, shiverin' all over so I couldn't hardly speak if I tried to—but I didn't say nothin'. Bimeby they all come runnin' out on the porch.

" 'My goodness! what is it?' ses Miss Mary.

" 'Oh, it's alive,' ses Miss Kesiah; 'I seed it move.'

" 'Call Cato, an' make him cut the rope,' ses Miss Carline, 'an' let's see what it is. Come here, Cato, and get this bag down.'

" 'Don't hurt it for the world,' ses Miss Mary.

"Cato untied the rope that was round the jice and let the bag down easy on the floor, and I tumbled out, all covered with corn meal from head to foot.

" 'Goodness gracious!' ses Miss Mary, 'if it ain't the Major himself.'

" 'Yes,' ses I, 'and you know you promised to keep my Crismus present as long as you lived.'

"The galls laughed themselves almost to death, and went to brushin' off the meal as fast as they could, saying they was gwine to hang that bag up every Crismus till they got husbands, too."

GOOD HEALTH.

A Dangerous Curiosity.

It is the most natural thing in the world, when you have gone to bed, to get up, run to the window, hoist it and look out at an alarm of fire or any unusual noise or clamor going on outside. A lady was roused from her sleep by a cry of "fire;" her chamber was as bright almost as day when she opened her eyes. She went to the window, and soon saw that it was her husband's cotton factory. She felt on the instant a shock at the pit of the stomach; the result was a painful disease which troubled her for the remainder of her life, a period of nearly 15 years.

A young lady just budding into womanhood was called by the sound of midnight music to the window, and in her undress leaned her arm on the cold sill; the next day she had an attack of inflammation of the lungs which nearly killed her. She eventually recovered, only to be the victim of a life-long asthma, the horrible suffering from the oft-repeated attacks of which, during now these 20 years, is the painful penalty, to be paid over and over again as long as life lasts.

A letter just received from a successful banker, who has been an invalid for five years, every now and then spitting blood by the pint, with a harassing cough which makes every night and morning a purgatory, states that the immediate cause of all his sufferings, and the final blasting of life's prospects, was his getting up on a cool night, to look out of his chamber-window, his body being in a perspiration at the time. That sturdy old Trojan, Dr. Johnson, used to say that "mankind did not so much require instructing as reminding;" hence the present reminder, that it is dangerous for people to be poking their nightcaps out of windows after night-fall. Another mischievous habit in the same direction, may have pertinent mention here: Standing in the street doorway in cold weather, while the door itself is open, in taking leave of visitors. The cold air from without rushes into the dwelling, causing a draft, which chills the whole body almost instantly. It is a hundred times safer to close the door and stand without, bare-headed. Many a tedious case of sickness and suffering has been occasioned, and even life itself has been lost, by an exposure, apparently so trifling. May our readers remember these things, and teach them to their children on the instant.

MALARIAL GERMS.—M. A. Laveran has found, in the blood of patients suffering from malarial poisoning, parasitic organisms, very definite in form and most remarkable in character; motionless, cylindrical curved bodies, transparent and of delicate outlines, curved at the extremities, transparent spherical forms provided with fine filaments in rapid movement, which he believes to be animalcules; and spherical or irregular bodies, which appeared to be "cadaveric" stage of these, all marked with pigment granules. He has also detected peculiar conditions in the blood itself. During the year that has passed since he first discovered these elements, M. Laveran has examined the blood in 192 patients affected with various symptoms of malarial disease, and has found the organisms in 180 of them, and he has convinced himself by numerous and repeated observations that they are not found in the blood of persons suffering from diseases that are not of malarial origin. In general, the parasitic bodies were found in the blood only at certain times, a little before and at the moment of the accession of the fever; and they rapidly disappeared under the influence of a quinine treatment. The addition of a minute quantity of a dilute solution of sulphate of quinine to a drop of blood sufficed to destroy the organisms. M. Laveran believes that the absence of the organisms in most of the cases (only 12 in the whole 192) in which he failed to find them was due to the patients' having undergone a course of treatment with quinine.

DOMESTIC ECONOMY.

BATTER PUDDING.—This is the most difficult of all puddings to make, but its difficulty lies not in its combination of many materials, for those are few and simple; the trouble is in mixing and bringing it to the table in the light and feathery condition that makes of it a food fit for fairies. Beat up four eggs thoroughly; add to them a pint of milk and a reasonable pinch of salt. Sift a teacupful of flour and add it gradually to the milk and eggs, beating lightly the while. Then pour the whole mixture through a fine wire strainer into the tin in which it is to be boiled. This straining is imperative. The tin must be perfectly plain and must have a tight-fitting cover; the least bit of steam getting at the pudding would spoil it. Now comes the great secret of a boiled batter pudding: The potful of boiling water in which the pudding-pan is placed must not be touched or moved until the pudding is done. It takes exactly an hour to cook. If moved or jarred, so that the pudding-can oscillates against the side of the pot, the pudding inevitably falls and comes out as heavy as lead. The pot must be put on the spot on the stove or range on which it can stay until the expiration of the hour; and sufficient water must be put in at the start so that it need not be refilled or added to. These directions *exactly* followed, you have a batter pudding of all puddings the most delicate and delicious. Slip it out of the can on a hot dish and serve with proper sauce.

GERMAN CREAM.—Take one quart of new milk, two ounces of gelatine, half a pound of sugar and six eggs. Put the gelatine into the cold milk and let it stand an hour, then place the tin pail into a kettle of boiling water and boil the milk until the gelatine is all melted. Beat the yelks of the eggs until thick, adding a tablespoonful of sugar at a time till all is stirred in. Stir it very slowly into the boiling milk, taking care not to let the eggs curdle. Boil for 10 minutes. Flavor with vanilla. Strain into a dish that has been dipped into cold water. Beat the whites of the eggs to a stiff froth a little while before the cream is to be used, and turn over the top of the cream, putting spoonfuls of jam or jelly over it. Serve very cold.

RICE FOR DESSERT.—Rice for dessert is very nice when prepared in this way: Wash half a cupful of rice, add to it a large half-cup of sugar, a dessertspoonful of salt, one quart of milk and some grated nutmeg. Set it in the oven to bake, stirring it from the bottom every few minutes with a long-handled spoon. When the rice is cooked so that it is perfectly soft, stir in half a teacupful of cornstarch, which you have rubbed smooth in a little cold water. If any brown crust has formed on the top, remove it before you put in the cornstarch. This is suitable to serve cold for tea, or warm for dessert. Send it to the table in cups or glasses, with a spoonful of jelly or jam in each cup.

GOLDEN EGGS.—Eggs are invaluable in an impromptu dinner, and golden eggs are not only very nice, but very pretty. Boil some eggs thoroughly hard; then cut them in halves, and place them yelk downward upon a deep dish—a glass one, if it is strong enough to bear heat, is more enticing—ranged carefully in rows, like little white mounds. A sauce is made by frying an onion with curry powder and adding stock, thickening it and straining it over the eggs. This pretty dish should be accompanied by boiled rice, but should not be garnished with it, as the bordering of rice takes away from the light appearance of the eggs in contrast with the golden gravy.

ORANGE PUDDING.—For orange pudding or custard cut five or six oranges in small pieces, place them in a pudding dish, and sprinkle one coffee-cup of sugar over them; make a boiled custard of one pint of milk, the yelks of three eggs, half a cup of sugar and a teaspoonful of cornstarch; pour this over the oranges after the sugar has dissolved; make a meringue of the whites of the eggs with three tablespoonfuls of powdered sugar beaten in; put this over the custard, and set in the oven to brown. If the oranges are very sweet, less sugar can be used.

PUFF PASTE.—Mix one pound of flour, one ounce of butter and the juice of one lemon into a firm paste with ice-cold water. Let it stand an hour. Roll it out thin and lay over it one pound of butter in thin slices, fold over the paste from each side, roll it up into a ball, and roll out quarter of an inch in thickness. Fold in three layers and lengthwise in three folds. Let it lie half an hour. Repeat the operation, let it lie 10 minutes and repeat the rolling. When used for pies and tarts, rub over the top with a feather dipped into sweet milk.

MILK PORRIDGE.—Milk porridge can be varied so that an invalid will not tire of it soon. Put a dozen raisins in about two cups of milk, boil for five minutes; they will flavor it agreeably, though they are not intended to be eaten. A little nutmeg can be added, or the white of an egg beaten light may be stirred in just after the milk is taken from the stove.

HINTS ABOUT RAISINS.—If you wish to avoid having all the raisins you put in a pudding sink to the bottom, follow this rule: Cook the raisins in a little water on the top of the stove; then, when the pudding is half done, stir the raisins in. They will be evenly distributed through it, and there will be plenty of time for the crust to form on the top of the pudding.

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TABLE OF CONTENTS.

GENERAL EDITORIALS.—Hay and Climate; Clover Ensilage, 321. The Week; Poisoning Hay; The California Hay Crop; Hay and Hay Making, 328. California Fruit at the East, 337.
ILLUSTRATIONS.—An Eastern Summer Scene—Haying in the Meadow, 321.
CORRESPONDENCE.—San Joaquin Valley, 322. Another Steam Spader, 325. Do Trees and Plants Laugh? 332. Grape Lands in Contra Costa County, 334.
THE FIELD.—Notes on the Growth of Hops, 322
THE VINEYARD.—Annual Meeting of the Viticultural Commission, 322.
HORTICULTURE.—The American Pomological Society, 323.
SHEEP AND WOOL.—Points on Sheep Breeding, 323.
PATRONS OF HUSBANDRY.—Reunion at Alhambra Grange; Co-operation; Work for the Grange; The Grange in Oregon, 324.
AGRICULTURAL NOTES, from the various counties of California and Nevada, 324-5.
NEWS IN BRIEF on page 325 and other pages.
POULTRY YARD—Notes on Incubators, 325.
HOME CIRCLE.—Butter, (poetry); Judged; Leaflets from the Margin of Lake Tahoe; Temperance and Health; A True Story, 327.
YOUNG FOLKS' COLUMN.—Major Jones' Courtship, 327.
GOOD HEALTH.—A Dangerous Curiosity; Malarial Germs, 327.
DOMESTIC ECONOMY.—Batter Pudding; German Cream; Rice for Dessert; Golden Eggs; Orange Pudding; Puff Paste; Milk Porridge; Hints about Raisins, 327.
THE STABLE.—Horse Breeding in California, 329.
THE DAIRY.—Ensilage of Alfalfa; Notes on Butter Making, 329.
THE STOCK YARD.—Cattle at the Fairs; Short Horn Breeders' Convention; Yerba Buena Jerseys, 320.
FORESTRY.—Annual Ring Growths and Rainfall, 332.
THE APIARY.—Beekeepers' Notes, 332.
MISCELLANEOUS.—Hay in Georgia, 329. Sound; Diphtheria, 334.

Business Announcements.

Mitchell Wagons—A. W. Sanborn & Co., S. F.
Minnesota Chief Separator—Seymour, Sabin & Co, S. F.
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The Week.

The warm sun which is covering the landscape with vernal beauties is also calling to their evil work the host of orchard pests. There has been frightful carnage wrought in their ranks this winter by the scrapers and the on-laying of vile decoctions with brush and spray. But plenty of the stock has escaped to repopulate the trees unless another year's work is zealously undertaken. Mr. Cooke, as may be seen by an item in another column, now advises the showering of the trees and young fruit with a compound which leaves the codlin moth without a decent place to set her egg. No doubt the increase of the insect can be not a little checked by adopting this prescription, and an egg misplaced now means not the destruction of that worm, but the cutting off of a progeny which amounts to many in this land of multiple broods. Let this be a summer of insect study by all orchardists. There is much yet to learn, and the royal road is open to all, viz.: Watch closely and verify all observations as many times as possible before any conclusions are reached.

Poisonous Hay.

Sometimes much injury is caused domestic animals by eating hay which is affected with parasitic fungus growths. Here the greatest danger is from rusty hay—grain which is rust-stricken and cut for hay "to save it." Such fodder should be administered with care. The ergots also produce evil effects upon cattle, and molds generally are dangerous, whether on the carrot or hay. Nor are those who rely for hay upon the sweet meadow grasses of the East and England free from danger from fungus poisoning. During the past year or two, farmers in various parts of Kent and Sussex, England, have had their grass attacked by a minute fungus, which there is reason to believe is of a deadly character, inasmuch as deaths of farm animals have occurred under such circumstances as to support strongly the theory that they have died through eating grass covered with this fungoid growth. Such animals are found, by *post-mortem* examination, to have a fungoid and somewhat leather-like outgrowth on the lungs. Rabbits fed with grass attacked by this parasite are reported to have died, and their lungs to have presented the same appearance as that just noted. It is chiefly the fescue grasses which suffer. The fungus is most abundant upon sandy soils, and is not uncommon in chalky situations, but does not appear on clays. It is first seen in September, and it fades away usually in the following January. While it appears freely on old grass, young grass seems to be free from it. As seen on the green herbage in the meadows, the fungus has the appearance of minute globules of a bright vermilion or pink coral color, dotted all over the grass, and in this form we have kept it on cut grass for a month or two, without any change taking place. The fungus, which, like the hollyhock disease, is of Australian origin, is named *Isaria fuci formis*, and a description of the parasite has recently been communicated to the Royal Horticultural Society by Mr. W. G. Smith. The suspicion as to its poisonous character is not lessened by the fact that it is rather closely related to ergot.

The introduction of this new fungus from Australia should set our grass growers on the watch, for we are growing much pasture and hay from seed brought from that part of the world. Anything which any reader may discover and imagine to be of fungoid character, we shall be pleased to examine for him, if fresh specimens are sent us.

The California Hay Crop.

Although the hay receipts of San Francisco are quite moderate in their aggregate, the production of the whole State is very large, and compared with the population, probably greater to the man than any State of the Union. We are a people of many animals, and the prevailing principle in the planning of implements and machines for farm use is to secure the greatest motive power with the least human accompaniment. This being the case, the amount of hay consumed must be enormous. The aggregate annual hay product of the State of California will probably reach 1,500,000 tons.

The proportion of the hay crop which seeks sale in San Francisco can be learned from the statistics of the city receipts kept by the San Francisco *Journal of Commerce:*

Receipts	Bales	Tons
1872	390,405	47,724
1873	391,706	47,598
1874	473,496	58,481
1875	440,452	53,704
1876	682,496	78,315
1877	546,195	62,399
1878	614,302	68,903
1879	581,371	64,819
1880	——	67,273
1881	——	58,549

The grades of hay which figure most largely in the San Francisco market and their comparative values can be seen from the following enumeration of kinds and prices for cargo lots: Wheat, $14.@14.50; wild oats, $11@14; stable, $10@13; clover, $10@12 a ton.

The outlook for the hay crop this year does not promise anything more than a fair average crop. The rather scanty rainfall has produced a light growth of wild oats. The plants started well and early, but the cold winter made the growth very slow, and in some parts cold and drouth combined to render the crop hardly worth cutting. As a rule the hay plants are heading out from short stems, and this will cause short weights per acre. In other parts of the State there has been a good growth, and quite satisfactory results will be obtained. The prospect of a moderate crop coupled with a prospective growing demand, will probably make a year of good hay prices, and there is some disposition now to hold over old hay as a speculation.

DURING March 14,697 emigrants left Hamburg, mostly for the United States.

Hay and Hay Making.

[Written for the RURAL PRESS by JACOB PRICE.]

The Eastern Hay-fields.

Haying! What memories are awakened by the very word. To those of us who came to California from the Northern States how vividly is presented pictures of red clover fields, sleeping in the moist still air under a blazing July sun. The air is heavy with delicious perfume, and the droning of thousands of bees falls pleasantly on the ear in the country silence.

The mowers appear. The luncheon basket and water jug (and sometimes the whisky bottle) are placed under the shade of a leafy shrub, or an armful of clover. Whetstones are produced and the musical ring of their "to-whit to-whet, to-whit to-whet, to-whit to-whet" on the newly-ground blades, gives warning to the quiet neighborhood that haying is about to commence in earnest.

The leader "sets in," followed by the others, and in measured time, without losing a stroke, and without pause, they go to the other side of the 20-acre lot. Curing and raking follow at the proper time, and the sleepy expanse of clover is transformed into the likeness of a tented camp.

Then comes the storing away in the "bay" of the barn. That part is not so funny. To climb up on the top of a "mow" of soft, sweating, new hay, close under the roof, on which the hot sun is beating, and stow away a ton or so of heavy, green hay, in the heat, and dust, and darkness, with the skin smarting, and the perspiration flowing from every pore, is no joke. Yet it is part of Eastern haying, and has to be done to this very day, notwithstanding all the modern appliances of hoisting forks and other labor-saving devices.

Californians know little of this. Haying with us means, generally speaking, attacking a field of unripe grain—wheat, oats or barley—with a mowing machine, and in due course of time converting it into bales. A great many grasses and grains are utilized for

Hay in California.

Wheat, barley, tame and wild oats, clover, timothy, alfalfa, alfillarilla, tule grass and bunch or wire grass, all serve as hay for the different localities where they are produced. The most valuable is fine green wheat hay, although some claim that a clean article of wild oats, cut at the right time, is equally good. The poorest is tule hay. It is used chiefly for bedding, packing goods, stuffing cheap cushions, and the like. Tule hay grows on the marshes bordering the San Joaquin and Sacramento rivers. It is not cut to any large extent, being driven from the market by straw, which, by many, is preferred.

Timothy grows only to a limited extent in this State, and is mainly confined to small valleys that lie at a considerable elevation above the sea in the northern counties of the State. It seems to require snow and a considerable degree of cold. In the places named, however, it grows very large, the writer having seen stalks of it 7 ft. high, the head being 16 inches long and the stem near the root as large as a common lead pencil.

Alfalfa is produced on moist lands, either overflowed or irrigated tracts. The yield per acre is something fabulous. Four or five crops can be taken off in a season, each of which will yield from one to two tons per acre, an aggregate of from 5 tons to 10 tons. It is not in very good demand nor highly regarded as hay in the city market. Like all other grasses, however, its value depends much on the time it is cut and the way in which it is cured.

Wire or bunch grass grows principally east of the Sierra Nevada. Sierra valley and the Truckee meadows produce it largely. It is really a pretty good article; much better than it looks to be.

Alfilarilla and clover grows all over the State but is utilized for hay in the southern part of the State more than elsewhere.

Wild oats grow almost everywhere spontaneously, but is, at the present time, in the more thickly settled portions of the State, confined to the hills, the valleys being used for more valuable crops. A peculiarity of the seeds of this grass should be noticed. Around the base of each kernel are little beards which, in dry weather, lie comparatively close, but which, as soon as moistened spring out straight, thus standing the kernel on its end in the best position for penetrating the earth. The result is that on adobe soils where there are numerous cracks, many kernels penetrate into them, and as soon as the rains come and close up the cracks, the seeds are, of course, securely planted. A kernel of wild oats moistened and laid in the palm of the hand will actually appear to crawl, as if seeking to hide itself. It is this tendency to plant itself which probably has caused it to spread over so large an extent of country and drive out other plants.

Wheat, oat and barley hays are produced in all parts of the State; oats, however, being confined principally to some of the coast counties. Tame oats as hay are not highly esteemed.

The Principal Hay-Producing Section of the State

Is the valley or level land bordering San Francisco bay, and the most prolific part of this is around the southern end, in the neighborhood of San Jose. There, at certain seasons of the year, may be seen square mile upon square mile of hay, and hay only. Its quality is A 1.

Other sections of the State, doubtless, have as great hay-producing qualities, but the area named has the stimulant of a great city for a market, transportation being quick and cheap by water, and almost equally so by rail. Large quantities of hay, however, are raised in various parts of the State, both for home consumption and export. Chico and its vicinity send hay to Redding for the teamsters in the mountains of the northern part of the State. Livermore valley frequently sends hay to Nevada, although only a few hours from San Francisco. Livermore hay is equal to the best grown on the coast, and in most seasons superior. Los Angeles and vicinity ships hay by rail to Arizona.

San Francisco sometimes sends hay to Mexico, the Sandwich Islands, and even China.

The Process of Preparing Hay for Market

Varies slightly in different localities, but is mainly the same. The horse-rake follows quickly after the mower—the same day generally—and puts the hay into large windrows. These are attacked in turn by an implement peculiar to California, known as a "go-devil." It is simply a strong, coarse rake, the teeth of which lie flat on the ground and project in front of the "head," which is usually a scantling about 4x4 and 10 or 12 ft. in length. There are in addition to the teeth, three or four upright stakes, connected by a crossbar near their tops. A rope 15 or 20 ft. long is fastened by swiveled rings at each end of the head. The two ends of the rope are carried forward and attached to a horse or horses, and the "go-devil" is ready for business.

The horses, if there are two of them, are driven straddle of the windrow, drawing the "go-devil" after them. It slips along under the hay, gathering it up until 300 or 400 lbs. are collected, when the driver, by lifting on the head behind, causes the teeth to catch on their points and the "go-devil" is upset, discharging its load. It makes a complete revolution and strikes right side up ready for business again. In this way the process of cocking goes on as fast as the team can walk, nearly. It must be said, however, that the cocks are not very symmetrical; but in this climate, where no rain is to be feared, that makes but little difference. The "go-devil" is used also for hauling these bunches or cocks to the stack or to the press.

Pressing.

It was formerly the practice to press hay directly from the cock, but the better plan of stacking the hay as soon as possible now prevails. The former method compelled the hay to remain for a long time in the cocks—one side of it being exposed to the sun, wind, fog and dew, and the other to dampness of the ground. By stacking, all this is avoided, and the increased value of the hay fully pays for the labor of stacking.

Nearly all hay in California is pressed. All that goes to market is so treated, and even that fed out on the ranches not unfrequently is pressed for convenience in handling and storing. Until within a few years, nearly all hay in the State was pressed into what are now called large bales, that is, bales measuring about two by three feet and four feet long and weighing from 200 to 300 lbs. That is still the case with reference to the San Francisco market and much of the interior, the implements used for the purpose being, with few exceptions, the Price or Petaluma press and a cheaper press, called the Eagle, made by the now defunct Kimball Manufacturing company. Within two or three years, however, the transportation of hay by rail has created a demand for a press that would condense hay to such solidity that 10 tons (a full carload) of it could be put in a common box car. That led to the introduction of what we called the small-bale Dederick presses, which make a bale about 17x24 inches square and 3 ft. long, weighing from 150 to 175 lbs.

The large bales first mentioned are made by filling the press with loose hay, and subjecting the entire mass to pressure at once; after which it is bound with ropes. The smaller bales are made by pressing each separate forkful as it is put into the press. These are bound with wire instead of rope, rope not being strong enough.

In general, it may be said that when hay is not to be shipped long distances by rail, the large bales are much preferred, on account of the hay presenting a plumper and more inviting appearance, and also because it can be baled in the large bales at much less expense. But where storage room is high or transportation expensive, the small, solid bales are indispensable.

In Conclusion.

It may be said that the hay crop is among the most important productions of California, and no State in the Union is so favored with respect to quality, variety, abundance and cheapness of this great staple. The present season promises a most bountiful crop of hay, though in many sections it will be rather late.

San Leandro Plow Works, Cal.

THE HAY CROP OF THE UNITED STATES.—According to the figures of the U. S. Census Office, the value of the hay crop of the country for 1880 was $371,811,084. The whole product of gold and silver for the same year was $75,000,000 or only enough to buy one-fifth of the hay.

FRESH butter from California is being received at New York in large quantities.

THE STABLE.

Horse Breeding in California.—No. 8.

[Written for the PRESS by JOSEPH CAIRN SIMPSON.]

Roadsters and Fast Trotters.

It is difficult to determine whether blood or form is the most important in breeding horses of the class under consideration. Both are so intimately connected that there is a joint bearing which forces the conclusion that the successful breeder must insist on both being up to the standard of high excellence. In the production of race horses, blood takes the precedence, form and size being secondary. Fortunately, the breeding which is becoming the most fashionable is generally accompanied with the proper shape, and the highest type of the roadster and fast trotter found in those which contain a large proportion of thoroughbred blood. The members of the commission sent by the French government to inspect the horses of the United States were unanimous in giving the preference to the horses which were bred in the regions where there was the most of this blood, and in the report lately published, take the strongest ground in favor of that system. The Baron Faverot de Kerbrech, Colonel of the 23d Reg't Dragoons, was the chairman, and his report has been translated and published in the N. Y. *Spirit of the Times*, of the 15th inst. A foreign observer, he is not biased by favoritism for any particular strains, and his selection, for the place he occupied, is proof that his knowledge of form was held to be intimate, otherwise he would not have obtained the position. In comparing the trotters of "cold blood" with the higher, he writes as follows:

"These horses are built as if they had been placed between two boards, and pulled in every direction. The face is narrow and arched, the lower jaw is pinched, the neck and shoulders are badly put together; the back has a pitch and is disproportionately long, the ribs flat, the loins are set in V-shape, and fall over like a roof; the crupper is relatively short, the limbs are thin and too long for the body. They are, moreover, deficient in muscular protuberance, and, in mile heats, although the action is fine and high, yet it seems as if the animal wanted strength, and that the effort could not be long maintained. Quite different are the trotters that have a large proportion of English blood in their veins, and which count several of their next of kin in that race. This is especially the case if they come from a breeder that understood the science of crossing, and the full muscular development was insured them from the nature of the grass, etc. Then we have such animals as are turned out from some of the Kentucky and Tennessee studs, and of which Mambrino King is the most splendid specimen we have had an opportunity of admiring. This horse belongs to Dr. L. Herr, of Lexington, Ky. Imagine an Alfred de Dreux, a burnt chestnut, whole-colored, standing 15.3 hands, with an expressive head, large, intelligent, and spirited eyes; well-opened lower jaw; well set ears; the neck and shoulders splendidly shaped, long and gracefully rounded off, the shoulder strong and thrown back well; the withers well in place and top muscular; the ribs round; the loin superb; the crupper long and broad, the limbs exceedingly fine; the joints powerful; the tail carried majestically, and all the movements high and spirited—imagine all this, and you will have an idea of this stallion. He is as open, if we look at him in front, as he is in his hindquarters—the whole animal being an embodiment of purity of lines, elegance, and elasticity. He is, in fact, perfection. It is said that he is an agreeable mount, and easy in harness, and it is hard to decide whether he is a handsomer saddle or carriage horse.

Mambrino King is by Mambrino Patchen, his dam by Edwin Forrest; second dam by Birmingham, third dam by Bertrand, fourth dam by Sumpter, and fifth dam by imported Buzzard. Mambrino Patchen, by Mambrino Chief, his dam by Gano, a son of American Eclipse, and his grandam by a son of Sir William. Edwin Forrest was by Bay Kentucky Hunter, his dam, by Watkins' Highlander; second dam by Duroc, third dam by imported Messenger. This shows such a large proportion of *known* thoroughbed blood that the cavilers are forced to acknowledge it, and through the usual tactics of denying established breeding, whenever this blood is reviewed, people are beginning to understand the motives which lead to the crusade, and those who are passably well informed pay little heed to the nonsensical utterances.

Lately there has been brought to California a stallion which is worthy of being ranked with Mambrino King in justness of proportion, and which I consider very nearly a model of the horse for farmers to endeavor to rear. This is Piedmont, by Almoret, his dam by Mambrino Chief, grandam by Gray Eagle; and from a letter lately written by General Withers and published in the *Breeders' Gazette*, was thoroughbred, or nearly so. Rating him as highly as I do, a full description is given, and will take the place of an imaginary model, though in future papers the consideration of form will include comparisons which will be explanatory of the advantages arising from a particular configuration.

To many readers it is sufficient to say that Piedmont is a big, fine-looking horse, a chestnut in color; but nowadays a majority are not so easily satisfied, and not a few who must have an accurate description of the "points," and the reasons why the delineator extols him in such flattering, general terms. The observer, at first glance, is prone to think that when his hight is given at 16 hands the stature is overrated, though the standard shows that he is a trifle over the mark, and the justness of proportion takes away from the actual measurement when the eye is the criterion. In color he is a chestnut of the finest shade. Rather lighter than bronze, a trifle deeper than old gold. Lustrous, not the metallic sheen which is seen in the plumage of birds—livelier in hue and softer in the shading. With the exception of some small white spots on the right quarter, the rich chestnut is only broken by where the girths have left a few streaks, and those on the hip look like tiny splashes of froth flung from the bit in the excitement of fast motion. The mane and tail are nearly of the same shade, and the hair is as fine as in those which trace their descent through generations of aristocratic blood. On the whole, he is a picture admirable from any point of view, standing erect on every limb, and with an air of conscious superiority.

The most fastidious esthetic could scarcely find fault with the justness and harmony of proportion he exhibits when thus posed by himself. When examined in detail the over-critical horseman will be troubled to find a single faulty point, or rather to pick a flaw which he can sustain with arbiters who are competent judges of form. "From the ground up" he is well balanced. The feet are naturally of good shape, though the errors of the shoeing forge has occasioned a quarter crack and an elevation of the horn above it on the left forefoot. This rather mars the appearance by interfering with the true circle of the coronet on that one foot. The hoofs are dark, saving a harrow strip on the right, and they have the proper angle. The pasterns are of good length, and have just the right slope to obviate concussions and give elasticity to the stride without indicating weakness. The cannon bones, metacarpals and metatarsals, are short, and the tendons are prominent without blemishes of any description, giving a width and flatness to the limbs which insure strength. The knees and hocks are broad, without the least tendency to coarseness, and yet afford room for the ligamentary attachments. The arms and gaskins are muscular and long from the elbow and stifle to knee and hock. The upper arm, humerus, is long, set at the proper angle with the scapula, and well clothed with muscles. There is a corresponding length in the femur, from the stifle to the point of articulation at the haunch, and the covering of muscles fills this portion of the frame to an immense size. The shoulder-blade is long, rising nearly to the top of the withers, wide, falling well back into the sway, and with plenty of muscle. The slope of the innominatum is sufficient to throw the stifles well down, without giving any approach to the "pacing quarter," and the muscular development, of course, must correspond with the power shown in the upper thigh and gaskin. The "middle piece," as it is termed, that portion lying between shoulders and hips, is extraordinarily good. There is plenty of room for heart and lungs, and the back ribs are long and have the proper curve. There is plenty of evidence that the vertebral column is large, and toward the loin the muscles on either side of it rise above the bone. The neck is of good length, strong and tapering to the setting on of the head. The crest is moderately arched, and the throttle distinct. The head is rather below the medium size, with great width between the jaws, the eyes as good as can be imagined, the ears somewhat short and pointed. Standing so as to have a side view, he exhibits a good length of body, on legs which are well proportioned to his size. The "speed angles," as some call the degrees of obliquity between the haunch-bone and stifle, and the angle formed by the hock, are such as will suit a majority of horse fanciers, though this is part of the configuration which gives rise to divergent opinions. One favors a straight quarter, after the Arabian model; another likes the ultra slope of some pacers. Between these extremes is the most satisfactory for a fast trotter, and a medium, such as Piedmont, presents the best. A straight or crooked hind leg elicits the same amount of argument, and the formation of the hock is the subject of frequent disputes. In these respects there is a mean, the hock being wide enough to insure a proper degree of strength, without the excessive width like that of the ox, and the bend is just right to give freedom of motion. The outlines from this side view are nearly faultless, and the filling up would be difficult to excel. From a position behind him, the most striking part of his configuration is the immense width of the stifles and fullness of muscle. The quarters are deep and powerful. The inside of the gaskin is moderately heavy, the hamstrings large.

In front, the intelligent countenance is the attractive feature from that point of view. There is plenty of breadth between the eyes, the forehead broad and prominent. The muzzle is cleanly cut, the edges of the nostrils thin, and the superficial facial veins showing through the thinness of the skin. The fore-legs "come to the ground" exactly right, converging sufficiently to assure his action being straight, without the knees being so closely together as to be in danger of injury from the passing foot. The "fork" is capital, the elbow far enough from the chest, and the brisket is prominent. It is rare, indeed, to see a trotting-bred stallion with so much quality, and he comes very near to the type of the thoroughbred throughout his whole conformation. He has size, style and finish, and would rank high as a progenitor for carriage horses, if he did not possess speed, and with weight enough to give value for general use. In the right condition to go into training he weighed 1,140 lbs., and, as there is no grossness, that weight means the capacity to perform any task. Altogether, he is a horse which a farmer would prize, either in the team, carriage or road, and one of his stamp would attract purchasers at a big price, even if not the possessor of great trotting speed.

THE DAIRY.

Ensilage of Alfalfa.

Our Santa Barbara correspondent, Horace J. Smith, sends us an account of an interview with Mr. R. T. Priest, who is canvassing this State in the interest of Enright's portable engines, concerning his experience with silos. Instead of an expensive pit and elaborate arrangements, he simply laid down green, freshly cut alfalfa in layers of six to eight inches thick between layers of dry straw about four to five inches thick. The result was that the dry straw came out as green as the alfalfa, and was only distinguishable from it by the straightness of the stalks, and evidently very much enhanced in its nutritive qualities. As the cattle did not distinguish between the straw impregnated with the juices and richness of the alfalfa and the genuine article, it is fair to presume that what valuable elements would have been otherwise dissipated in the atmosphere, by the usual method of curing the alfalfa, were simply absorbed and transferred to the less nutritious and attractive straw. Whether this is a new experiment or not, Mr. Priest does not know, as he went it blind on his own judgment and of his own motion, trying for this his first and only experiment only a small quantity—say one-fourth ton of alfalfa. However, the experiment was so *entirely* successful, that this year he purposes trying it extensively and with varying proportions of alfalfa and straw. Being a cautious man, he did not want to mislead other farmers by proposing this scheme to them till he had more thoroughly tested it himself, but there is no patent on the idea, and if it commends itself to other farmers, they will doubtless try it for themselves. He suggests this caution to others, viz.: That his ranch being in the dry San Joaquin valley, others who live where the coast fogs and dampness is greater, may need to use larger proportions of dry straw, or thinner layers of alfalfa.

Mr. Priest testifies strongly to the decrease of cattle throughout the State, and prognosticates a speedy and sharp advance in beef; believes that all land suitable for alfalfa should be laid down with it; is convinced that such land is worth $200 per acre; instances a case of a man carrying 1,300 sheep on 100 acres of alfalfa with a gross yield from wool and increase of $5,200 per annum, with expenses of only $1,200; and is disposed to urge farmers with alfalfa land to go into cattle raising.

Notes on Butter Making.

At the last meeting of the Healdsburg Grange, Mrs. John Price gave her method of butter making and packing, which we quote from the *Flag*, as follows: First, milking should be done regularly, or as nearly so as possible, and as soon as the milk is brought in, let it be strained in thoroughly cleansed and scalded pans. When it is cool weather I place the pans on the stove and let the milk come to scalding heat, not boiling; then remove and place them away for the cream to rise. Place the pans separately, without covering until cool; then rest the pans one above the other with small boards between, and being cool no steam will rise to make dampness or mold on the underside of the covers. I find this process in cold weather an improvement in quantity, flavor and color. In cold weather place the churn where it has a chance to become gradually warmed through the day, churning in the evening. In warm weather churn early in the morning, and you will have firmer and yellower butter than if churned at any other time of day. I also think milk ought to be kept where a fresh current of air passes through the cellars or apartment most of the time. Always wash the butter with two waters, pouring off carefully and then salting. Place it in a cool place and let it remain one or two days, and then thoroughly work out all the brine. My butter is then fit for packing or working into rolls to sell. If you pack in oak barrels, place a cloth inside the barrel saturated with brine to prevent the butter from touching the wood; then pack the butter firmly, placing a strong brine of salt alone on top; also place a weight to keep it in place. If I do not have butter enough to fill my jar or barrel at the time of commencing, I fill with brine, pouring off each time I wish to put in more butter and replacing the brine each time. That excludes the air. I have never failed to keep butter sweet and good for a year. I do not know that you will feel much profited by my experience, as all my butter making has been done without any of the modern improvements—just the simplest way possible.

Hay in Georgia.

We find in the last report of the Georgia department of agriculture, several interesting paragraphs concerning the hay values of certain newly introduced grasses, which are of local importance here because the grasses mentioned, are now growing in many parts of this state. Among other things, it is said that large harvests of Bermuda hay were realized in some of the counties of middle Georgia, where this valuable is being more highly appreciated every year. It makes hay inferior to none, not even excepting the famous timothy, with the advantage of being more permanent, when once well set. From being formerly considered an unmitigated evil, it is now considered a great boon to farmers who wish to breed stock, or dispense with the expense and annoyance of unreliable labor. Quite a number of farmers in some of the middle counties, now realize a better gross income from their lands which are set in Bermuda, than they did from the same lands when they were cultivated in cotton; and this with not more than a tithe of the annual expense.

Sorghum halapense, known also as "Means grass" and "Johnson grass," is also growing in popularity as farmers grow more familiar with its value as a hay grass. It, like Bermuda, is perennial, though the tops are killed by severe frosts. The roots being perennial, the cost of renewal of sod is saved, while the land is being continually improved by their occupancy of the soil. This history of the introduction of the grass into this country, as given by Dr. Phillips, now in Mississippi, is interesting. He states that the seeds were sent as food for some birds presented by a party in Japan to the Governor-General of Cuba. The birds died, and the seed was thrown out, but germinated and attracted much attention by the luxuriant growth of the grass, which became quite popular on the island, whence a Mr. Means, of South Carolina, obtained some seed and cultivated the grass in that State, with satisfactory results. Some of the seed was also planted by a Mr. Johnson in Alabama, near Marion Junction, where large quantities of the hay are now harvested annually by Mr. Herbert Post, who succeeded Mr. Johnson. He thus accounts for the two names, "Means" and "Johnson," but fails to account for that of "Guinea" grass. The Guinea grass has a succulent, fleshy root, resembling that of common swamp cane. It is even more difficult to exterminate, after it has once taken entire possession of the soil, than Bermuda. It yields a larger quantity of hay per acre than Bermuda, but coarser than the latter and inferior to it in quality. Unlike Bermuda, also, it produces seed—the Bermuda does not. There is a joint grass resembling the Bermuda somewhat, which does produce a few seeds. This, being confounded with Bermuda, has made the impression on some that Bermuda produces seed. There are a great many acres in Georgia, which might, with profit to their owners, be planted in either Bermuda or Guinea grass. The very fact that they are difficult to destroy, gives them greater value, as they protect the soil "in spite" of the efforts of the farmer to waste them by constant clean culture.

Crab grass is not appreciated by the Southern people as a hay producer. They have expended so much money and labor in battling against its encroachments upon the dominion of the cotton plant, that they recognize with difficulty its good qualities. More of this hay was saved last summer and fall than probably was ever harvested in the State in any previous year. Reports from every section of the State represent the crop of "crab" or "crap" grass as being unusually fine, and that more than ordinary pains were taken to save it.

Crab grass is growing in Los Angeles county, in this State, and has been highly commended by one of our correspondents.

INTERESTING METEOROLOGICAL COLLECTION.—Prof. F. Mandoj, of Albano, Italy, recently described a meteorological phenomenon which he observed at Noci, a village between the Adriatic and the Gulf of Tarentum. The sky, which had been clear the whole morning, with a cool and pleasant breeze, began to darken soon after noon, with clouds indicating a storm from the south. About 4 o'clock other clouds came rapidly from the northwest, from which a gentle rain fell. The south wind soon increased, driving its clouds before it, and accompanied by a violent rain and numerous terrible peals of thunder. When the clouds from the south passed those from the northwest, the flashes passed between the strata of cloud so rapidly and yet so silently as to produce the appearance of majestic columns of light, lasting in some cases as much as seven seconds. Prof. Mandoj supposes that the two clouds were charged with electricity of the same kind, but, as they were moving in different directions, they might be compared to an immense electrical machine, of which the upper cloud was the conductor, the lower the disk, and the wind the motive force. The moisture of the air served as a conductor for a continuous silent discharge of the electricity that was induced by the motion of the clouds. In order to test his theory, he connected an electrical machine with an insulated disk. Upon electrifying the disk with electricity of the same kind as that of the machine, and moistening the air between the disk and the ground, while the machine turned rapidly in a warm and dry air; he produced columnar flashes similar to those of the storm.

The Stock Yard.

Cattle at the Fairs.

Editors Press: Mr. Oldman's article on "Judging Stock at the Fairs," is certainly amusing, if not very instructive. It reads as if the fair alluded to had taken place in some other State than this. I have had some experience, but not much, in attending fairs with cattle in California, but never had the good or ill luck, whichever it may be, of falling in with any of the judges before their work commenced. As a general thing they have been unknown to me on such occasions. The nearest approach to Mr. Oldman's experience was a report that a bull calf had been promised by an exhibitor, at one of our fairs, to one of the judges, if he succeeded in giving the sweepstakes premium to his bull; but, somehow, another exhibitor was opposed to the same committee awarding the sweepstakes premiums as the one which had awarded the class premiums, consequently obtained another committee and the sweepstakes for the best bull. However, we have reason to think that such cases are rare, and that, as a rule, judges do the best they can in awarding the premiums in their respective classes; and any evil that comes from error of judgment, or otherwise, awarding the premium to the animal that is not the best in the class is small in comparison with other evils connected with the necessary fattening, blanketing and training required to get cattle into show condition.

That such fattening and training is injurious to the constitutional vigor and breeding powers of animals we have abundant proof by personal observation and otherwise. One can hardly peruse an agricultural paper of any note, about or immediately after the fair seasons, without seeing complaints, loud and many, about the evil and pernicious effects of over-feeding stock, especially cattle, sheep and swine, for the fairs. The following, taken from the October number of the *National Live Stock Journal*, contains a warning that all intending purchasers of stock ought to heed in time:

"At one of the English national agricultural societies' cattle shows, at which I was present, a noted sheep breeder, who took the first prize then on a pen of half a dozen 18-months ewes, casually observed to me, in a conversation over them, that he had just sold the lot at an extra high price—naming the sum in guineas—the amount of which I do not now recollect. I asked him if, in doing this, he was not afraid that their produce would hereafter come into competition with him at future cattle shows. 'Not a bit of it,' was his confident reply, 'for these ewes have been so highly fed to put them in the finest show order, that they are spoiled for the production of offspring which can rival mine of the home flock. Their lambs will always be wanting in constitution. I never allow my own breeding rams and ewes to be fed up like this for an exhibition, but simply keep them from birth to breeding in good growing and working condition.'"

However, fortunately or otherwise, according to the light in which we look upon the matter, we have not the inducements in this State to so excessively overfeed our cattle for exhibition. In the first place, there are but few herds of Short Horns in the State; then the premiums offered at the fairs are so small that there is little encouragement for making competition lively, consequently it is no object to a breeder to prepare and exhibit his cattle for the sake of the premiums that are given; if he exhibits at all, it must be with some more ultimate object in view than the mere taking of prizes, such as making it a means of advertising his herd and bringing it into public prominence. That may be well enough for a beginner, but to those who have become well enough known to have obtained a reputation for themselves as well as for the superiority of their cattle, "going to the fairs" appears to me in an unprofitable light, especially when the premiums given have to be divided among so many. Whenever I have taken cattle to the fairs, I think to seven fairs in 12 years, I have, without any special preparation of the animals exhibited, averaged enough in premium money taken to pay the outgoing expenses—always managed on an economical basis—and had all my own trouble for nothing, which is not a very comforting assurance of the profitableness of the business. Like all other businesses, it is best left to professional hands.

All who have attended cattle shows for the purpose of taking especial notice of the cattle on exhibition, well know that it is useless to exhibit stock in ordinary breeding condition. To be successful they must be fed up to a state of obesity quite inconsistent with the keeping of a regular breeding and milking herd. Therefore, nine times out of ten, a successful show herd means an irregular breeding herd. Now, the question for breeders to consider is this: Will it pay, or is it prudent to run the risk of ruining, or at least injuring, the breeding qualities of one's best animals by keeping them specially for show animals? I think not. Professional showers prepare a set of cattle, enough, if possible, to show one or two in each class, and take them about from one fair to another. Thus it is pretty much the same cattle that take the principal premiums at all the fairs at which they can be exhibited. By pursuing this course, the few, no doubt, make a profitable business of it; for, besides the money taken for premiums, there are generally some sales made, chiefly, however, to beginners or inexperienced breeders. The prudent buyer is not so easily caught by buying at the fairs; he generally wants to see the herd as a whole, on the farm where it has been bred and kept, and find out the manner in which the regular breeding stock is managed; also to see how the same class of cattle thrive and produce under ordinary circumstances, for he very well knows that the pampered ones are a very uncertain investment, if intended to be kept as breeding cattle under good, fair management; but if bought with the view of their being kept in the same high condition, and as show cattle, they may answer the expectations of the buyer.

Then there is the milking qualities to be considered. Short Horn show cows certainly do not excell in that particular in these days. Who of us has seen a cow of that breed exhibited with a good bag of milk, likely for yielding five or six gallons a day, or four, or even three. As a rule, the milking qualities are entirely ignored and many cows that are on exhibition year after year do not even give enough to support their own calves.

But we are glad to learn that there are many breeders who are waking up to the mistake made in selecting their cattle for the foundation of a herd, solely from a beef-producing point of view.

Ireland, that has been long and justly celebrated for producing cattle of perfect symmetry, for beef, now finds her more intelligent farmers looking about them for Short Horn cows that will yield a profitable supply of milk for dairy purposes; so, also, the English dairyman are paying more attention to breeding dairy Short Horns, that breed being generally preferred on account of its propensity for fattening quickly when dry. We are in a State where the Short Horn breed is not yet sufficiently known, as it should to be fully appreciated for its combined excellencies for the production of butter and beef. So let us, who are already breeders, endeavor to keep up with the requirements of the times, and produce a class of cattle second to none for the purposes for which they are to be used.

Robert Ashburner.

Baden Station, San Mateo Co., April 22.

Short Horn Breeders' Convention.

The annual convention of the Short Horn Breeders' Association of California met at the rooms of the Santa Clara County Pioneers, San Jose, April 18th, at 11 A. M., President Cyrus Jones in the chair; R. Ashburner, Secretary. We are indebted to the San Jose *Mercury* for the following outline of proceedings:

At the morning session, the only business transacted was to appoint a Committee on the National Herd Book question, consisting of Col. Younger, San Jose; Moses Wick, Butte county, and M. B. Sturges, Alameda, with instructions to report at the afternoon session.

The convention reassembled at 1 o'clock P. M. The President read his annual address, as follows:

Gentlemen of the Convention:—It is with pleasure that I meet you. We have again met in annual convention for the purpose of comparing notes and expressing our views upon the breeding and rearing of Short Horns, and all topics connected therewith, and also for the election of officers for the ensuing year. You will excuse an extended address from me at this time. As I retired from the business three years ago, it will not be expected that I feel the same interest now as I did when I had the care of a herd to look after and claim my attention. There was no other business that I took such a delight in as that of breeding and caring for Short Horns. Although having retired from the business, there is nothing that so delights me as when I am looking at the beautiful and symmetrical form of a fine herd of Short Horns, or conversing with their owners. I have always thought, and still believe, that there is no business so elevating as that of rearing fine stock. It not only cultivates the mind, but it improves the herds and flocks of the whole community, and in so doing adds more money to our bank account, and that is the real object of all business pursuits in life. But, gentlemen, there are many topics that will come up in this convention for your consideration. One, probably more interesting than any other, will be the National Herd Book question; that is

Of Vital Importance

To all breeders of Short Horn cattle who wish to keep their herds pure. I have been written to to have whatever action this convention may take forwarded to the *National Live Stock Journal*, at Chicago, for publication. I see by the proceedings of the State Board of Agriculture that their course pursued last year in striking out all second premiums on cattle did not meet with success, as at their meeting last week they reinstated them, and also made separate classes for the Ayrshires and Devons. I think that they have come to the conclusion that when members of the Short Horn Breeders' Association say a thing they will do it, and that our action last year taught them a wholesome lesson. Gentlemen breeders, I have been your presiding officer for the last seven years. I have served you long and faithfully, and at the two last annual meetings I asked to be excused from further services as President, but was re-elected and forced to serve, with all my objections. I now take this opportunity to positively decline to serve longer, as I think and believe that it is to the best interest of the association that some one who is directly interested in breeding Short Horns, should be chosen, which will give vigor and add new life to the association. I shall continue, as I have in the past, to render the association all the advice and influence in my power for its complete success.

History of Short Horn Breeders.

Col. Younger said he had been requested by the President to prepare a history of Short Horn breeding in this State, but that he had not found time to do so. It would require ample preparation to enable a person to write a correct history.

Jones—I would suggest that something like a history or sketch of Short Horn breeding in this State, past and present, should be prepared by some one. It would be very interesting, especially to those who have just commenced in the business.

On motion, the article on Short Horn cattle, by Col. Younger, in the last annual report of the Secretary of the State Agricultural Board, was read. The Secretary then read an article on color, taken from an English paper. The President read a communication from Jesse D. Carr, in which he expressed his regret at not being able to be present. The

Herd Book Question

Being brought up, the committte adopted the following address, read by Col. Younger, and the preamble and resolutions appended:

Mr. President and Gentlemen:—The Herd Book question is being discussed all over the United States by the breeders of Short Horns. It is admitted by all that if we had but one, properly conducted, it would be far better for the breeders and those interested in them. But after carefully reading all the articles that I have seen and the reports of conventions which have taken action on this most important subject, I have failed to find a well-digested plan by which a single herd book could be successfully published. Many difficulties present themselves that cannot be ignored. First, we have two herd books published that are intended by their publishers to be national in character, and it is as well to admit that both are ably edited, have done much good, and are entitled to the thanks of the Short Horn breeders of the country. Each has its friends and neither seems to be satisfactory to many breeders. The question arises: Have the disaffected breeders the brains, the means and the influence to publish a new herd book in opposition to the two mentioned above? It would be a most dangerous undertaking. The first and most important move would be to adopt just and unalterable rules to govern the recording of pedigrees. Then the money ought to be on hand to insure the publication of the new herd book; and third, a managing board and editor that would command the confidence of the Short Horn breeders of the country. This is a great undertaking. To make such rules as would be just and give satisfaction to all, to raise the funds, to appoint a board and editor, is no light undertaking, and the sooner we admit the difficulties that are in the way, and that they must be removed or got out of the way, the better it will be for the Short Horn interest. What plan can the breeders adopt to make the one herd book a success? Our plan would be to call a convention of all the breeders, or their representatives, with power to adopt the rule for registering, to appoint a board of directors to carry out what the Convention may agree upon, to adopt a plan for raising money, and to draft a plan by which both herd books could be used—for it would be a waste of time and money to set up opposition to them. Mr. Allen, editor of the *American Herd Book*, is deserving of great consideration from the Short Horn breeders, and is entitled to honorable treatment from them; and so are the publishers of the *Short Horn Record*. At the time the foregoing was written, I received the *National Live Stock Journal* of April, and have read the very able article on the Herd Book question, contributed by Mr. Wm. Warfield, of Lexington, Ky. His review of this question is an able one, and throws much light on the subject, pointing out the only way to settle this much-vexed question. We think to adopt the English rule of five crosses, then buy out both herd books, and adopt the *American Herd Book* as the basis to build the new one on, the work would be more than half completed; or we could use both as a foundation. No new herd book could live in the hands of any company, and ought not to, who would start it in opposition to the two now before the public. The great expense it would entail on the breeders, and the confusion that would ensue, would be so apparent that breeders would continue to register their cattle in one or both as heretofore. But to use one or both of the herd books as a foundation, and adopt the numbers of "A. H. B.," would do away with much of the confusion in numbers. It is the oldest herd book, and in it is recorded thousands of the best Short Horns that have ever been bred. Suppose there are many errors in it; will there ever be a herd book published without errors? From the foregoing considerations we submit the following:

Resolutions.

Whereas, The members of this convention, feeling a deep interest in the settlement of the herd-book question, and being breeders of Short Horns, deem it our duty to give an expression of our sentiments on this most important subject.

Resolved, That it is to the interest of the Short Horn breeders that there should be but one herd book published in the United States, and we are in favor of adopting the English standard of five crosses to entitle an animal to be registered in said "National Herd Book."

Resolved, That it is the sense of this convention that the *American Herd Book* and the *Short Horn Record* should be acquired and used as the foundation for the proposed new herd book.

Resolved, That we think it would be dangerous to the interests of the Short Horn breeders, and unwise to publish the new book without having the control of the two herd books mentioned above.

Resolved, That if the forgoing resolutions are carried out by a National Convention of breeders, or by any other means that may teach the same object, we, as members of this convention and breeders of Short Horns, pledge ourselves to stand by and help by our means to carry out the project.

On motion the Secretary was instructed to forward to the Secretary of the Agricultural Board a resolution asking that the premiums on Short Horns be restored to the same as in 1878-9.

Cyrus Jones was unanimously elected to act as a delegate to the National Short Horn Convention of this year.

The following officers, to serve for the ensuing year, were elected: President, Cyrus Jones; Vice-President, M. Wick; Secretary, R. Ashburner; Treasurer, M. B. Sturges.

The convention adjourned to meet next year at the call of the President.

Yerba Buena Jerseys.

Editors Press:—Breeders of Jersey cattle may be interested to know that I have imported from Massachusetts the Jersey bull, "William of Scituate," grandson of the most noted cow in the world, "Jersey Belle of Scituate," who produced over 700 lbs. of butter in a year, and 25 lbs. 3 oz. in a week. My band now includes bulls "Victor of Yerba Buena," imported from the Island of Jersey; "Timon," his son, out of "Mon Plaisir of Yerba Buena," and "William of Scituate," all solid color, and from the best blood obtainable. Also 40 cows and their descendants, imported from the island. The band now contains representatives of the noted Scituate and Commassie strains, thus constituting the best herd in the State.

Auction sales at the East indicate increasing interest and higher prices for Jerseys. Breeders no longer pay for fancy colors alone; they must have production as well, and cows that will make 16 lbs. and upwards of butter per week, and their blood will bring long prices, many animals of that class rating as high as $5,000.

H. Price.

Yerba Buena Ranch, Santa Clara Co.

To Clean Incrusted Supply Pipes.—A correspondent of an exchange writes: "One of the most annoying accidents that can happen to the steam-engine runner, is to have his water-supply pipes choked up with lime and other solid incrustations. Especially in the hot-water pipe, lime is apt to settle and incrust on the iron pipes, till they become completely filled up, so that no water whatever can pass to the pump or injector which forces it into the boiler. In such cases it is customary to take up the pipes and try to loosen the solid matter by pounding on the pipe and breaking it out, or by making a fire along its whole length and burning it out. In a very recent obstinate case one end was stopped up with a plug, and, standing it upon end, coal oil was poured in as long as any would go in, and the whole was left to stand till morning, when the whole was slid out in a solid core. While this may not always work, it is certainly worth trial in obstinate cases.

Metallic Designs on Glass Obtained by the Aid of Photography.—An ingenious method of obtaining mirror-like designs on glass has been devised by Leclerc. The glass, having been silvered by the chemical process, is coated with a thin and uniform layer of sensitive bitumen, and this is exposed under a transparency, the next step being to wash away the unaltered bitumen with oil of turpentine, so as to leave the bituminous design on the silvered glass. The application of moderately strong nitric acid removes the silver, excepting where it has been protected by the bitumen, so that the metallic design shows like a mirror from the reverse side of the glass. The plate may be backed by paint or any other suitable material.

Steel may be "blued" by heating it evenly in an ash bath—that is, a quantity of sand is spread over a sheet of boiler iron and heated up to about the boiling point of oil, say 600°. If a little oil is rubbed over the surfaces with a piece of waste, the color will be better. All articles to be colored should be polished.

N. Kohlman, a hide dealer of Stockton on last Friday evening allowed two men to ride with him on his wagon at the Mountain House, near Livermore pass, as he was returning home. Shortly after the men seized and robbed him, after which they escaped in the brush.

A large number of deaths have lately occurred among the Russian creole population in Alaska. Through want and disease these people are rapidly decreasing in numbers.

WHITE LEAD.

USE NONE BUT HOME MANUFACTURE!

Guaranteed to be Superior to any imported. The "Pioneer" White Lead is an entire Pacific Coast Production, and it is guaranteed free from any adulterations. It is STRICTLY PURE. It is superior in COLOR, BODY, FINENESS and DURABILITY to any made elsewhere in the world. Use no other. The use of the "Pioneer" White Lead means the employment of every industrial interest on the Coast—the Miner is employed, the Farmer raises the oil seed, the Mechanic makes the machinery and kegs, and the laborer has occupation. The purchase or encouragement of Foreign manufactures, is SUICIDE to every manufacturing interest on this Coast, and to our dependence as a community, and integrity in the employment of intelligent labor and to the consumers of our natural and home productions.

No matter how specious arguments of others may be, reflect and consult interests, not of the moment, but of the future, your own happiness and welfare, and that of your progeny, and promote and establish it by using nothing but HOME MANUFACTURES. In your painting wants use nothing but PIONEER WHITE LEAD.

Every First-class California Storekeeper has it.

RUBBER PAINT.

THE PACIFIC RUBBER PAINT

Was the Original RUBBER PAINT introduced on this coast. At time of its introduction the Averill Paint Company, since changed to the California Paint Company, was the only manufacturer of Mixed Paints in California. Our advent with an article of Paint, the manufacture of which was the result of a PRACTICAL experience of over 30 years, so completely retired the paint of our competitors that they in their utter ignorance of all business courtesies or honor, counterfeited our trademarks and labels. We ask the question, if they had confidence in their own stuff, why not make an honorable stand-up fight on the issue of QUALITY and merit. But they displayed their cowardice and contemptible littleness by evading an honorable and business issue, and resorting to putting up their mixtures under a title—RUBBER PAINT—which we had made for years before a record for, as the "Best Mixed Paint" made in the world—a record earned by our practical experience and public trial.

DON'T TAKE ANY MIXED PAINT EXCEPTING THE PACIFIC RUBBER PAINT. SEE THAT THE WORD PACIFIC IS ON EVERY LABEL.

Any other so-called RUBBER PAINT is a Miserable and Contemptible Imitation.

If your Storekeeper don't keep it, send to us direct, and we will with pleasure give you color cards, prices and such other information as you may desire.

WHITTIER, FULLER & CO.,

Manufacturers Pacific Rubber Paint. - - - - - - - - San Francisco.

REDLANDS.

The owners of the Redlands tract having disposed of a large portion of their lands, now offer for sale one hundred and fifty acres only, at $125 per acre, this being all that will be offered the present season.

Redlands is located on the south side of Mill Creek Ditch, between Old San Bernardino and Crafton.

The lands are a clayey loam, very similar to the lands at the head of Magnolia Avenue in Riverside.

There are no fences on the land and no brush to clear off.

The tract is being put on the market as rapidly as the water can be put upon the lands, and no faster.

One thousand acres of the tract have just been surveyed and platted, about nine hundred acres of which have already been sold. The price of the remaining tracts is $125 per acre.

The third five hundred acre tract will not be put upon the market before the winter of 1882-3. In the meantime the system of irrigation will be completed by finishing the large reservoir conducting the waters of the Company to the reservoir in pipes and flumes, and laying concrete pipes through the tract to carry water from the reservoir to the highest point on each tract.

The main avenues are one-quarter mile apart, 100 feet wide, and run from northeast to southwest for convenience of irrigation. The course of the sea breeze is parallel with these avenues.

The cross streets are sixty feet wide, and run at right angles with the avenues every half mile.

The tract is subdivided into ten-acre lots, with a town site composed of smaller blocks.

Its situation is the finest in the San Bernardino Valley, the view being unequalled, and the elevation near 2,000 feet above the level of the sea.

The climate is unsurpassed, the location being so far inland that fogs and northers are almost unknown.

The title to the land is United States patent, and is therefore beyond question.

The Water Right is ample and beyond dispute. It consists:—

First—Of fifty shares in the Sunny Side ditch, one of the oldest ditches in San Bernardino county. This water will be conducted from the Sunny Side ditch to the Redlands reservoir in a ditch flumed part or all of the way, so that no water will be lost by seepage. The ditch is already constructed and will be flumed before the next irrigating season. This is good for 500 acres of land.

Second—An eighty-inch stream developed in Santa Ana Canyon. This stream is being piped down to the head of the Redlands ditch, so that the entire water supply will be handled without loss. This stream is good for 500 acres more of land.

Third—Two reservoirs will be constructed. The work on these is now in progress. The largest reservoir will have a capacity sufficient to cover 500 acres of land 9 inches deep with water. There is an abundance of winter water to supply this reservoir. The second reservoir will be much smaller. The large reservoir will cover 17½ acres of land, and will be 60 feet deep in the deepest place

Fourth—The water will be conducted from the reservoirs to the highest point on each ten-acre tract by means of concrete pipes, thus saving expense and wastage in the distribution of the water. These reservoirs will irrigate another 500 acres.

These water rights, reservoirs, pipes, flumes, ditches, etc., are the property of the Redlands Water Company,—a company incorporated to furnish water to the Redlands tract of 1,500 acres with 1,500 shares of stock. One share of stock goes with each acre of land, so that when the land is all sold the owners of the land own and control the water, and they only charge such price for the water as is absolutely necessary to pay running expenses for handling the water in the most economical manner possible, as there are no ditches to clean.

Lands shown and business attended to promptly six days in the week only, on the tract.

☞ Send for Circular containing Map and further information.

Postoffice address, SAN BERNARDINO, CAL.

JUDSON & BROWN.

REDLANDS, 1882.

FORESTRY.

Annual Ring Growths and Rainfall.

The National Forestry Congress is in session this week in Cincinnati. The object is to promote the planting of forest trees. The programme includes a street parade and the planting of memorial trees for Presidents, authors, pioneers and others, in the public parks. Provision has been made for 93 papers to be read by different persons, selected from all over the United States and Canada. One of these papers is by Robert E. C. Stearns, Ph. D. of Berkeley, Cal., and is of much local interest. The subject is "The Growth of Certain California Forest Trees and the Meteorological Inferences Suggested Thereby."

While in Napa county, during the month of October, 1881, I noticed in a clearing lately made on the top of Howell mountain, that, in felling, most of the large trees had been sawed across at the butt, instead of being chopped down with an ax, thus making an even cross-section or plane surface, and admitting of the counting of the rings of growth.

It was my intention at the time to have taken these notes myself, and, further, to have made a diagram showing the exact width or thickness of each of the annual rings, in order to make a comparison of one tree with another and to learn whether the annual rings or growths of each year, commencing with the last year and comparing backward, year with year and tree with tree, exhibited a coincidence in thickness or a coincidence in variation. Before proceeding further in the elaboration of this point, I will state that lack of time prevented my making the diagrams, and that the following measurements of four trees of the species known as *Pinus ponderosa*—or yellow pine—were made for me by Mr. A. L. Roache, who was then visiting the region:

	Inside of bark, Inches.	Outside of bark, Inches.	Annual Rings.	Average Annual Growth inside of bark inches.
No. 1	20½	24¼	54	.3796
No. 2	27½	30½	75	.3666
No. 3	33	38	80	.4187
No. 4	24	29	72	.3333

Mean annual growth, .3745 of an inch.

The thickness of the bark, it will be seen, varies considerably. The differences in the diameters, as shown in the columns, "inside" and "outside of bark" being that of the bark on the two sides of the tree, require, therefore, to be divided by two, to give the true thickness, and gives No. 1, two inches; No. 2, one and a half inches; No. 3, two and a quarter inches; and No. 4, two and three-quarter inches.

These trees stood in such a station or position, as to uniformity of conditions, *i. e.*, character of soil and surface, exposure, etc., as to furnish a fair basis for a calculation of the kind herein made.

It will be observed, upon adding up the column of annual rings, and also the column of largest diameters, and then dividing these totals by four to get the average, that in the region where they grow, about 70 years were required to make a yellow pine 30 inches, or two and a half ft. in diameter. The mean thickness of the annual rings in the above trees, .3745 of an inch is nearly three-eights of an inch, or .375.

If we had similar and sufficient data from various places, we might make a pretty accurate approximation and generalization of the kind above illustrated; in this, the data being limited, the region to which they apply must also be limited, and to the species—the single species only—as above given.

The pines are quick growing trees, and, in common with other related forest forms, make a proportionately larger growth in their early years, or, in other words, make thicker annual rings when young than when old, though in an equally vigorous condition; so that a measurement of young trees, though useful as showing how long we may have to wait to get a profitable return in fuel or lumber from an artificial plantation, such young trees would not answer the purpose of a standard of age or measurement for the large trees of natural forests.

In the neighborhood of Berkeley, trees of the Monterey pine, 9 or 10 years of age, show a maximum diameter of one ft. three inches, being a growth of over an inch a year, and a mean diameter, so far as I have measured, of nine inches, the result of several trees. These were planted for ornamental purposes.

Sections of the following species of forest trees, indigenous to the Pacific coast, are contained in the museum of the University of California, and yield the data given below:

Abies grandis, or white fir—Large diameter, 23 5-16 inches; smaller diameter, 22 11-16 inches; mean diameter, 23 inches; thickness of bark, three-fourths of an inch; annual rings, 146; mean annual growth, .1575 of an inch, or a little under one-sixth of an inch per annum.

Abies Douglassii, or Tsuga Douglassii, the hemlock spruce, so called—Larger diameter, 17⅞ inches; smaller diameter, 16⅝ inches; mean diameter, 17¼ inches; thickness of bark, half an inch; annual rings, 96; mean annual growth, a trifle under .18, or something over one-sixth of an inch.

Abies Mertensiana—Larger diameter, 18¼ inches; smaller diameter, 16¾ inches; mean diameter, 17½ inches; thickness of bark, a trifle over half an inch; annual rings, 110; mean annual growth, nearly .160, being something less than one-sixth of an inch per annum.

These three species of *Abies* are represented in the above measurement by trees which grew in or near Gualala, Mendocino county, an exceptionally favorable station so far as moisture is concerned, the country being well watered, and the county, in common with the entire region from the Oregon line to and inclusive of Marin county as the southern terminus, being part of a meteorological province, which receives not only a greater average rainfall than other parts of the State, but also the fullest advantage of the summer fogs, which, borne shoreward by the trade-winds, are condensed by the lofty evergreens which here abound, and fall to the ground, dripping through the foliage of the trees, like a gentle shower. A comparison of so moist a region with the drier areas, shows at a glance the necessity of a careful consideration of environmental conditions in connection with deductions from data, of the kind herein referred to.

A section of *Sequoia sempervirens*, our common redwood, shows, counting from the circumference toward the center, a growth of three inches in 95 years, or, more particularly, 95 growth rings, averaging .0316 of an inch per annum. Notwithstanding the majestic proportions which the *Sequoias* attain, the above measurement, as well as an examination of the ends of a large number of redwood boards, show that these trees are of slow growth.

The measurements of a specimen of *Sequoia gigantea*, as given with great particularity by Prof. Whitney in the Yosemite Guide Book (edition of 1870), pages 147-8, give a mean diameter of 23 ft. 3¾ inches, without bark, and 1,255 annual rings, a mean annual growth of only .2229 of an inch, very nearly, being less than one-quarter of an inch a year.

It is not unlikely that the comment may be made, that the data here presented are so meager as to be of little value, though perhaps interesting and suggestive. This I am quite ready to admit, and while doing so will revert to the point temporarily dropped near the beginning of this paper, and speculate a few moments in the direction which said point indicated.

Meteorological Inferences.

Any one who has taken the trouble to examine the annual growths, or width of the annual rings in trees, has at once perceived a great difference in their thickness in the same tree. If we may assume (leaving out young trees) that this variation is principally due to the amount or quantity of the rainfall, and that rings which exhibit maximum thickness have followed in their growth seasons of maximum rainfall, and the thinner rings are consequently the result of the influence of seasons of a less or minimum rainfall, we may assume that if, upon a given date, numerous trees were felled, so that we could have transverse sections of all of the principal species, such trees being located at various points in the State, great care being taken that the trees so selected should have been subject, as nearly as possible, to the same environmental conditions, we might obtain an aggregation of data of sufficient volume to render a deduction therefrom of great value, as to the meteorology of the Pacific coast. We might find so close a parallelism between rings of maximum thickness and seasons of maximum rainfall, that we should be justified in regarding this parallelism as something more than a series of coincidences merely, by finding these coincidences so persistent as to prove a correlation; and we could, perhaps, base our weather prognostications upon something more than a guess, and learn whether or not there is a periodicity or cyclical terms of wet and dry years. Having the data before us according to the trees selected and examined—reaching back with the pines from 75 to 150 years, with the redwoods from 5 to 700 or more years, and with the *Sequoias* of the Sierra from 12 to 14 centuries, to say nothing of the testimony of other trees, the madronas and oaks especially.

The forest monarchs of the Sierra Nevada and the Coast ranges offer a calendar, whose records have been written by the elements; and so far as the giant *Sequoias* are considered, their evidence would certainly be that of the oldest inhabitants, substantially supported by their first of kin, the magnificent redwoods of the Coast ranges.

Another matter of minor, though not of insignificant importance, would be the relation between greatest diameter and the points of the compass, as to whether the greatest diameter is persistently incidental to a certain aspect or quarter of the compass. In the specimen of *Sequoia gigantea* above mentioned, Professor Whitney gives the greatest diameter, north and south, as 24 ft. and 1½ inches, while the "shorter diameter, or that east and west, was 23 ft. divided exactly even on each side of the center." "Across its longest diameter, south of center, 13 ft. 9½ inches." "Across its longest diameter, north of center, 10 ft. 4 inches," or 24 ft. 1½ inches, as before stated, a difference between the north and south side of the center of 3 ft. and 5½ and inches in favor of the latter.

Difference in the diameters may be traced perhaps to a difference in amount of heat and light, which one side of a tree receives as compared with the other; to the influence of prevailing winds according to the station, position or exposure, or to local or general magnetic influences—local as peculiar to small areas, or general, as pertaining to larger or extensive regions. An accumulation of data might show a marked and constant character in the relation of diameters to such factors of the environment; and also a marked character in the diameter of one region, as a whole, when compared with another region, where modified or different climatic conditions exist.

In a comparatively arid region, with a high mean temperature and infrequent rainfall, and a dry atmosphere, we may suppose that the southerly half of a tree, following the curve of its circumference from east by way of south, to west, might, through excess of light and heat, suffer from desiccating influences, and make a less growth than the northerly half, following the curve of the trunk from east by way of north, to west, as the northerly half would have the advantage, if advantage it be, in such a climate, of less light and heat and more shade; while in a region less arid with a much lower mean temperature, etc., the greater proportion of light and heat which the southerly half receives, would give that side of the tree an advantage over the northerly half.

As to the effect of prevailing winds in differentiating the diameter, we may suppose that the side of a tree most exposed might be affected, and the growth on the windward side much modified or repressed; while the leeward or sheltered, being protected, would exhibit a greater diameter or semi-diameter, measuring from the true center of the tree, *i. e.*, from its initial ring.

In the "big tree" measured by Prof. Whitney, the southerly half of the diameter shows the excess, indicating that heat and light were specially advantageous; but here altitude comes in as a factor, as the hight of the Calaveras grove, or rather its site, is 4,759 ft. above the level of the sea, an elevation where, though the heat of the six mid-day hours in June and July is 80° and upwards, the nights are cool; and as Prof. Whitney remarks, "during ordinary years, * * * the flanks of the Sierra are well covered (with snow) down to 4,000 ft. above the sea during mid-winter months, and a heavy body of snow lies on the passes until May, or even June." So, after the snow has melted up to and above the altitude or site of the grove, the atmosphere is cooled for a long period afterwards by the snow-clad slopes and the unmelted masses of snow upon the higher flanks of the Sierra beyond.

In the consideration of all the factors which suggest themselves, and which no doubt are more or less operative or interoperative, the least perceptible, though perhaps the most important, is that of compensation, which modifies or neutralizes what at first appear to be conspicuous and dominating influences.

What is above presented, it should be understood, is simply hypothetical, and for the purpose of awakening discussion and calling attention to a most interesting subject; one which, if generally understood, would be of great practical importance. At present the data are so exceedingly meager as to preclude anything more than speculation, or to incite to or stimulate investigation.

From a knowledge of the various points of inquiry herein suggested, might be deduced a generalization, indicating a universal and preponderating law.

Do Plants and Trees Laugh?

EDITORS PRESS:—Did you ever fancy trees and plants laughing with joy and gladness in the midst of a beautiful, warm summer shower? The invigorating influence has always impressed me with the delightful fancy that they laugh with very joy, and from boyhood I have found it impossible to resist being with them and sharing their apparent gladness. Hundreds of times have I roamed amid the beautiful beech and maple forests of the West, during a lovely summer or spring shower, until I was soaking wet. And even now, I find it impossible to resist the inclination of being out among my trees, even though warned by rheumatic twinges, that I can no longer expose myself to the delightful and refreshing warm bath that they appear to enjoy so heartily. I am even now, while writing this, almost wet to the skin by the refreshing little shower we are having today. Though driven in by the light shower, I cannot but cast wistful glances out of the window and wish that I dare venture out.

This may be fancy. I can imagine now that there are some who will laugh at the silliness of the impression, but let me assure them that, fancy though it be, it is one that has afforded me more substantial and satisfying joy and happiness than any other fancies I ever entertained. And if there was anything lacking to convince one of the existence of a Creator of all things, it seems to me that this would put the proof beyond dispute, to see trees quivering with very joy at the blessings showered upon them; with the crystal drops trickling from their bright green leaves, to enter the soil and further invigorate and nourish them through the roots. Man may build beautiful churches and altars, and dedicate them to God, and they are sacred; but how much more sacred are His own works, dedicated to man and glorifying Himself!

WM. H. JESSUP.

Haywards, April 19th, 1882.

THE British steamer *Metapedia* arrived in port on Saturday evening with a consignment of 904 Chinese, and the *Gaelic* with 840 more.

THE APIARY.

Beekeeper's Notes.

EDITORS PRESS:—It has been so long since my last on the subject of beekeeping was written, you may have concluded I got blown away by one of the many wind storms we have had this spring; or that I saw so much finer a honey-producing country during my trip through Los Angeles county, on the way to Riverside Citrus fair as to think it not worth while to say anything more about bees here. And there is something in that last idea, only for the fact that the more difficulties one has to contend with in making a successful business in a poorer place, the more there ought to be to write that would be of use to those most in need of information. In some places that we passed through in Los Angeles county, the hills are covered all around with white and black sage, sumac and wild heliotrope, the latter coming very early, and though not lasting long, producing the best-tasted and clearest honey I ever saw. Some of the beekeepers we met informed us of such fabulous yields of honey taken during good years that we felt like packing all our bees down there just to to have the benefit of the prospective good season ahead of us, until we came to remember that making money at any sacrifice is not our object in life, and the apiary on Kern island will probably give a reasonable reward for intelligent labor, and if we do not have sage, sumac, heliotrope, etc., we must see if something cannot be planted to help us out, as we found the McClure brothers doing, even in their highly favored county, within 16 miles of Los Angeles, for whilst spending a night with them they showed us the young rape plants just coming up, and extolled it quite highly as a honey producer. I liked their enterprise and hope they will succeed in their proposed enterprise of taking a large shipment of honey to Europe this fall, then return with each a companion who will make merrier singing than all the bees together can do. I regretted not being able to call on others of our apiarian friends; but that was a flying trip to gather new ideas on the diet question, see the Citrus fair and attend to some other business; so we were soon back in our old home where the warm days had set the bees humming among the willow blossoms that give them enough honey and pollen to build up on, if we help them out as I have done with the feeders, that they may be as strong as possible in the latter part of May and the first of June when we get our spring run of honey if any comes. I want to see if we cannot have less swarming and more honey this spring; thus be in better condition to stand the honey drouth and moth worm that is apt to visit us in July and August. I am proposing to keep a record book to know the condition of each swarm all the time, and if time permits me to keep it up, that will show if the Italians hold their own against the moth worm any better than the black bees. Last season I requeened all the summer from a swarm that had a well-marked lot of Cyprian or Italian bees with a good laying queen, all gentle, and not troubled with moth worm. I see an improvement throughout the apiary from so doing, and want to follow it up, thinking, as a general rule, it will be a better way of improving than by much importing of stock, though a little new blood may be an advantage, if it does not cause more disposition to swarm, as an experienced friend suggests, who runs a large apiary with almost no swarming, and he has mostly black bees that have been run for some years without the introduction of new blood, and he seems to do better in the yield of honey than some of the rest of us. There is much to be learned in this business, and if from our *California Bee Journal* the apiculturists can draw out more practical writers and give us more facts on the subject than has been done, it may pay to make the field a specialty. If not, we had better concentrate on a few pages of the RURAL as heretofore. Time will show.

ISAAC B. RUMFORD.

Bakersfield, Cal.

NEW DYEING MATERIAL.—A beautiful golden-yellow dye is now prepared from the young wood of various poplars. The young branches and shoots are cut off, crushed and brayed, and then boiled in alum water in the proportion of 10 lbs. of wood and one pound of powdered alum to three gallons of water. The liquor is boiled from twenty minutes to half an hour, and then filtered. In cooling it thickens and clears, throwing down a greenish-yellow deposit of resinous matter. When sufficiently clear the liquor is again filtered, then left exposed to the air for three or more days, according to the weather and the atmosphere. It quickly oxidizes under the action of light and air, and assumes a rich golden tint, and in this state can be used for dyeing fabrics of all descriptions. For yellow and orange-yellow shades it is used alone; mixed with Prussian blue it gives green; with oak bark, brown and tan; with cochineal, etc., orange and scarlet shades. The coloring thus produced is said to be of superior quality.

ENGLISHMEN contrast, with complacency, the swiftness and decorum of the proceedings of the trial of McLean with the conduct of Guiteau's trial.

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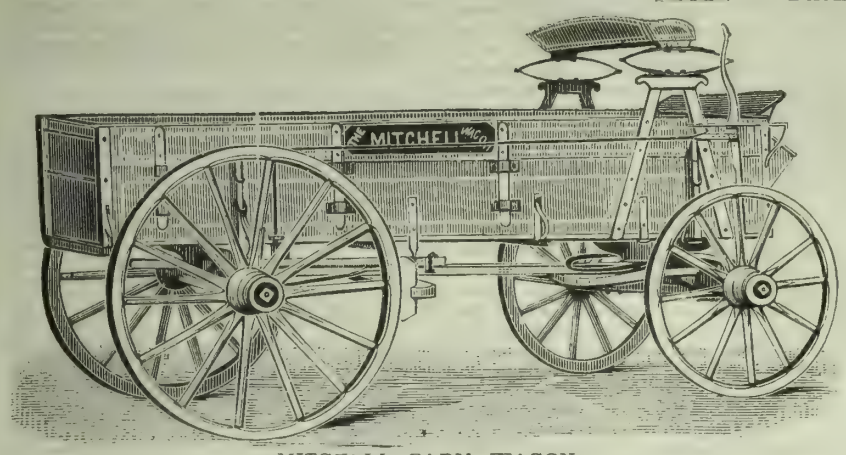

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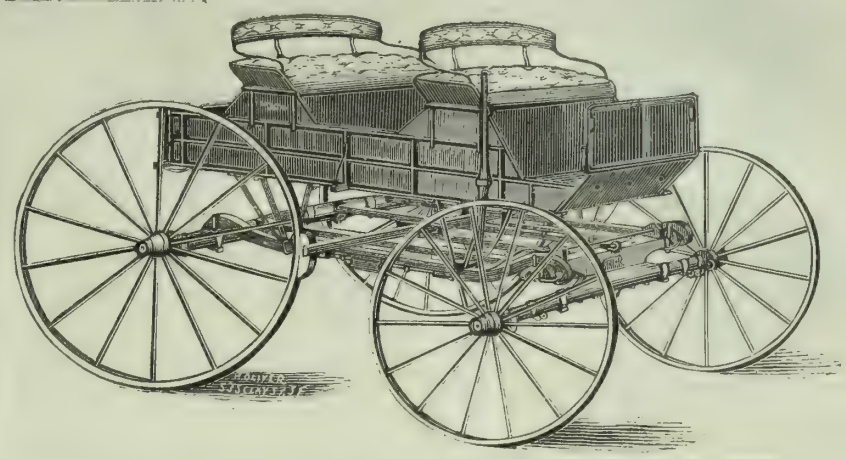
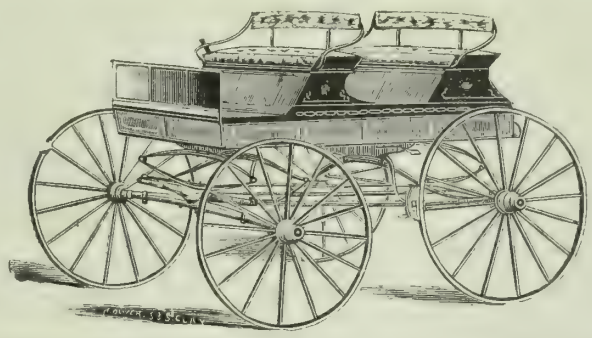


THOROBRACE WAGON—TWO OR THREE SEATS—THREE SIZES.

SIDE SPRING BUSINESS WAGON—THREE SIZES.



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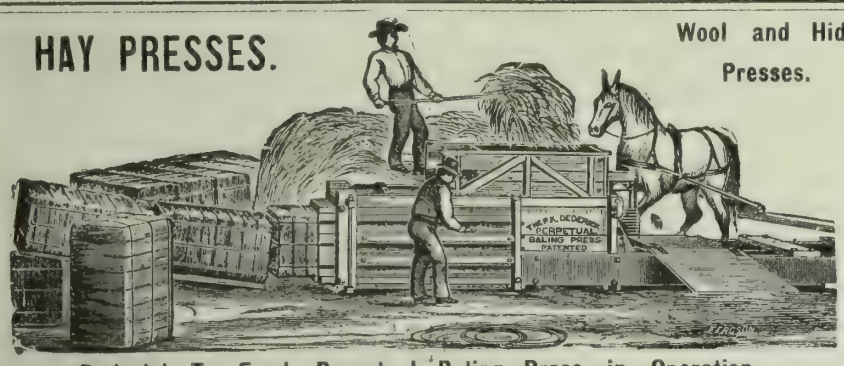

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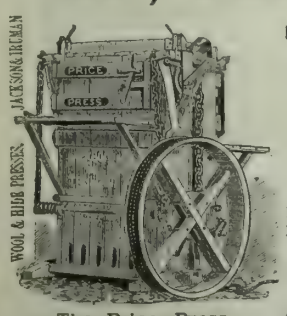

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The Harmon Seminary, Berkeley.

Work is now in progress upon a new educational institution in Berkeley. It will be a seminary for young ladies and will be conducted by Rev. S. S. Harmon and Mrs. F. W. Harmon, who are well known for their educational work in Oakland, Santa Barbara and at Washington, Alameda county, where for the last ten years they have had charge of Washington College. Acting under the advice of friends, and encouraged by the moral and substantial support of the patrons of education, they have been led to establish a new institution at Berkeley, because of the educational character of the town, which is making it the Mecca of inquiring minds, because of the beauty of the site and surroundings and bacause of its accessibility from the thriving towns around the bay and the lines of travel from the interior. Another important item in the choice of location is the local needs of Berkeley and its environs, for there is no fully equipped institution, exclusively for young ladies, within suitable distance.

The new building will be located on Atherton street, within a few hundred feet of the spacious grounds of the State University; also near to the Presbyterian, Episcopalian and Congregational churches, and a few minutes' walk from the railway and street-car lines. The building will be of the villa style of architecture, to conform with the suburban surroundings, and to harmonize with the home character which will be a feature of the institution. The front half of the building will rise three stories, and be about 50x60 ft. upon the ground. Back of this will be the central portion, 30x100 ft., two stories high, with a two-story projection in the rear 20x32 ft. Upon the left of the main hall is the reception-room and two music-rooms. Upon the right is the large school-room. The ground floor of the central portion of the building contains the dining-room and four recitation-rooms, with cloak-room and side entrance for day scholars. The ground floor of the rear projection is devoted to the culinary department. The upper floors, aside from music and art-rooms, will be chiefly devoted to dormitory uses.

The building has been planned by George C Meeker, of Meeker & Banks, architects, of this city, who has embodied therein the ripened experience of those familiar with school requirements, and has secured free access of air and sunshine to all parts of the building. The plans show about 30 light and airy, well-ventilated sleeping rooms, with the full complement of closets so dear to the feminine heart. The elevations show that the building will be tasteful in design, with a moderate amount of ornamentation. The cost of the main building and accessories, when ready for use, will be about $18,000.

It is the purpose of Mr. and Mrs. Harmon, and those associated with them, to establish an institution for young ladies which will be first-class in every particular. It is expected that the work of the seminary will arrange itself in several departments. The institution will be complete in itself, in that it will have a regular course of instruction, for which diplomas of graduation will be awarded. It will also embrace a department of instruction with a special reference to the preparation of young ladies who desire to enter the State University. In addition, there will be a conservatory of music and courses of instruction in the fine arts, modern languages and *belles lettres*, in each of which will be secured the services of masters of recognized superiority. In all courses there will be a disposition to place the institution abreast of all true progress in the art of instruction and the choice of studies for the curriculum.

The contract calls for the completion of the building by the first of July next, and the first year will open in the latter part of the same month. The people of Berkeley are disposed to look upon the establishment of the new institution with much interest and favor, as it adds another to the several claims of their town as an educational center, and provides for the separate education of young ladies in the higher branches and accomplishments, facilities for which have been lacking hitherto.

MEDICAL VIRTUES OF CELERY.--An English writer proclaims cooked celery as a cure for rheumatism, which it certainly will not harm if it fails to cure. We read as follows: "Celery, cooked, is a very fine dish, both as nutriment and a purifier of the blood. I will not enumerate the marvelous cures I have made with celery for fear the medical men should, like the corn dealers, attempt to worry me. Let me fearlessly say that rheumatism is impossible on such a diet. Plainly let me say, cold or damp never produces rheumatism, but simply develops it. The acid blood is the primary cause and the sustaining power of the evil. While the blood is alkaline there can be no rheumatism, and equally no gout. I must return to cooked celery. Cut the celery into inch pieces, and boil in water until soft. No water must be poured away unless drank by the invalid. Then take new milk, slightly thicken with flour and flavor with nutmeg; warm with the celery in the saucepan; serve up with diamonds of toasted bread around the dish, and eat with potatoes."

DARWIN'S death has brought out a series of tributes. English and continental, to him as the foremost modern man of science. The unanimity thus far is unbroken by ecclesiastical comment.

Grape Lands in Contra Costa County.

EDITORS PRESS:—I notice that considerable is said of late about the redlands of California and their adaptation to grape culture. I was in San Bernardino last October, and traveled up the valley as far as Mr. Crofton's place, going up on one side of the valley and returning on the other, giving me a good opportunity of observing its characteristics and noting the wonderful transformation, by means of water, from an almost barren waste, in some parts, to fruitful fields, orchards and gardens. The lower part of the valley appeared to me to be naturally fertile, and the same may be said of a strip of a mile or more in width all along up the valley, near the base of the mountains. It is demonstrated that the soil and climate are admirably adapted to the culture of the vine, the fig, and all kinds of citrus and semi-tropical fruits. Irrigation is, however, necessary to success. With that, there is never any danger of failure. But, in my opinion, neither the soil nor the climate, either of San Bernardino or of Riverside, are superior for grape culture to that on the northern side of Mount Diablo, in the Pacheco and Monto Diablo valleys. Much of the soil is similar to that of Riverside, and has the advantage of not needing irrigation.

There are several vineyards around Clayton from 12 to 15 years old, that flourish and produce well with no irrigation except from the clouds. The farmers generally are engaged chiefly in grain raising, and have paid but little attention to the vine, but are now planting out new vineyards to a considerable extent. The time is not far distant when this region will be as celebrated for its wines and raisins as any part of the State. Peaches, apricots, pears and plums also thrive well in this section. There are probably 5,000 or 6,000 acres in these two valleys alone, that are as good for grapes as any of the lands of the Napa or Sonoma valleys. The climate is much like that of St. Helena, in Napa valley, or of Vacaville, Sonoma county, though not quite so hot or so early as the latter.

As you go from these valleys toward Walnut creek there is a large amount of land well adapted to fruit and vines. Most of the farmers have small orchards and vineyards for their own use so that it is easy to ascertain what fruits flourish best. Lands suitable for grape culture can be had from $10 to $75 per acre. The price of grain lands ranges from $30 to $75 and $100 per acre, with more or less of improvements. The climate is warm and pleasant and very healthy. Invalids derive great benefit by a sojourn in any of these valleys during the summer months.

Considerable fruit is raised around the base of Mt. Diablo, near Clayton, that finds a market at the coal mines, about three or four miles distant. Among the orchards of note may be mentioned those of Messrs. Morsehead, Briggs, Nichols, Kohler, Stranahan, Clayton, Kirkwood and Smith. Mr. Morsehead, who owns the old Allen place, has a large vineyard and makes a considerable amount of wine. Mr. Kohler also, and Mr. Martini have large vineyards, the products of which they make into wine and brandy of a superior quality. The grain crop in this section is looking well, and, with one or two more good showers, will produce an abundant harvest, provided the hot north winds do not prevent. C. E. W.

Oakland, Cal.

Diphtheria.

Dr. Franklin Staples, of Winona, Minn., after an extended correspondence with physicians in most of the counties of his State, has published a report on diphtheria, in which he classes the disease as contagious and infectious, and demonstrates that it is on the increase, a fact due, in his opinion, to failure on the part of physicians in recognizing its self-propagating properties; to want of systematic nursing of patients suffering with the disease; to incomplete disinfection of premises attacked; and last, but not least, to the frequent intercourse of convalescents with healthy persons. He maintains that strict regulations, rigidly enforced, are the only means adequate to cut short its career, and since individual power is unable to cope with it, urges that every city and town should devise efficient sanitary laws, and let them be enforced by intelligent medical officers, who shall also make it their duty to instruct the people in sanitary rules. To guard against the contamination, he believes that filth, whether from dirty rooms, soiled clothing, defective drains and cesspools, ill ventilated rooms, poisonous inodorous gases, etc., should be regarded as conditions which invite the disease; that the apartment set apart for the patient should be divested of all furniture, carpets, curtains and fabrics of any kind not absolutely required; that discharges from the nose, mouth, and bowels should be carefully collected and destroyed, and that all personal clothing, bed linen, etc., should be thoroughly disinfected before being sent to the general wash. In case of death, all clothing and unimportant articles should be burnt, the body should be immediately disinfected and put into its coffin, which should be kept permanently closed. There should be no public funeral. He prefers disinfection by chlorine gas, which is to be set free in the room. Ventilation for a number of hours should then be insisted upon. Precautions falling short of these Dr. Staples considers to be useless in preventing the spread of the infection—*Report on Diphtheria to the Minnesota Board of Health, 1881.*

Sound.

Sound as a substance is nothing; that is, you cannot see it. Sound is produced or generated by causing some substance to vibrate in the air either by shock or similar action. Without air no sound can possibly be produced. Air is as necessary to sound as it is to combustion. If we drop a solid substance into water we find that the water yields at the point at which it was first subjected to a shock. This swelling we call a wave. When the first wave has made way for the substance creating the disturbance, it causes the water next to it to form another wave, not so great as the one first made, and so on until the power expends its strength when at last all action ceases. If the body of water is not sufficiently large to allow of this succession of swells to exhaust themselves it is reflected back to the original point. If the water be confined in a square vessel the waves in meeting the sides are broken, resulting in confusion. As it is with water so it is with air. No matter how rapid air may move, unless it comes in contact with some substance no sound is produced.

In a clear, dry air sound can be heard a greater distance than when the air is damp or otherwise defective in its sound-bearing capacity.

Sound is due very materially to the atmosphere in which it is generated, and where the effects are to be heard. It has been an old theory, that if we take a sea-shell and hold it to our ears, we will hear the swell of its native ocean. It is true that if we hold the shell as mentioned, we do get the sound like the rushing of air. The same effect may be had by holding an earthen inkstand to the ear. In this case we might naturally suppose the sound emitted to be that of the waves breaking over the clay that was used in making the ink vessel.

In musical instruments the cylindrical form is important. Where this form is not preserved various modifications of it are employed. The violin, for example, is composed of two outer walls. Separating these two pieces, and uniting them in a general whole, is what we call the side walls. Then comes the finger board. Again we have the button at the lower end; then we have the sounding-post placed in the inner side, and immediately under this is placed the bridge, over which the strings are drawn and held in proper position. The outer partition presents a line of swells and sweeps. The strings are adjusted to harmonize. To the bow we apply a resinous substance to produce friction. We draw the bow over the strings, which produces a vibratory sound. If the body of the instrument were made of thicker material, or without sweeps or curves, unpleasant sounds would be the result.

In the piano we produce musical sounds by hammering on wires when in proper tension. This hammering causes them to vibrate, to send off their sound to the sounding board, which is then reflected to the outer air. Another example which it is well to refer to, is the snare drum. We stretch across each head a piece of sheepskin. Across the lower head the snares are placed. An air hole is made in the body. When the upper head is struck, the air in the cylinder hammers against the lower head, causing it in turn to hammer against the snares, while the sound reaches the outer air by means of the hole in the body. When the drum is muffled a dull sound is the result. The xylophone is a good example of the sound-producing capacity of wood. A small hammer striking the pieces of wood, of which the instrument is composed, causes them to vibrate, sending off their wavelets of sound.

To produce sound we require, in connection with air, substances that have density, elasticity and vibratory power. If we suspend a common brick and strike it with any substance, say a piece of iron, a very dull sound is the result. The brick has a certain amount of solidity about it, but no elasticity or vibratory powers, and consequently yields no sound at the moment. If we take a stone of the hardest species we get better results than with a brick, because of its density. Steel has density, elasticity and vibratory powers, and produces sound. If we form the steel into a circle, leaving the ends in contact, we get an increased amount of sound. So long as steel vibrates so long will sound be emitted.

A bell has density, elasticity and vibratory powers, and is capable of containing air in a condensed form. If the bell is formed so as to consist of angles, as, for instance, the cow bell, we get the same confusion of sound as mentioned in describing the action of waves in water, that is, of water placed in a square vessel. If the bell be fractured there is no continuation of the sound, vibration becomes suspended because suspended by reason of the fracture. A barrel, perfectly tight, with the bung inserted, if struck gives a hollow sound much subdued. If the barrel were loosely constructed, the sound would be similar to that of the fractured bell. If we strike a square box, the sound is momentary. Its many angles cause a confusion of the sound waves. It is an old theory that a clear, frosty air allows of a greater amount of sound than a clear, warm air. This is incorrect. No matter where sound is generated, it will ever travel in search of the higher, purer and more expansive atmosphere.—*Blacksmith and Wheelwright.*

THERE are six bonded vessels now lying in the bay which cannot get seamen. They lose about $150 to $200 per day while waiting for crews. Able seamen are very scarce here.

HOW TO INCREASE THE LIGHT OF GAS FLAMES.—Mr. W. Lacelles Scott, lately stated that he had arranged an ordinary fish-tail burner at an angle of from 60° to 45°, and allowed finely divided alkaline earths to percolate through the flame; and he found that without any increased consumption of gas, a fairly marked increase of light resulted. The mean results of several experiments were as follows: With a normal flame of 16.71 candles, the addition of pure lime gave 17.95, of magnesia 17.13, and, curiously enough, of an intimate mixture of lime and magnesia, a larger increase than either separately, namely, 18.23. The same mixture, with the addition of 10% of another earth, gave 18.34. With a specially constructed Argand burner, the flame being conical, the light was raised from 62.4 candles, burning gas alone, to 67.3 with the addition of lime only, and with lime and magnesia to 68.5.

Poultry Tonics.

George Enty, writing for the *Southern Poultry Journal*, says: If we only want something to fire up the system, create and stimulate the *desire* of productiveness, then anything which would have that effect would do; and, of course, the cheapest would be the one to commend. But, unfortunately, this, like whisky, wines, and other spirituous liquors, *is an artificial stimulant*, and does the fowl *no benefit*. No, it will not do. There must be something that *will furnish the hens with the material* for producing eggs, and thus *lessen* the strain on the hens.

Again, it is impracticable, this mixing up of meals and chops with the tonics by the bushel. Aside from the labor involved, the feed itself, if once dampened, will soon mold or sour. If one had several thousands of hens, like Josselyn, of New York, or Hawkins, of Massachusetts, and he could buy the necessary ingredients for his tonics, then, and only then, will it pay to manufacture tonics for our fowls. This, of course, only applies to those who think that they *cannot get a good and useful tonic*. As far as competing with the large establishments engaged in the manufacture of "foods," in price, is concerned, we say right here it cannot be done. With machinery and all proper facilities for crushing, grinding and mixing, they can sell cheaper than the small buyer can buy the material, without counting anything for his labor; and when the food is mixed each day, one is apt to grow careless, and soon the fowls will be without tonic of any kind.

Referring to a poster of the "Imperial Egg Food Co.," we see that it costs but "three cents per week, in the 25 lb kegs, for a dozen fowls." This is only a quarter of a cent per fowl for a week, or twelve cents per year. Now we cannot conceive how anyone could expect anything cheaper than this. Indeed we have found that very good results can be obtained, when even this small quantity is lessened. We have kept hens and pullets looking "business like" all winter, and only prevented from laying by their wretchedly cold quarters, while some fowls kept by a friend in a splendid house showed no signs of laying. The only difference in our treatment of our hens was, that we used Imperial Egg Food, while he did not.

Orange Culture in California.

With Appendix on Grape Culture.

Table of Contents.

1. Preface and Introductory Remarks on Orange Raising; 2. Selection of Seed, and How to Raise the Plants; 3. Selection of a Site for a Nursery; 4. Transplanting to the Nursery; 5. Selection of Site for an Orange Orchard; 6. Selection and Purchase of Trees; 7. Plan of an Orchard; 8. Transplanting to Orchard; 9. Cultivation; 10. Irrigation; 11. Crops Admissible in Young Orchards; 12. Fertilizing; 13. Pruning an Orange Orchard; 14. Diseases of Orange Trees; 15. Destructive Insects, and Remedies; 16. Enemies—Protection, Prevention and Cure; 17. Age at which an Orange Orchard will Begin to Fruit; 18. Profits of Orange Growing—Ten Acres Enough; 19. Picking and Packing; 20. Cost of Planting an Orange Orchard in California and Conducting it to a Paying Basis; 21. Our Markets, Present and Prospective.—Over Production Considered; 22. Where Can Orange Trees be Successfully Grown in this State? 23. Varieties; 24. Best Varieties to Plant; 25. Seedling Versus Budded Trees; 26. How to Bud; 27. Grafting; 28. Propagating by Cuttings and Layers; 29. Stocks for Budding and Grafting; 30. Lemon Culture; 31. Limes; 32. Citrons; 33. Orange Wine and Brandy; 34. Rules for Ascertaining the Average Number of Trees or Plants that Can be Set on an Acre; 35. Recipes; 36. Appendix on Grape Culture, by L. J. Rose.

Preface of the Author.

A residence of 28 years in this State, the last 16 of which have been devoted exclusively and uninterruptedly to semi-tropical orcharding and nursery business, enables me to write from a practical standpoint possessed by few. A lover by nature of the beautiful in horticulture, I have applied myself assiduously to assist in developing the latent interests of the business of citrus culture, by endeavoring to procure the best of the different species, by propagating and experimenting on a large scale, and carefully noting the different varieties. The field has been and still is wide and ample. However much I may have learned, I feel that we are only on the threshold of learning what are the most successful conditions for the profitable citrus culture of the future.

I shall endeavor to present the subject in as brief a form as possible consistent with the many ramifications of the business, using no technical phrases, the object being to adapt the work to the understanding of all that may at any time be engaged in the business.

It is important that all that venture in this business start right. This book is written to enable them to avoid many of the sunken rocks on which hundreds have been wrecked. I do not purpose to present myself vainly and egotistically to the public as one who has learned all there is to know about citrus culture, but as one who is willing to give his long and practical experience conscientiously.

I believe there is yet much to be learned on this subject, and that this may the more speedily be done, I record my views, believing that by comparing them with the experience of others the object may be sooner attained.

Hopeful that this work will fill a niche unoccupied at present, and that it will result very beneficially to this advancing branch of horticulture, I humbly dedicate it to all lovers of the beautiful in nature, and especially to all lovers of this health-giving, profitable industry.

THE AUTHOR.

An Important Work.

This book is written by Thos. A. Garey, of Los Angeles, after many years of practical experience and observation in orange culture. The subject is an interesting as well as important one, containing information which all reading Californians should possess, whether engaged in orange or grape culture or not.

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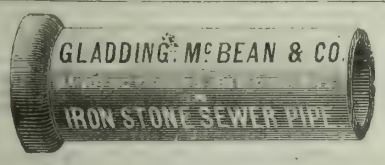

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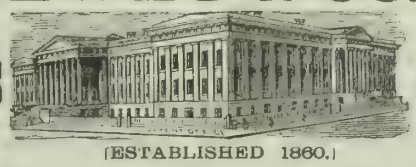
Scientific Press  **Patent Agency.**

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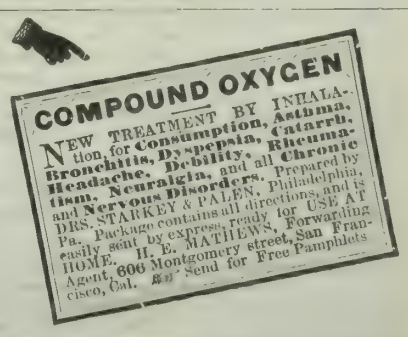

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PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co.'s SCIENTIFIC PRESS PATENT AGENCY, No. 252 Market St., S. F.

FOR THE WEEK ENDING APRIL 11, 1882.

256,271—TRACE LOCK—Jas. A. Bassett, Windsor, Cal.
256,424—ADVERTISING DEVICE FOR STREET CARS—R. F. Bridewell, S. F.
256,283—AMALGAMATOR—Wm. T. Browne, Stockton, Cal.
256,284—VEHICLE SPRING—Geo. S. Buckland, Tulare, Cal.
256,130—ADJUSTABLE STOVE GRATE—De Guerre & De Lano, S. F.
256,302—CAR COUPLING—Butte City, Montana.
256,304—HYDRO CARBON BURNER—Evan A. Edwards, Los Angeles, Cal.
256,354—SAFETY ATTACHMENT FOR ELEVATORS—Chas. B. Morgan, Oakland, Cal.
256,366—AIR SHIP—Carl W. Peterson, S. F.
Reissue 10,086—KITCHEN IMPLEMENT—John W. Ross, Santa Clara, Cal.
256,178—ROTARY ENGINE—A. W. Von Schmidt, S. F.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with perfect security and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of special mention:

CUSHION PROTECTOR FOR BOTTLES.—James M. Thorpe, San Jose. No. 255,900. Dated April 4, 1882. This bottle protector belongs to that class wherein the bottle or vessel is surrounded by a rubber band or cord resting in a groove. Heretofore in this class of protectors, bottles have been made with the groove for containing the rubber cushion in the same relative position. By this construction, when the bottles are packed, the packing rings of contiguous bottles abut against each other, and the two bottles would be separated by the projecting portions of two packing rings, thus occupying much more space than is necessary. The object of this invention of Mr. Thorpe's is to overcome this objection, and it consists in a bottle provided with a series of grooves or holding devices near its upper end, and a series of the same near its lower end, in combination with adjustable elastic packing rings, whereby the inventor is enabled to readily place the packing rings on contiguous bottles at varying elevations, so that they will not abut against each other.

HAY STACKING APPARATUS.—Gamos Richardson, San Jose, Santa Clara county. No. 255,887. Dated April 4, 1882. This invention relates to an improved apparatus for stacking hay in the field, and it consists of a framework which is set up on one edge, so as to stand upright, and it is provided with suitable grips or braces to hold it up, and also with pulleys, over which two or more ropes lead, to attach to the nettings on which the hay is placed, passing thence to guide pulleys, and to the horses or power by which they are operated. In combination with the frames, nettings and ropes, the inventor employs ways or guides, over which the nettings, with their load, may be elevated to the top of the stack without rolling devices or any other means for preventing contact, and without a direct lift.

HYDROCARBON BURNER.—Evan A. Edwards, Los Angeles. No. 256,304. Dated April 11, 1882. This liquid hydrocarbon burner consists of a box or casing having within it a vertical longitudinal partition or diaphragm extending from the base to within a short distance of the top, dividing the box into two compartments, opening into each other over the top of the diaphragm, said compartments having separate entrances and a common exit or exits through a pipe or pipes leading from the upper part of the compartments and opening out under the casing or box. This burner is specially adapted for use in kitchen stoves or ranges. The heat from the device will carry on all necessary cooking.

VEHICLE SPRINGS.—George G. Buckland, Tulare, Tulare county. This invention relates to a new and useful spring and shackle for vehicles; and it consists in forming one end of the spring into a proper journal or bearing, wherein the shackle which is bolted or secured to the body or frame, may have a certain play to accommodate the rigid frame or body to the movement of the spring.

BUCKLE.—Alexander Cadwell, Petaluma. No. 255,838, Dated April 4, 1882. This invention relates to a new and useful buckle, of the kind having tongues, and commonly known as "tongue buckles," and it consists in curving inwardly the point of the tongue, and providing a hole or socket in the end of the buckle frame into which the inturned or curved head of the tongue is adapted to fit, after passing through the hole in the strap. The object of this construction is to afford greater security in buckling. The tongue, being thus held in the hole of the buckle, will prevent the strap from slipping off of it.

VINEYARD PLOW.—A. C. Taylor, S. F. No. 255,898. Dated April 4, 1882. The improvement which this patent covers is specially applicable to what are known as "vineyard plows." The improvement consists in the construction of a plow having the lower portion of the share and mold board made stationary, while the upper portion is hinged in front, so that it may swing outward, and stand in the same curve with the front of the mold board, or it may swing back beneath the beam and not turn a furrow, but will allow the earth, which has been lifted by the plow, to fall back into the furrow again. The beam swings upon a vertical pivot, so as to throw the plow to or from the land in the ordinary manner.

TRACE LOCK.—J. A. Bassett, Windsor, Sonoma Co. No. 256,271. Dated April 11, 1882. This invention is an appliance which the inventor terms a "trace lock," and which is intended to secure the loose end of a trace or tug of harness after the trace has been passed through the buckle. The lock takes the place of loops through which the loose end is usually tucked, and is adjustable, so as to be adapted to wide or narrow traces.

REMOVAL OF GREASE SPOTS.—Whenever oil of turpentine, benzole or ether is used to remove grease spots on cloth, the application should be made on the reverse side of the cloth, by moistening it with the solvent in a circle surrounding the spot, so as to approach it gradually, having blotting-paper in contact with the spot of grease, to absorb the fat immediately; otherwise the solvent will have the effect of spreading the grease over a larger surface instead of driving it out of the cloth. In the application of a hot iron to one side and blotting-paper to the other, the heat will drive the grease out of the cloth into the paper, because the fat has a tendency to move from the hotter parts toward the cooler.

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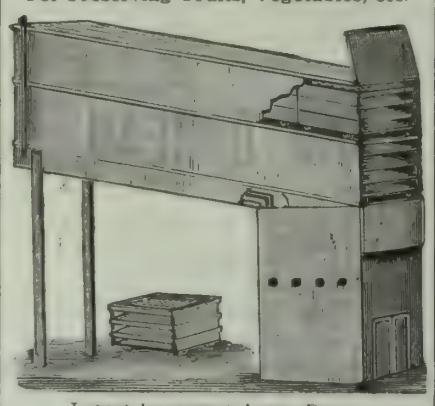

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G. G. WICKSON,
General Pacific Coast Agt.
No. 319 Market St.,
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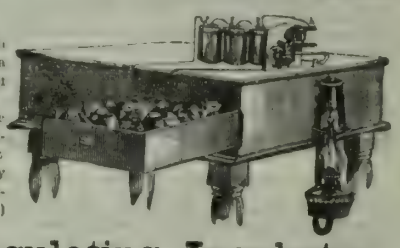
California.

MONEY IN CHICKENS AND EGGS.

—The— Eclipse Self Regulating Incubators are now in actual use in most parts of this State, and giving general satisfaction. They are a success, and being such are invaluable to all who attempt to raise chickens; are easy to manage, and cost merely a trifle to keep in operation, and will do much better work than can be done with hens, with a small portion of the labor and risk.

☞ The "ECLIPSE" is the only entirely self-regulating incubator known; is the only one that will bear investigating, so it is the only safe one to purchase. Send stamp for Circular of California Testimonials (not Eastern.)



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HAY! HAY!! HAY!!!

FOR SALE FOR BALEING.

Annealed Wire Five Cents Per Pound,

GOODENOUGH SHOES and NAILS 35 Per Cent. Under Market Rates.

H. LACEY, 321 California St., San Francisco.

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Our Large Warehouse at 31 Market,
Extending 150 ft. back to new repository fronting on Spear street, 140 ft. long, is stocked with

A Full Line of Agricultural Implements.

Of all the Latest and Most Improved Patterns, including
Headers, Reapers, Self Binders and Mowers.

Just Arrived by rail, a Large Shipment of
J. I. Case Threshing Machines and Steam Engines

For Straw or Wood. The new device,
Walrath's Patent Straw-Burner,
Is the best in use. Our new
CALIFORNIA SEPARATORS,
Built expressly for the Pacific Coast, which received general approval and entire satisfaction last year, are on exhibition.

Call early and EXAMINE our line of IMPROVED MACHINERY, or send for ILLUSTRATED CATALOGUE.

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Importers and Dealers in
AGRICULTURAL IMPLEMENTS.
And Sole Agents for J. I. CASE THRESHING MACHINE
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Palmer's Plant and Vine Protector
Will protect Plants and Vines from ALL INSECTS. 1 pound of this powder is enough for an ordinary garden. 4 pounds for an acre of cabbage. Sold by dealers generally at 25c for 1 lb., 50c for 2½ lbs., or sent to any address, pre paid on receipt of 45c for 1 lb., 90c for 2½ lbs.
PALMER PLANT & VINE PROTECTOR CO.,
Sole Proprietors and Manufacturers, Rockford, Ill.

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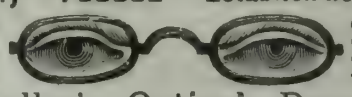
Office: 759 Market St., San Francisco. From 11 A. M. to 3 P. M.

HARBIN HOT SULPHUR SPRINGS,
LAKE COUNTY, CAL.
The Springs are now open for the reception of guests. Stages leave Calistoga daily, on arrival of morning trains from San Francisco and Sacramento. Stage Fare Reduced to $3. RICHARD WILLIAMS, Proprietor.

Only "PEBBLE" Establishment.

1863  1882

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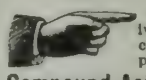

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Compound Astigmatic Lenses Mounted to Order. Two Hours Notice.

Dewey & Co. { 252 Market St. } Patent Agt's

Summer Resorts.

SODA BAY HOTEL,

A NEW AND BEAUTIFUL
SUMMER RESORT.

SODA BAY, on Clear Lake, Lake county, Cal., the favorite lacustrine resort, is justly regarded as combining greater advantages and affording more attractive and interesting natural features than any other watering place in the State. The climate, as a relief from the severe winds of the coast, is invaluable for the health of children and delicate persons—indeed, for all requiring the change demanded annually by the residents of San Francisco. While entirely free from the fog, the wind and the chill of the sea coast, the climate is greatly modified from the heat of the interior by the proximity of the beautiful lake, upon the margin of which, for a distance of two miles the grounds are extended. A splendid grove of live oak, pine and manzanita trees, of great age and gigantic growth, affords the most delightful shade. A beautiful bathing beach offers the choicest facilities for aquatic pastime, far from the danger of the sea surf or chill.

The Great Spring—Indian name, OMAR ACH HAH-BEE, emitting not less than a million gallons daily, of delicious effervescing soda water, is one of the most interesting natural curiosities of California, and the bath in its exhilarating fountain has an electrical effect that is as delightful as it is beautiful. Extraordinary solfataric action all around the shore of the bay, due to the presence of innumerable mineral springs and chemical action upon a vastly extended scale has given the place the name by which it is known—Soda Bay.

Daily excursions are made to Borax Lake, Sulphur Banks and other points of interest. A new trail leads to the summit of Uncle Sam, 4,440 ft. above the sea.

Ample provisions are made for the entertainment of the patrons of this popular resort. The Hotel and the cottages are furnished with comfort and taste. Among the diversions of the place are boating and sailing—yacht and steamer, bowling, billiards, croquet, equestrian exercise, fishing and hunting, and a beautiful pavilion for music and dancing; in short, nothing is lacking for the enjoyment of those who seek rest and recuperation or interesting and healthful recreation beneath the shady oaks and by the ever beautiful lake, in a climate which, for health and for comfort, is acknowledged to be unsurpassed, if, indeed, equaled in the world. Billiards, croquet, ten-pins, and baths, free.

To reach Soda Bay from San Francisco, go by train to Calistoga or Cloverdale, thence by stage to Kelseyville, at which place a carriage from the hotel will meet passengers. Through time, 11 hours. For further information address,

A. K. GREGG, Uncle Sam P. O., Lake Co., Cal.

SIEGLER SPRINGS HOTEL,

LAKE COUNTY, CALIFORNIA.
JOHN SPAULDING, - - - - Proprietor.

GOOD HUNTING AND FISHING

Right at hand for the accommodation of invalids. Baths of any desired temperature.

The SIEGLER SPRINGS STAGE will connect with the stage from CALISTOGA at LOWER LAKE on MONDAY, WEDNESDAY and FRIDAY, at GLENBROOK on TUESDAY, THURSDAY and SATURDAY. Time from San Francisco, TWELVE HOURS. These Springs have no equal in the State for speedily and permanently curing Rheumatism, Gout, Stiff Joints, Dropsy, Scrofula, Skin Diseases, Gravel, Diabetes, Female Diseases, Dyspepsia, Catarrh, Chronic Dysentery, Chills and Fever, Lead Poisoning, Painters' Colic, Constipation of the Bowels, and all diseases of the Stomach and Liver, Bright's Disease of the Kidneys and impurities of the Blood. The Hotel will be kept open summer and winter, the water proving equally efficacious the year round. Important improvements have lately been added, including new

Bath House and a Fine Swimming Bath.

Address all communications to "SIEGLER SPRINGS," Lake county, Cal. W. T. GARRATT, Manager.

Pacific Congress SPRINGS.

This Celebrated Resort for PLEASURE and HEALTH will be opened for the reception of guests

On and after April 15th.

Stage connections made at LOS GATOS with MORNING and AFTERNOON trains of the Narrow-gauge Railroad.

THROUGH TICKETS

Can be purchased at FERRY LANDING, foot of Market street, San Francisco, PRICE, $2.75

ROOMS CAN BE SECURED

And arrangements made at any time by addressing

LEWIS A. SAGE,
Saratoga, Cal. Proprietor

California Fruit at the East.

The following was read at the meeting of the California State Horticultural Society, held in this city April 28th:

Mr. E. J. Wickson, Secretary Horticultural Society:—At your request I will give you some of the observations made while in the States east of the Rocky mountains during my trip last fall and winter, in reference to the trade in green, canned and dried fruits, the chances our orchardists have to compete for that trade, the varieties of fruit in which they have a monopoly, and the probabilities of our productions so increasing as to overstock the market and cause fruit raising to be unprofitable, as many fear it will be.

The consumption of our fruit, green, canned and dried, has increased very rapidly in the last few years, and the railroad extensions and connections being made in all directions, are increasing the demand, until the amount required would appear to be unlimited. But while it affords wider fields for our fruit, it also gives other sections opportunities to come in competition with us on territory we should supply if we had correspondingly reasonable freights.

While the orange from the Gulf States can be laid down in the West and North at 25 to 50 cents per box, and for $50 to $75 per car, any kind of fruit can be transported from the East to the West, or from North to South, traversing a country occupied by millions of consumers; it costs us several hundred dollars per car to reach a sparsely settled territory. I am satisfied there will be radical changes in our favor in the way of freights in the near future, long before the orchards now being planted come into bearing. In a conversation with Vice-President C. P. Huntington, while in New York, he remarked: "They must give us better rates. They must give us rates that would enable the California farmers to get their produce to market." And when we see what the railroad has done in the way of shipping grain, we have no doubt that the fruit interest, which is growing into so much importance, will receive attention from the railroad company, for they are business men; and wanting business for their roads, will give a rate that will enable us to supply the rich and well-to-do people with our green and canned fruits, and the poorer classes with our dried fruits, and occasionally a taste of our green, in the way of a luxury.

As it is now, when it is considered necessary to get from $3 to $4 per box of 40 lbs., in order to pay freight and cover risk of transportation, only the rich can afford to buy our green fruit, and they only use it as a luxury. The proprietor of a first-class hotel, in the way of bragging how well they lived, said they had California Tokay grapes for dinner Sundays. Suppose that hotel, feeding from 500 to 800 people daily, and hundreds of other hotels, were to give their guests Tokays seven times a week in the place of once, would we fear that variety being overstocked?

I would here say that the Tokay is the popular grape East. They have the black grape of different varieties and the Malaga to compete, in color at least, with our Verdels and Muscats, but they have no Tokays, nor anything to compete with them in color and showy appearance, so, in the Tokay, California raisers have a monopoly.

Our pears are popular, and the quantity that would be consumed of Bartletts, Winter Nelis, and a few late varieties would be immense, if prices of transportation placed them in reach of the masses. The high prices charged for the Bartletts cause the hawkers on the street and the boys on the cars to substitute such as Vicars, Presidents, and other inferior eating pears, and call them California Bartletts. Parties not familiar with the varieties are often imposed upon, and they are not favorably impressed with our Bartletts. I heard a number of criticisms on our Bartletts caused in this way. Our pears, on the whole, are popular, and with some reductions in freight, the amount consumed would be very large.

There is little else at present in the green fruit line that can be shipped East to profit. A limited amount of plums and some peaches can be shipped. The former, not being a popular table fruit, will not stand the price to enter into general consumption; and the risk of getting the latter through in order prevents any considerable amount being shipped.

For the sale of peaches, plums, apricots, nectarines, cherries and blackberries, we have the local consumption, canneries and evaporators, to depend on; for our currants, gooseberries and strawberries, we will have to depend on our local market and canneries; for the sale of our apples we look to the local demand and drying; for our grapes we have the Eastern trade, the canneries, the local trade, the drying into raisins and making into wine; for our plums we have the Eastern trade, canning and drying.

Study the Marketing.

With these facts in view, parties planting orchards should study the chances to dispose of their crop. An orchard in a remote section of the State, that would pay if the fruit was adapted to drying, would not pay if the fruit was adapted to shipping or canning; while another might pay if convenient to market, when it would not pay if so far that the fruit would not reach the market in order, no matter how cheap the transportation.

Our canned fruits are popular East and wanted to an extent it is scarely possible to estimate. But there is a limit to the price, and it is a short-sighted policy for our producers to demand a price which prevents the canners from making a fair return for their outlay of capital, risk and time. I have heard orchardists say it made no difference how much the canners paid, they could sell their goods that much higher. They appear to overlook the fact that the people East and in Europe had something to eat that took the place of canned goods, long before we made them in California, and when our goods get too high they must resort to the same articles again. And when we call their attention to this fact they say they have no apricots and nectarines, but when these goods get disproportionately high they use something else, so the consumption of them ceases.

The prices paid by our canners in most instances last year were all they could afford, and doubtless some will contend they were too high, as they say they made no money. But I think that was owing to the manner of selling, more than any other cause, for by making contracts ahead at low prices caused California fruit to be its own competitor, rather than a competitor of fruit from other sections of the country.

When offering to sell canned goods, the buyers never quoted the prices at which they could get goods put up out of California, but what they could get Mr. So and-So's brand for, put up in California.

The Dried Fruit Interest.

It was different with the raisin, prune, and some kinds of dried fruits; the raisin has the Malaga and Valencia to compete with; the prune, the French and the Turkish. The peach must compete with that from Michigan and the Middle and Southern States, the apple with that from the Western and Northern States.

Our canned goods are so well known, and the trade so extensive, and its importance so well understood by all, I will leave that subject and refer to a branch of the fruit trade that has attracted comparatively little attention, but one, the importance of which will be felt when the available orchard lands of the State are utilized. I refer to the dried fruit interest.

With cheapened transportation, the shipments beyond our borders of green fruit will be immense. Already our canned goods trade is very large, and no doubt will increase rapidly with the facilities of railroad extensions and reduced freights. But at the best, our green and canned fruits can go into use only among the rich and well-to-do, while our dried fruits can be prepared and sold so that the masses can buy—the poor man with a large family can afford to buy them.

Consumption of Fruit.

And before we get frightened and stop planting trees, let us take a look at the situation. We have 49,000,000 people in our own country east of us, and a very large per cent. are consumers, perhaps one-fourth are able to buy our green and canned fruits for every-day consumption, one-fourth can buy the canned, and sometimes the green as a luxury; leaving one-half, or say 25,000,000, that could buy our dried as the more wealthy do our green and canned; some could use them every day, while others could afford to use them only occasionally.

The half who buy our green and canned fruit would use much of our dried if it were prepared by an evaporator. If this reasoning be correct, we would have a chance at 49,000,000 for our dried fruit, against half that number for our green and canned, for certainly the well-to-do would take liberally of our prunes, raisins and evaporated apricots, nectarines, plums, pears and peeled peaches.

Sun-dried and Evaporated.

The most important item for the orchardists to consider is the best method of curing and packing their surplus fruit, what they cannot sell to an advantage green. I claim it is decidedly to their interest to use an evaporator. Evaporated is the term used East for fruit prepared by the Alden and Plummer driers, and they are the most popular, as the evaporation from the green fruit is feeding the dryer fruit until it is fully cured, leaving it very rich and attractive.

They should prepare their fruit by evaporation: 1. Because it will sell for from 25% to 75% more than the sun-dried. 2. Not being liable to have the germ of life in it left by the miller, it can be kept over if the market is not satisfactory. 3. It will go to a class of consumers that would not buy the sun-dried, causing a larger amount to be consumed than otherwise would be. 4. We claim that the same amount of green fruit dried in a Plummer dryer or evaporator will make enough more pounds of cured fruit over that sun-dried to pay for the wood at the rate of $6 per cord.

Now let us compare the selling prices of the Plummer evaporated fruits with the sun-dried. Evaporated unpeeled peaches, 13 cents per lb.; the same sun-dried, 9 cents per lb.; peeled peaches evaporated, 30 cents; sun-dried, 20 cents; apricots, evaporated, 27½ cents; sun-dried, 18 cents; evaporated nectarines, 27½ cents; sun-dried, 15 cents; evaporated apples, 11 cents; sun-dried, 7¼ cents; evaporated pears, 12½ cents; sun-dried, 8½ cents; plums evaporated, 17 cents; sun-dried, 13 cents; and at this difference in prices there is a much larger per cent. of the evaporated selling than of the sun-dried. These facts and figures should convince any fruit raiser that it is to his interest to cure his fruit by evaporation.

Taking it for granted that all thrifty farmers will adopt the evaporator, we will give some of our observations in reference to the mode of

Preparing and Boxing

The same. Apples should be peeled and cut in rings, and if they are ripe, or a variety that does not dry white, a small amount of sulphur can be used to advantage. When ready for packing, lay a few rows in the bottom of the box, and when well pressed in, mark the bottom in packing as the one to open. This is known as facing. There is great care necessary in drying and packing apples to make them compete with the evaporated of western New York, where they put up a large quantity; and they were selling readily in St. Louis, in September last, at 12½ cents, by the car load.

The prices East for evaporated peeled peaches offer great inducements for our fruit men to put up a large per cent. in that way. The Plummer evaporated peeled peaches have been selling in St. Louis, Chicago and Philadelphia for 33 cents, and they are now worth 35 cents there. We have offers at 30 cents, but there are none to be had to fill the order.

For our apricots and nectarines, there is a good demand, not only throughout the West, but in the Eastern and Northern cities, and in Europe. In these we have a monopoly, and with care in putting them up they are likely to bring good prices. There are none to be had in our market now to fill orders from the East at 27½ cts. They can be made very attractive in packing by putting one row with the skin side down and the next row with the inside down; after packing the bottom of the box in this manner, fill the box and press them so tight that when the box is opened on what was the bottom when packed, they will not break down but show the rows distinctly. I am aware that many of our fruit men will regard this as useless or a waste of time, as many did when we recommended the packing of oranges with the flat side of the box down, and the blossom end of the orange to the bottom and in rows, so when the box was opened they showed a smooth face of uniform size. But the successful sales of those who adopted that plan have caused many others to do likewise. When we see the pains taken in packing by successful fruit raisers, we feel justified in urging all possible care and pains by all; and more especially now, when much of our fruit has to go East and come in competition, not only with that put up by successful packers there, but with French goods; and the French are noted for the pains they take in preparing their goods for market.

For our plums there is a good demand, and there are varieties that can be dried with the pits in, by an evaporator, that are more sought after than the prune, for they want the acid fruit East. Californians, who eat so much fruit and vegetables, do not understand this, except it be an old one, who rounded the Horn, or came the Plains across, and was fed on salt meats and coffee without milk. When he arrived in California his craving was for acid—pickles or vinegar; and a merchant in early times had as well have set up a store without flour as without pickles. Our Eastern brethren are less favored with fruits and vegetables than we are; so they want acid fruits—plums, nectarines and apricots.

The preparation of our pears is a matter of much interest. In the place of cutting them in rings, as apples, they should be peeled and cut into eighths, and dried before they get too ripe, so they will be white, for they are used by putting enough sugar to make a light syrup, and dished out as a dessert, in the place of canned fruit.

The raisin and prune, two great staples, while they have no competition from the orchardists of the Eastern States, have formidable rivals from abroad, and we will treat them in a separate article.

In reference to boxing, we would recommend the lightest box possible to hold the desired amount of fruit, for in shipping at two cents per pound for freight, the average is now one-half cent per pound for the box, which on low-priced fruit is a heavy per cent. We would recommend all boxes to be of the same size except as to depth; and taking 60 lbs. as the largest make the others into halves and quarters, 30 lbs. and 15 lbs., and where fruit is heavier or lighter than the average, mark the weight on the box. It is much less trouble to take those weights than to load a wagon or car, or pile the same to advantage in a store where the boxes are of unequal size.

I, for one, have no fears of our overstocking the market with fruit so that fruit raising will not be profitable, if we grow good fruit and use ordinary judgment in preparing it for market, first for table use, next for canning, and last, but not least, for drying.

I do not believe if all the available lands for orchards in this State were in bearing now, that we could get a remunerative price for our fruit at the present tariff of freights; but freights have been materially lessened in the past few years, and no doubt will be more so in the near future. The field is widening and the demand increasing for our fruits, and at lower prices than are now, or have been, prevailing for good fruit for the past few years. There is more profit in an orchard than any other style of farming.

J. M. HIXSON.

San Francisco.

THE hotel and all the better residences at the famous Rugby colony in Tennessee are deserted, and only a dozen persons remain in the place.

A New Educational Firm.

Dr. C. S. Haley, of this city, who for a quarter of a century has been engaged in his profession, has taken a new departure, having relinquished the practice of medicine and associated himself as one of the proprietors of that well-known educational institution, Heald's Business College. The Doctor has been long and favorably known in this community, which will doubtless insure him abundant success in his new role.

We feel that his extensive acquaintance and great enterprise will likely prove a valuable acquisition to this already praiseworthy institution. Dr. Haley was for six years in his early manhood, a teacher in public schools, and at one time Supt. of Public Instruction in Middlesex Co., N. J.

Messrs. Heald & Woodbury have, for nearly a score of years, been at the head of Commercial Colleges, and it is safe to say that this trio will maintain their college in the front rank of schools for business training in the nation.

MONEY IN BUYING A BALING PRESS. At this season of the year farmers' boys and young men generally, are looking for something which they can buy for a small amount of money, and which will bring a very large return. Three men who can raise $450 can purchase a Price Hay Press, and with a team of horses they are all ready for work. They can bale from 15 to 20 tons of Hay per day, and users of the Price Presses have baled as high as 26 tons per day, but the average should be not less than 18 tons. Baling is paid for by the ton at from $1 to $2 per ton, according to the locality. The Hay baled with the Price Press brings the highest price in any market. Baling rope costs 11c to 13c per lb. If the hay is to be shipped long distances, it is best to put it up in small bales, and for this purpose the Dederick Perpetual Presses are recommended as the best. They cost $450 for the cheapest, and $800 for one to run by steam power. We know of no investment which pays as large profits as pressing hay for market. The cost of getting ready is but a trifle. Many young men in this State have $450 which they could use profitably in purchasing a press, and earn from $1,600 to $1,800 in two or three months. The above presses are advertised in our columns, by Jackson & Truman, of San Francisco.

Garey's Orange Culture.

* * * Mr. Garey's experience in orange culture in all its branches, his enthusiasm on the subject, and his fine judgment and natural adaptability, make him one of the most thorough teachers that those who are embarked in the industry could have. Besides, Mr. Garey is master of a very clear and pleasant diction, and handles his pen with a facility that gives his writings flow and attractiveness. The volume should have a wide circulation, and do good financially to its author as well as to orange-growers. We need not say that Mr. Rose's contribution in the appendix to the literature of the vineyard, will be read with interest and profit by all who wish light on a subject of the greatest importance to this section of the State.—*Los Angeles Daily Express.*

Price, postpaid, from PACIFIC RURAL PRESS office, $1.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

Volunteer Testimonials from Those Who Have Used Booth's Exterminator.

FMMET, SAN BENITO CO., CAL., Nov. 23, 1880

A. R. BOOTH:—I gave your Squirrel Poison a fair trial, and gave some to my neighbors. We find it as good as recommended, and are satisfied it is the best we have ever used. There will be no trouble in selling it in this county. HUGH MATTHEWS.

GUADALUPE, SANTA BARBARA CO., CAL., Feb. 2, 1881.

A. R. BOOTH:—What I have disposed of of your poison has given perfect satisfaction. I enclose check for amount of bill. JOHN DUNBAR.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

SAMPLE COPIES.—Occasionally we send copies of this paper to persons who we believe would be benefited by subscribing for it, or willing to assist us in extending its circulation. We call the attention of such to our prospectus, terms of subscription, etc., and request that they circulate the copy sent.

HOW TO STOP THIS PAPER.—It is not a herculean task to stop this paper. Notify the publishers by *letter*. If it comes beyond the time desired, you can depend upon it we do not know that the subscriber wants it stopped. So be sure and send us notice by *letter*.

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AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDSOUT & Co., 10 Barclay St., N. Y

ANNUAL STATISTICIAN OF 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 502 Taylor St. Price, $4.

A TURNED LEAF will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

AMERICAN BARB WIRE

FENCING.

GALVANIZED, PAINTED OR JAPANNED.

The Handsomest, Stiffest, and Most Durable. No Rust. No Decay. Secure Against Fire, Flood and Wind.

IT IS THE ONLY BARB WIRE that will prevent small animals, such as rabbits, hares, pigs, dogs, cats, etc., from passing through, under or over it, the barbs are so near each other.

The Barbs being triangular-shaped, like the teeth of a saw, and close together, there is no *cruelty to animals*, as they cannot pierce the hide; they only prick, which is all that is ever necessary as *no animal will go near a Barb Fence twice.*

AS THE WIRE IS NOT BENT OR TWISTED, its tensile strength is much greater than the Wire in all other Barb Wire Fences, as they are all made of twisted or bent Wire.

HEAT AND COLD CANNOT AFFECT THE AMERICAN BARB FENCE, as it can be allowed to sag when put up, enough to cover contraction and expansion, *because it is a continuous Barb, and cannot slip through the staples one inch.* Each panel of Fence takes care of itself.

The Barbs cannot be displaced or rubbed off, and are not pounded on and indented into the wire to hold them in place, as in other Barb Wire, thereby decreasing the strength of the Wire The Barbs are short, and broad at the base, where strength is required.

THE PAINTED WEIGHS A POUND TO THE ROD, so that the purchaser knows exactly how much fencing he is getting. Galvanized weighs slightly more.

☞ SEND FOR SAMPLES AND PRICES. ☜

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110, 112, 114 and 116 Battery St., San Francisco, Sole Agents for the Pacific Coast.

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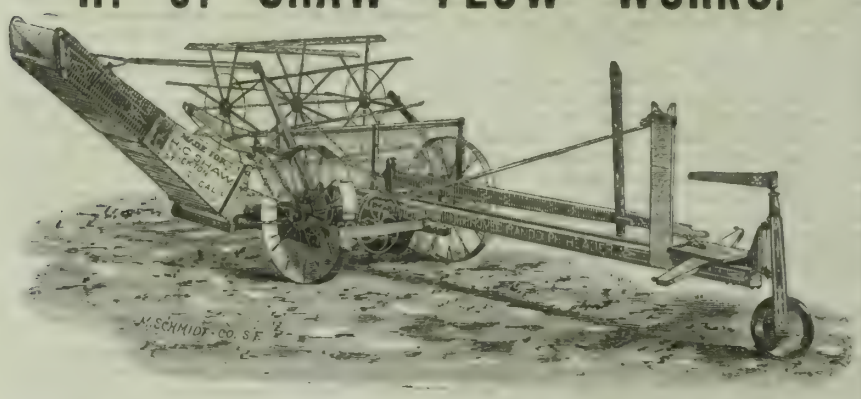

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LIGHTEST DRAFT!! BEST ELEVATION!!!

Three Hundred Sold in Two Years.

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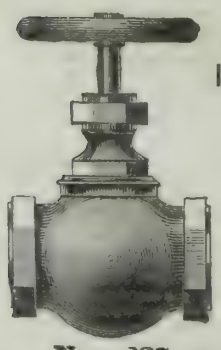

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Iron Pipe and Fittings,

Lift and Force Pumps,

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For Steam, Water and Gas,

Sheet Zinc, Iron Sinks,

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Nos 327 and 329 Market Street, Cor. Fremont, S. F.

IRRIGATED VINEYARD LANDS.

We now offer our splendid tract of Vine and Fruit Land in small tracts Title, U. S. patent. Don't miss this chance to secure you a home where DROUTH NOR FLOOD can injure you. One mile from the county seat of Fresno County, a flourishing town of 2,380. Abundance of water now running to waste. Come and examine; we will show you we are now offering the best land in this State for fruit culture It lays level. Water brought in front of every man's place. ☞ REMEMBER, WE DON'T DEPEND UPON RAIN. ☜ Send for Circular.

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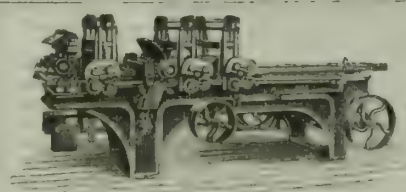

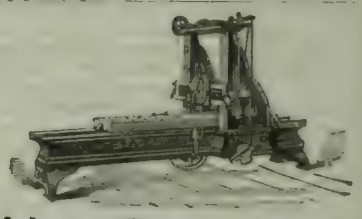

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No. 323 and 325 Market Street, - - - San Francisco, Cal.

Importers and Dealers in every Variety of

WOOD AND IRON WORKING MACHINERY,

Stationary, Portable and Hoisting Engines and Boilers,

STEAM PUMPS, SAWMILLS,

Shingle Mills, Emery Grinders and Emery Wheels, Gardner Governors, Leather and Rubber Belting and Packing, together with a general line of Mining and Mill Supplies.

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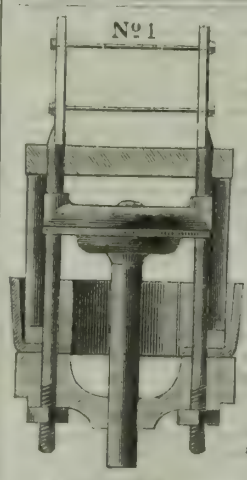

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LIFT AND SUCTION PUMP.

F. A. RUHL, Patentee.

These Pumps are manufactured exclusively by F. A. RUHL, made of the best material and warranted by us to give entire satisfaction. Or

DEEP WELL PUMPS

We manufacture the following sizes: 3, 4, 5, 6 and 7 inches in diameter; and we guarantee them to raise water 200 feet and over

HALF LIFT AND HALF SUCTION PUMPS.

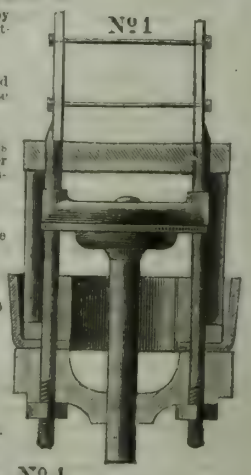
Sizes—3 and 4 inches in diameter. These Pumps are intended to go into narrow wells, and raise water about 50 feet, and they will do the work where a common Douglas Pump fails.

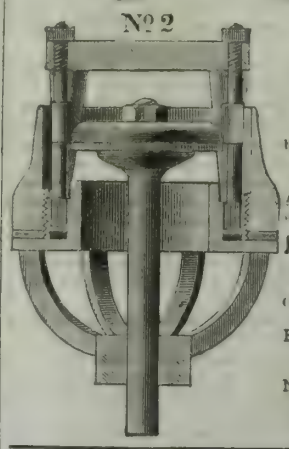
Suction or Irrigation Pumps.

Sizes—3, 4, 5, 6, 7, 8 and 10 in diameter These Pumps are

Adapted for Shallow Wells,

Where water can be had from 15 to 25 feet They are a success to irrigate from 1 to 25 acres of land. They also make the the best





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To raise water to ANY DESIRED HIGHT.

And they are by far the best

Over force Pump,

As there is no packing or priming required.

Jobbing and Roofing

Of every kind done satisfactorily, and at

Reasonable Rates

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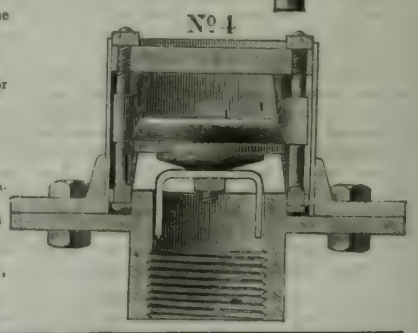

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YOUR NAME on 50 fine Chromos, or 40 Comic transparent cards, 10c. Wise & Co., Clintonville, Ct.

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This is a sure and certain preventative to keep horses from running away. **Price $2.50.** Address W. P. MERRILL, Florin, Sacramento Co., Cal.

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PETER SAXE & SON, Lick House, S. F. Importers and Breeders for past *eleven* years. Berkshires, "Jerseys," "Short Horns," and all varieties of Sheep, and their grades.

COTATE RANCH BREEDING FARM, Page's Station, S. F. & N. P. R. R., Sonoma County. Wilfred Page, Manager. P. O. address, Petaluma, Cal. Short Horn Bulls and Cows, Spanish Merino Bucks and Ewes, for sale at reasonable figures

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HENRY PIERCE, 728 Montgomery Street, S. F. Breeder of Jersey, Guernsey and Ayrshire Cattle.

B. F. FISH, Santa Clara, Cal. Breeder of thoroughbred Jersey Cattle and Black Hawk Comet horses.

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J. B. HOYT, Bird's Landing, Solano Co., Cal. Breeder and Importer of Shropshire Sheep. Rams and Ewes for sale. Also, cross-bred Merino and Shropshire.

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THE PACIFIC COAST THOROUGHBRED POULTRY ASSOCIATION. 1011 Broadway, Oakland, Cal., J. M. Halsted, Manager. All the leading varieties of land and water fowl for sale. Eggs from Plymouth Rocks, Buff and Partridge Cochins, Light and Dark Brahmas, Brown Leghorn, Black Spanish, Houdans, etc., $2 per dozen. Langshans, $3. Bronze Turkeys, $4. Dealers in Incubators, Brooders, Egg Testers, etc. Send stamp for circular.

TOULOUSE GEESE at $15 per pair; $20 per trio; Eggs, $3 per dozen. Bronze Turkeys, $10 per pair; Eggs, $4 per dozen. Address T. D. Morris, Sonoma, Cal., breeder and importer of all kinds of thoroughbred poultry

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JOHN RIDER, Sacramento, Cal. Breeder of Thoroughbred Berkshire Swine. My stock of Hogs are all recorded in the American Berkshire Record.

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J. D. ENAS, Sunnyside, Napa, Cal., Breeds Pure Italian Queen Bees. Comb Foundation.

THE

WASHINGTON IRRIGATED COLONY!

Has been purchased entire (the 4,100 acres unsold), by the well-known vineyardist,

G. G. BRIGGS.

No Colony in the State has now so promising a future, and none offer so great advantages for profitable investment. The extensive improvements of the past year will be more than doubled during the coming summer. In addition to the usual sales, lands are offered for planting in vineyards on shares. Here are grand opportunities for industrious men, as well as for capitalists.

J. W. NORTH, General Agent.

Oleander, Fresno County, California.

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25 Gold, Crystal, Lace, Perfumed & Chromo Cards, name in gold and jet, 10c. Clinton Bros., Clintonville, Co

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Oakland Poultry Yards,

Cor. 17th and Castro Sts., Oakland, Cal.

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Importer and Breeder of all the best known and most profitable varieties of Land and Water Fowls.

Brahmas, Cochins, Houdans, Langshans, Leghorns, Polish Hamburgs, Bronze Turkeys.

And the new fowl, AMERICAN SEBRIGHT or EUREKA.

AGENT FOR THE PACIFIC INCUBATOR,

WHICH IS MADE IN THREE SIZES,

No. 1,	Capacity,	550	Eggs, Price,	$90.
No. 2,	"	250	" "	65.
No. 3,	"	180	" "	45.

Guaranteed to hatch NINETY PER CENT. of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season For further particulars send stamp for illustrated circular to GEO. B. BAYLEY, Box 1771, San Francisco.

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TO SUIT THE TIMES.

In order to make room for young growing stock, I offer for sale 600 fine thoroughbred fowls, none over one year old. White and Brown Leghorns and P. Rocks, $2 each, or $20 per dozen. Eggs from above varieties $1 50 per setting of 13, or two settings for $2 50 Pekin duck eggs, $1 for 9. Langshans, Brahmas, Black Leghorns and Rouen Duck eggs, $3 per setting.

My Birds are raised on large farms, where they have unlimited range, giving them a

VIGOROUS CONSTITUTION,

Which is very desirable in any Breeding Stock.

For further information send 3-cent stamp for new circular and price list, to

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Langshans, Brahmas, Cochins, Leghorns, Houdans, Plymouth Rocks, W. F. Black Spanish, Guinea Fowls. Aylesbury, Rouen and Pekin DUCKS. Bronze and White Holland TURKEYS. Peacocks, Etc. Also, Eggs for Hatching.

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An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

STANDARD POULTRY.

American Sebrights, Langshans, Plymouth Rocks, and Brown Leghorns. Choice birds for sale in pairs, trios, or breeding pens Eggs for hatching in season. Satisfaction guaranteed. Write for prices. Address,

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EXTRACT OF TOBACCO.

Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

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The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

For particulars apply to CHAS. DUISENBERG & CO. Sole Agents, 314 Sacramento St., San Francisco.

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Thoroughbred

Spanish Merino SHEEP.

We offer for sale 400 HEAD OF YOUNG EWES AND RAMS. Prices always reasonable and terms liberal. Quality and condition superior to any flock in this State.

J. H. STROBRIDGE, Haywards, Alameda Co.

E. W. PEET, Agent.

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75 LOVELY FRENCH CHROMO CARDS with name on 10 cents, Chas. Kay, New Haven, Conn.

IMPROVED

EGG FOOD

To Keep Hens Healthy

AND MAKE THEM LAY.

1-lb. Boxes, 40 Cts 3-lb. Boxes, $1.
10-lb. Boxes, $2 50. 25-lb Boxes, $5.

B F. WELLINGTON, Prop'r.

Also, Importer and Dealer in Seeds.

425 Washington St., San Francisco.

SHORT HORNS FOR SALE.

I have for sale at my ranch, near Oroville, Butte county,

12 Young Short Horn Bulls,

From one to two years old. Price from $100 to $200 each.

ALSO

50 Short Horn Cows and Heifers.

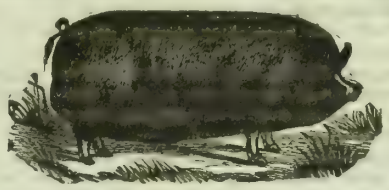
All these cattle are red Durham—all thoroughbred. They are offered at private sale to those wishing to secure good stock.

MOSES WICK.
Oroville, Butte Co., Cal.

Short Horn Bulls For Sale.

The undersigned now have for sale a few choice Thoroughbred and high grade bulls from the best milk strains Our herd consists of "Young Marys," "Daisies," "Imp Britannias," etc. Prices Reasonable.

HYDE & MOORE, Visalia, Cal.



We have for sale at our farm at Mountain View, thoroughbred

BERKSHIRE PIGS

From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880. Pigs from Imported Boar and Sow, $25 each. From Imported Boar and Thoroughbred Sow, $10 to $20. Our Imported Pigs are as nice Pigs as there are in the State. Address JACKSON & TRUMAN, S. F.

Duroc, or Red Hogs.

The undersigned are making a specialty of raising this celebrated breed of hogs for breeding purposes. They are gentle, thrifty and of very rapid growth, and better adapted to this climate than any other breed of hogs. We have hogs of this breed now upon our ranch, 11 months old, weighing over 400 lbs. each N. W. Spaulding, U. S. sub-Treasurer, San Francisco, killed one of these hogs Dec. 14, 1881, at the age of 16 months, that weighed 83 lbs. gross, and 584 lbs. dressed.

On Dec. 22, 1881, Messrs Zimmerman, Strouse & Co., of the Bay City market, S. F., killed one weighing 1018 lbs. net when dressed, 3 years and 3 months old. We are prepared now to ship to any part of this state these pigs 6 to 12 weeks of age. For prices and circulars address,

HINCKLEY & GETCHELL,
Laurelles Ranch, Monterey, Cal.

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My Berkshires are Thoroughbred, and selected with great care from the best herds of imported stock in the United States and Canada, and for individual merit cannot be excelled. My breeding stock are recorded in the "American Berkshire Record," where none but pure bred Hogs are admitted. Pigs sold at reasonable rates. Correspondence solicited.

JOHN RIDER,
18th and A Streets, Sacramento City, Cal.

LITTLE'S SHEEP DIP.

Price Reduced

TO $1.25 PER GALLON.

Twenty gallons of fluid mixed with cold water will make 1,200 gallons Dip.

Apply to FALKNER, BELL & CO., San Francisco

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Of California,

SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,00

In 10,000 Shares of $100 each.

Capital Paid up in Gold Coin, $531,200.

Reserve Fund and Paid up Stock, 21,178.

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LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

GOLD and SILVER deposits received

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TERM DEPOSITS are received and interest allowed as follows: 4% per annum if left for 6 months; 5% per annum if left for 12 months.

BILLS OF EXCHANGE of the Atlantic States bought and sold.

ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1882.

Lands for Sale and to Let.

FARMING LAND

For sale in large or small tracts, on easy terms, in the best parts of the State

McAFEE BROTHERS,
328 Montgomery street, S. F.

Good Crops Every Season Without Irrigation.

Free by mail, specimen number of *"The California Real Estate Exchange and Mart,"* full of reliable information on climate, productions, etc., of

SANTA CRUZ COUNTY.

Address *"Exchange & Mart,"* Santa Cruz, Cal.

SHEEP RANCH FOR SALE.

This ranch of

1,600 ACRES

Is located at

CHRISTINE,

Mendocino County, California.

About 100 acres are in grain, and 100 more are good plow land. The remainder has plenty of green feed having been pastured but little since last September, and in this section the rainfall is always sufficient for grazing land and agricultural purposes

The place is pleasantly situated on the stage road, about 40 miles from the terminus of the railroad.

With House, Orchard, Barn,

And other improvements.

WELL FENCED, WITH GOOD TITLE.

Our Price is $15,000.

Address:

R. STICKNEY,
Little River, Mendocino County, Cal.

Stock Range.

Parties wishing to purchase good stock raising lands, unaffected by severe drouths, will do well to address the undersigned. The lands can be purchased cheap, in lots from 100 to 2,000 acres. It is partly low table and rolling land, partly clear and level. Good for vine and fruit raising. Will raise vegetables and all kinds of grain. Crops certain every year. Near town and a $10,000 public school house. Price, $3 to $5 per acre. Good local market for fruit, vegetables, grain, poultry and dairy produce. Address the proprietor,

EDWARD FRISBIE,
Anderson, Shasta Co., Cal.

The American Driven

WELL WATER SUPPLY SYSTEM

FOR MINING, IRRIGATION, MECHANICAL DOMESTIC & MUNICIPAL PURPOSES

Send for Circulars.

BABCOCK & CO.,

40 Merchants' Exchange San Francisco, Cal.

To Fish Raisers.

I am now ready to sell Carp which were imported by me from Germany in 1872, in lots to suit. Address

J. A. POPPE, Sonoma, Cal.

S. F. Market Report.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, April 26, 1882.

There is rather more interest manifested, and speculation in futures is becoming rather more brisk. As yet, however, but little effect has been noticeable on prices. The latest from abroad is as follows:

LIVERPOOL, April 25. Wheat: California spot lots are slow, at 10s@10s 4d. Cargo lots are 47s for just shipped, 49s for nearly due and 49s@49s 6d for off coast. Cargoes are quiet and easy. Receipts of Wheat the past three days, 288,000 ctls, including 274,000 American.

The Foreign Review.

LONDON, April 25. The *Mark Lane Express*, in its review of the British Grain trade for the past week, says: Red rust has attacked considerable of the acreage in the eastern counties, and causes uneasiness. Fine English Wheats were firm; other kinds were unchanged. Foreign Breadstuffs were quiet, closing weaker, it being difficult to transact business. Flour sold quietly at Monday's improved rate. Maize was in small request; mixed American, on spot, could not be bought under 33s, ex-ship. Barley was in favor of sellers. Oats improved 6d. There was a small business in cargoes. California improved about 6d. There were 13 fresh arrivals; 5 cargoes were sold, 6 withdrawn and 9 remain on sale, including 7 California and 1 Oregon. Sales of English Wheat during the week were 36,134 quarters, at 46s 3d per quarter, against 28,467 quarters, at 44s 9d per quarter for the corresponding week of last year.

Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive according to the latest advices:

In port.	1882.	1881
Engaged, tons	51,101	36,852
Disengaged, tons	25,595	1,197
To arrive, tons	211,277	286,574
Total supply, tons	287,973	324,623
Decrease for 1882, tons		36,650

The iron ship *Dovenby*, 871 tons, is chartered for Wheat to Cork at 63s. The bark *Augustin Edwards*, 1,009 tons, is chartered at 63s to Cork or the Continent, and the ship *G. Van Prinsterer*, 871 tons, is chartered on private terms. The Freight market shared the Wheat market's firmness to some extent yesterday, though holders of tonnage were not able to obtain an advance. The market is quotable at 62s 6d for iron to Cork.

Eastern Wool Markets.

NEW YORK, April 22.—The market for clothing Wools does not change to any important extent. The demand is moderate in volume and cautious in form, with buyers apparently quite careless and indefinite beyond just such parcels as may be required by their immediate consumptive ability and necessity. Some of the supply remains virtually off the market, owing to the extreme rates asked; but the bulk of the accumulation may be considered available, with many holders not caring how soon it is closed out. The business for the week has embraced about the usual run of small and irregular lots, and the feeling at the close was without improvement, though we hear many expressions of fear that manufacturers will suddenly take a notion to buy more freely and influence buoyancy at all primary points. From members of the trade who have lately returned from the West we learn that negotiations thus far have been nominal, and nothing definite has been shown as to the valuations on new clips. From California and Texas accounts show increasing activity and a tendency to stimulate the market a little more rapidly. Some demand has prevailed here for foreign grades, especially Montevideo, but the supply suitable was found to be quite moderate, samples from recent arrivals not having come out sufficiently for fair examination. Sales include 50 bales of Spring California at 27c, 40,000 lbs Fall at 14@14½c, 17,000 lbs scoured at 58c.

BOSTON, April 25.—There is no change in Wool. The demand for fine Ohio and Pennsylvania is fair, at 41@43c for X and XX, and choice selections at higher rates. Wisconsin and Michigan held at 40@41c for XXX, and the market is firm at these prices for good average lots. No. 1 sells for 44@46, and is in moderate demand. Combing and delaine are quiet, at 47@48c. Unwashed and Combing are dull, and remain without improvement. Unwashed sales were moderate, at 25@32c for fine and medium grade, coarse and low, 18@23c. California is quiet, and very little has been done for a few days. Pulled Wool is steady. Choice Eastern and Maine supers at 45@50c; common and good supers, 25@42c. Australian is in fair demand at 45@46c for desirable lots. Carpet Wools are quiet.

PHILADELPHIA, April 25.—Wool is quiet and unchanged.

Eastern Grain and Provision Markets

NEW YORK, April 22.—Wheat appears quieted down for the time being, and prices are easier. Exporters are out of the market. Private advices from Europe are very encouraging. The acreage of Grain in England is estimated to be much larger than last year, while the harvest yield is expected to be greatly increased under the same favorable weather which attended the spring seeding. Accounts from France represent the condition of the Wheat plant and the extent of acreage as exceeding anything of that nature known for 10 years, and predictions are made that the next harvest will be the heaviest France ever produced. It is too early yet to make any estimate of Russian prospects, although the mild winter throughout Europe has given an opportunity for early seeding, which is favorable to the spring Wheat crop. Barley is dull, nominal. Provisions are dull and prices steady.

CHICAGO, April 22.—The Grain in sight April 15th was 22,000,000 bushels, as against 30,000,000 at the same time last year. A year ago to-day Wheat sold at $1.05½; Corn, 44c; Oats, 36c; Pork, $17.50; Lard, $12.20@12.25. Wheat, as compared with that day, shows an advance of 32c; Corn of 31c; Oats of 13c; Pork of 50c; Lard of 2½c. Yesterday's Wheat market was unsettled and irregular, and the scalpers were out in force. The general tone was strong, although reports from the outside favored a weakness. The opening was easy and prices soon dropped 1@1½c, and rallied under speculation ⅞@1c, eased off, and with some fluctuations closed at ½c lower. May ½c higher; June, ½c lower. Yesterday's sales were at $1.30⅝@1.32¼ for May; $1.32⅝ to $1.33⅝ for June; $1.29½@1.30⅝ for July. Call sales were 1,865,000 bushels. Prices ruled lower, closing at 1¼@1c off. Corn was fairly active, but fluctuations were small, and the rates, induced by a variety of causes, were rather weak. On call, sales heavy—3,000,000 bushels; prices panicky, declining ½@2⅜c. The lowest drop was in June delivery, which sold down to 17⅞c, being 3⅜c below the best price for the day. Oats were quiet, with free offerings and limited demand, and a decided drop all around. May sold 10c lower, and closed ½@⅝c lower. Sales, 49½c to 50½c for May; 48⅞@49½ for June; 44@45c for July. The prospects of a steady increase in arrivals was what broke the market, and on call the demoralization continued, prices dropping ⅞@1⅜c, and sales reached 470,000 bushels. Pork was in moderate demand, prices ruling easy and 15@20c lower, closing quiet at the reduction. Sales, $18@18.20 for May, $18.15@18.18 for June, $18.35@18.60 for July. On call there were sales of 25,000 barrels, and prices were steady at 7½c lower. Lard was freely offered, but the demand was not urgent; prices were weak, declining 2½@5c. Sales, $11.22½@11.30 for May, $11.35@11.42½ for June, $11.50@11.55 for July. Call sales, $14.50; prices 2½ to 5c lower. Upward of $6,000,000 worth of property changed hands on call.

New York Dried Fruit Markets.

NEW YORK, April 22.—Foreign Fruits are in light demand, and prices steady, except Prunes, which sold from 6½c; Valencia Raisins are held at 11½@12c.

BAGS—The talk is still higher. But few sales are now being made on 'Change. Bids and offers were: Calcutta, spot, $9.30 bid, $9.50 asked; June, $9.50 asked; July, $9.45 bid, $9.50 asked; buyer July, $9.50 asked; Dundee, buyer June, $9.37½ asked.

BARLEY—Barley is the most lively commodity in market, and rates have improved somewhat under the inquiry. No. 1 Brewing is not dealt in much, as brewers prefer to do their buying on the outside in a quiet way. Feed continues sought after, and Chevalier is neglected. Call sales yesterday of 100 tons No. 1 Feed, spot, $1.60; 100 tons No. 2 do, September, 97½c; 200 tons do, $1.02½; 100 tons do, $1.01, and 200 tons do, October, $1.02½. Bids and offers were: No. 1 Brewing, old, July, $1.75 bid; August, old, $1.80 bid; September, old, $1.85 bid; No. 2 Brewing, August, $1.15 bid; September, $1.12 bid; No. 1 dark Brewing, May, $1.67½ asked; September, $1.05 bid, $1.10 asked; No. 1 Feed, May, $1.60 bid, $1.65 asked; June, $1.50 bid, $1.65 asked; new or old, $141½ asked; July, $1.20 bid, $1.22½ asked; August, $1.05 bid, $1.12½ asked; September, $1.07½ bid, $1.12½ asked; October, $1.05 bid; seller 1882, $1.02½ bid, $1.07½ asked; No. 2 Feed, August, $1.02½ bid, $1.10 asked; September, $1 bid, $1.03¾ asked; October, 99c bid, $1.05 asked; seller 1882, 97½ bid; No. 1 Chevalier, spot, $1.70 asked; May, $1.60 bid, $1.65 asked; No. 3 Chevalier, July, $1.13 bid; August, 90c bid; September, 95c bid, $1.10 asked; October, 95c bid, $1.10 asked.

BEANS—There is no change this week.

CORN—Corn is let alone severely. No sales are reported.

DAIRY PRODUCE—Butter prices hold up well, although there are considerable receipts. Cheese is weak and low, having dropped off to 12½@14½c this week.

EGGS—Eggs are unchanged.

FEED—There is no change in Hay or Ground Feeds.

FRESH MEAT—High prices continue. The only change is an advance of ½c on live Hogs.

FRUIT—Semi-tropicals are unchanged. Some Tahiti Oranges are now in, and going at $10@$20 ⅌ 1,000. Strawberries are still scarce, and sell at 20@25c for small, 40@50c for large baskets.

HOPS—Hops are inactive and unchanged.

OATS—Oats are in demand and holders firm. On call Tuesday sales were 100 tons No. 1, September, $1.40, and 100 tons No. 2, September, $1.32½. Bids and offers were: Extra Choice, spot, $2 bid; May, $1.90 bid; July, $1.60 bid; August, $1.50 bid; September, $1.50 bid; October, $1.45; No. 1, spot, $1.85 bid; April, $1.90 bid, $1.95 asked; July, $1.52½ bid, $1.55 asked; August, $1.45 bid; October, $1.35 bid; No. 2, October, $1.31½ bid, $1.32½ asked.

ONIONS—Nothing but poor to average stock is in at present, and they sell as well as choice did last week.

POTATOES—Supplies are now coming largely from Oregon, as the locals are well disposed of. The ruling price for good Old Potatoes is $1.75@2; New Potatoes, 3@4c per lb.

PROVISIONS—There is sign of an improvement, and prices have shaded upward a little.

POULTRY AND GAME—There has been a slight fluctuation in Fowls, but no material change to the market.

VEGETABLES—Asparagus has become scarcer and has advanced. Green Peas and Rhubarb are much cheaper.

WHEAT—Wheat is gaining a trifle. On call sales were made of 100 tons of No. 1 White, April, at $1.63, and 250 tons April, Port Costa, $1.62½. Outside sales of 12,000 ctls No. 1, Mission Rock, $1.62½, and 8,000 do, do, Port Costa, $1.61½. Bids and offers on call were: Extra choice, spot, $1.65 asked, April, $1.65 asked; No. 1 White, spot, $1.62½ bid, $1.63½ asked; August, $1.55 bid; September, $1.56½ bid; October, $1.60 bid, $1.62½ asked; No. 2 White, August, $1.53 bid, $1.55 asked; September, $1.52½ bid; October, $1.52½ bid; No. 2 Amber, August, $1.55 asked.

WOOL—Receipts have been rather light this week and rates are about the same. Extra choice San Joaquin has brought 23c per lb.

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., April 26, 1882.

FRUIT MARKET.		Pears, sliced	— 9 @— 9½
Apples, bx	2 00 @ 3 50	do whole	— 7 @— 8
Bananas, bunch	2 50 @ 4 00	Plums	— 5 @— 6
Cocoanuts, 100	6 00 @ 7 00	Pitted	— 11 @— 12½
Cranberries, bbl	12 50 @14 00	Prunes	— 9 @— 10
Limes, Mex	8 00 @10 00	Raisins, Cal, bx	— — @ 2 50
do, Cal, box	2 00 @ 8 00	do, Halves	— — @ 2 75
Lemons, Cal, bx	1 75 @ 2 50	do, Quarters	— — @ 3 00
Sicily, box	6 50 @ 7 50	Eighths	— — @ 3 25
Australian	— — @— —	Zante Currants	— 8 @— 10
Oranges, Cal, bx	2 00 @ 3 75	**VEGETABLES.**	
do, Tahiti M	10 00 @20 00	Artichokes, doz	— — @— 50
do, Mexican	15 00 @17 00	Asparagus, box	1 25 @ 1 50
do, Loreto	— — @— —	Beets, ctl	— — @— 65
Pears, bx	— — @— —	Cabbage, 100 lbs	1 25 @ 1 40
Pineapples, doz	8 00 @ 9 00	Carrots, sk	— 65 @— 75
DRIED FRUIT.		Cauliflower, doz	— 50 @— 60
Apples, sliced, lb	— 7 @— 7½	Garlic, lb	— — @— 1½
do, evaporated	— @— 12½	Lettuce, doz	— 10 @— —
do, quartered	— @— 7	Mushrooms, bx	— 75 @ 1 00
Apricots	— 18 @— 23	Okra, dry, lb	— — @— 50
Blackberries	— 14 @— 16	Peas, green, lb	— 2½@— 3
Citron	— 28 @— 30	do, sweet	— 4 @— 4½
Dates	— 9 @— 10	Parsnips, lb	— — @— 4
Figs, pressed	— 4 @— 6	Rhubarb, bx	— 75 @ 1 25
do, loose	— 3½@— 5	Squash, Marrow	
Nectarines	— 14 @— 15	fat, ton	18 00 @20 00
Peaches	— 11 @— 11½	Tomatoes	— 10 @— 12½
do pared	— 14 @— 18	Turnips, ctl	— 75 @ 1 00

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., April 19, 1882.

Eng Standrd Wheat	9 @ 9½	45 inch	9½@ 9½
Cal Manufacture		40 inch	8½@ 8¾
Hand Sewed, 22x36	9 @ 9½	Wool Sks Hand Swd	
20x36	8½@ 8¾	3½ lb	— @47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	— @49½
Machine Swd 22x36	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10½	Bean Bags	6½@ 7
Quarters	6 @ 6½	Twine, Detrick's A	32½@35
Eighths	4½@ 4½	" " AA	35 @37
Hessian, 60 inch	— @12		

Domestic Produce.

WHOLESALE.

WEDNESDAY M., April 26, 1882.

BEANS & PEAS.		Almonds, hd shl lb	8 @ 10
Bayo, ctl	5 00 @3 25	Soft shell	14 @ 15
Butter	3 75 @4 25	Brazil	10 @ 11
Castor	3 50 @4 00	Pecans	13 @ 15
Pea	4 50 @4 60	Peanuts	6½@ 7
Red	2 50 @3 00	Filberts	14 @ 15
Pink	2 50 @3 00	**ONIONS.**	
Large White	3 00 @3 25	Red	— @ —
Small White	4 50 @4 60	Silverskin	1 50 @1 75
Lima	— @6 00	do, choice	— @
Field Peas, blk eyel	5 @1 75	Oregon	— @ —
do, green	2 00 @2 25	**POTATOES.**	
BROOM CORN.		New, lb	— @ 4
Southern	3 @ 3½	Early Rose	2 20 @2 30
Northern	4 @ 6	Petaluma, ctl	— @ —
CHICCORY.		Tomales	— @ —
California	4 @ 4½	Humboldt	1 85 @1 95
German	6½@ 7	" Kidney	— @ —
DAIRY PRODUCE, ETC.		" Peachblow	— @ —
BUTTER.		Jersey Blue	— @ —
Cal Fresh Roll, lb	25 @ 26	Cuffey Cove	— @ —
do Fancy Brands	27 @ 28	River, red	1 90 @2 00
Pickle Roll	— @ —	Chile	1 50 @1 60
Firkin, new	26 @ 27	do, Oregon	1 80 @2 00
Eastern	18 @ 20	Oregon Peerless	1 80 @2 00
New York	— @ —	Sweet	1 00 @1 25
CHEESE.		**POULTRY & GAME.**	
Cheese, Cal, lb	12½@ 14½	Hens, doz	6 50 @ 7 00
EGGS.		Roosters	6 00 @10 00
Cal. Fresh, doz	20 @ 22	Broilers	5 00 @ 8 00
Ducks	— @ —	Ducks, tame, doz	6 50 @ 7 50
Oregon	— @	Geese, pair	1 25 @1 50
Eastern, by expr'ss	— @ —	do, young	2 50 @3 00
Pickled here	— @ —	Wild Gray, doz	@3 00
Utah	— @ —	White do	50 @1 00
FEED.		Turkeys	13 @ 16
Bran, ton	12 50 @13 50	do, Dressed	@ —
Corn Meal	36 00 @37 00	Turkey Feathers, tail and wing, lb	10 @ 20
Hay	10 00 @15 00	Snipe, Eng	1 75 @2 00
Middlings	@18 00	do, Common	50 @ 75
Oil Cake Meal	— — @27 50	Quail, doz	75 @ 80
Straw, bale	— 62½@— 70	Rabbits	1 00 @1 25
FLOUR.		Hare	@2 00
Extra, City Mills	5 25 @5 50	Venison	5 @ 7
do, Co'ntry Mills	4 75 @5 00	**PROVISIONS.**	
do, Oregon	4 75 @5 12½	Cal. Bacon, extra clear, lb	13½@ 14
do, Walla Walla	4 50 @5 00	Medium	13½@ 14
Superfine	3 50 @4 25	Light	14 @ 15
FRESH MEAT.		Lard	13 @ 16
Beef, 1st qual'y, lb	8½@ 9	Cal. Smoked Beef	11½@ 12½
Second	5 @ 7	Shoulders	9½@ 10½
Third	4 @ 4½	Hams, Cal	13½@ 14
Mutton	4½@ 6	do, Eastern	16 @ 16½
Spring Lamb	7½@ 10	**SEEDS.**	
Pork, undressed	6½@ 7½	Alfalfa	12 @ 13
Dressed	8½@ 9½	do Chile	— @ —
Veal	7½@ 8	Canary	3½@ 4
Milk Calves	7½@ 8	Clover, Red	14 @ 15
do, choice	— @ 10	White	45 @ 50
GRAIN, ETC.		Cotton	— @ 20
Barley, feed, ctl	1 45 @1 60	Flaxseed	2½@ 3½
do, Brewing	1 70 @1 75	Hemp	— @ 5
Chevalier	1 60 @1 67½	Italian Rye Grass	25 @ —
Buckwheat	1 50 @1 75	Perennial	25 @ —
Corn, White	— @ —	Millet, German	10 @ 12
Yellow	1 62½@1 65½	do, Common	7 @ 10
Small Round	— @ —	Mustard, White	1½@ 2
Oats	1 30 @1 67½	Brown	2½@ 3
Milling	1 80 @2 00	Rape	2½@ 2
Rye	2 05 @2 20	Ky Blue Grass	20 @ 25½
Wheat, No. 1	— @1 62½	2d quality	16 @ 18
do, No. 2	1 57½@1 60	Sweet V Grass	— @ 75
do, No. 3	1 45 @1 50	Orchard	20 @ 25
Choice Milling	— @1 65	Red Top	— @ 15½
HIDES.		Hungarian	8 @ 10
Hides, dry	19 @ 19½	Lawn	30 @ 40
Wet salted	9½@ 11	Mesquit	10 @ 12
HONEY, ETC.		Timothy	9 @ 10
Beeswax, lb	23 @ 25	**TALLOW.**	
Honey in comb	14 @ 18	Crude, lb	6½@ 7½
Extracted, light	9 @ 10	Refined	10 @ 10½
do, dark	7 @ 8	**WOOL, ETC.**	
HOPS.		SPRING—1882	
Oregon	20 @ 21	San Joaquin, free	20 @ 22
California, new	22 @ 25	do, fair	18 @ 19
Wash. Ter	19 @ 20	do, dusty	15 @ 17
Old Hops	— @ —	Southern Coast	15 @ 18½
NUTS—Jobbing.		Stanislaus & Tuolumne	23 @ 25
Walnuts, Cal	10 @ 11		
do, Chile	7½@ 8		

Retail Groceries, Etc.

WEDNESDAY M. April 26, 1882

Butter, California		Rice	8 @ 10
Choice, lb	45 @ 55	Yeast Powdr, doz	1 50 @2 00
Cheese	17 @ 25	Can Oysters, doz	2 00 @3 00
Eastern	25 @ 30	Syrup S F Gold'n	75 @1 10
Lard, Cal	— @ 18	Dried Apples, lb	10 @ 15
Eastern	20 @ 25	Gen Prunes	12½@ 20
Flour, ex fm, bbl	8 00 @9 00	Figs, Cal	9 @ 10
Corn Meal, lb	2½@ 3	Peaches	15 @ 25
Sugar, wh crushd	12½@ 13½	Oils, Kerosene	50 @ 60
Light Brown	8 @ 9½	Wines, Old Port	3 50 @5 00
Coffee, Green	23 @ 35	French Claret	1 00 @2 50
Tea, Fine Black	50 @1 00	Cal. doz bot	2 00 @4 50
Finest Japan	55 @1 00	Whisky, O K, gal	3 50 @5 00
Candles, Adm'te	15 @ 25	French Brandy	4 00 @8 00
Soap, Cal	7 @ 10		

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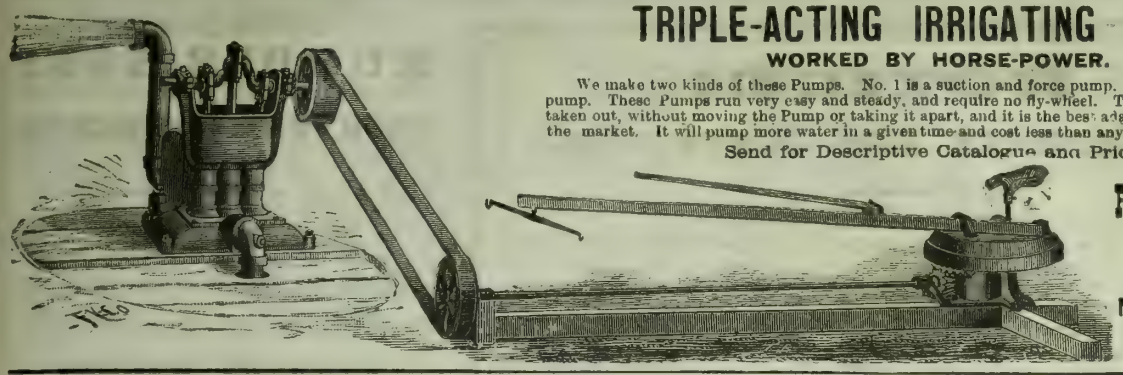

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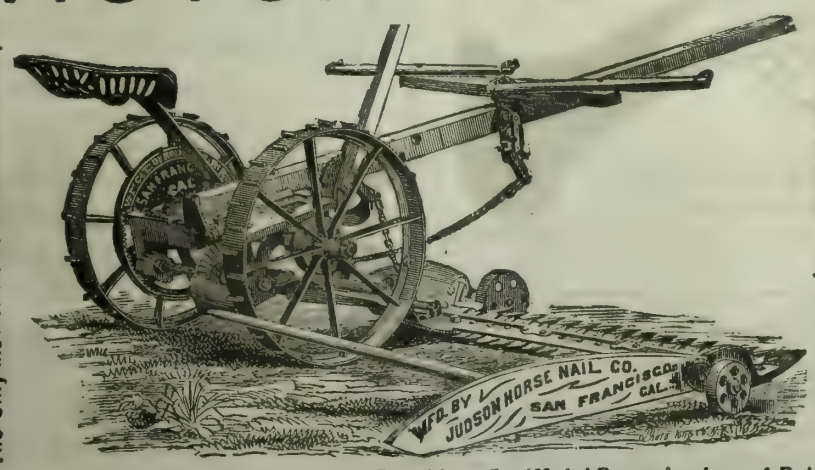

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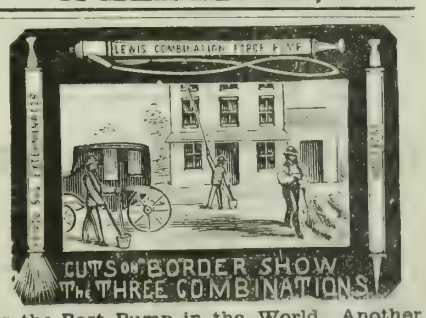

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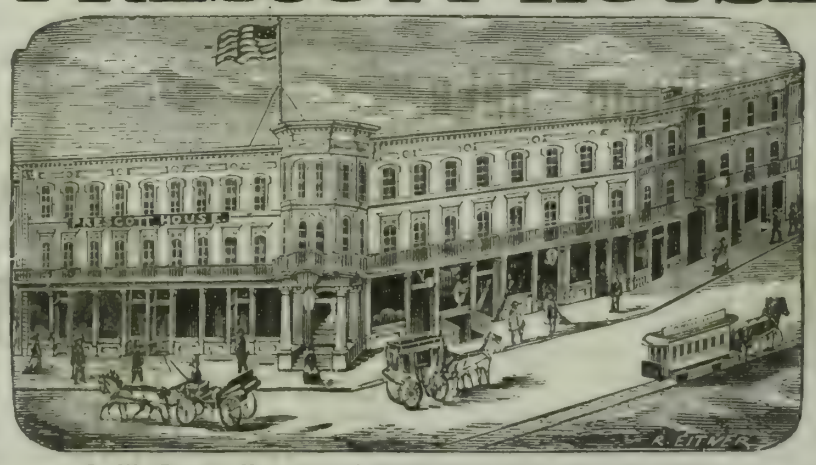

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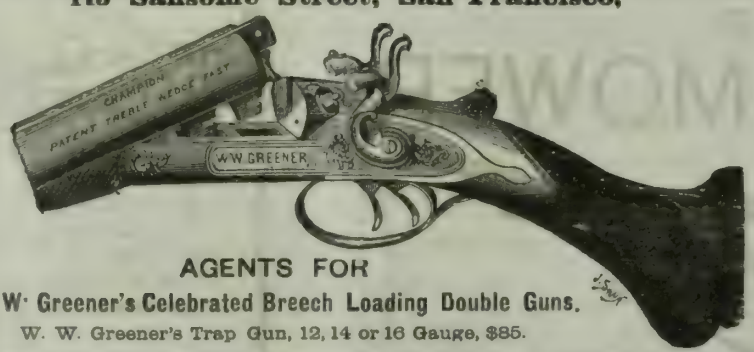

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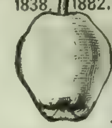

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E. A. SCOTT & CO.,

Sole Importers and Dealers for the Pacific.

P. O. Box 293, Sacramento, Cal.

☞ THE LA FRANCE STEAM FIRE ENGINE. ☜
Circulars furnished on application.

M. COOKE R. J. COOKE

PIONEER BOX FACTORY,

Corner of Front and M Streets, Sacramento.

ALL KINDS OF

Fruit and Packing Boxes Made to Order,

AND IN SHOOKS.

☞ Communications Promptly Attended to. ☜

COOKE & SONS, Successors to Cooke & Gregory

WALTER A. WOOD'S LATEST GREAT ACHIEVEMENT!

The "Pioneer" in the introduction of Labor-Saving Harvesting Machinery again Successfully at the Head.

Grain Gathered more Economically and in Better Shape than ever before, with

WALTER A. WOOD'S TWINE SELF-BINDING HARVESTER.

THE FIRST AND ONLY ENTIRELY SUCCESSFUL ONE IN THE FIELD.

The harvest of 1880 proved

Wood's Twine-Binder

Perfectly adapted and

FULLY CAPABLE

Of handling the worst California and Oregon crops in

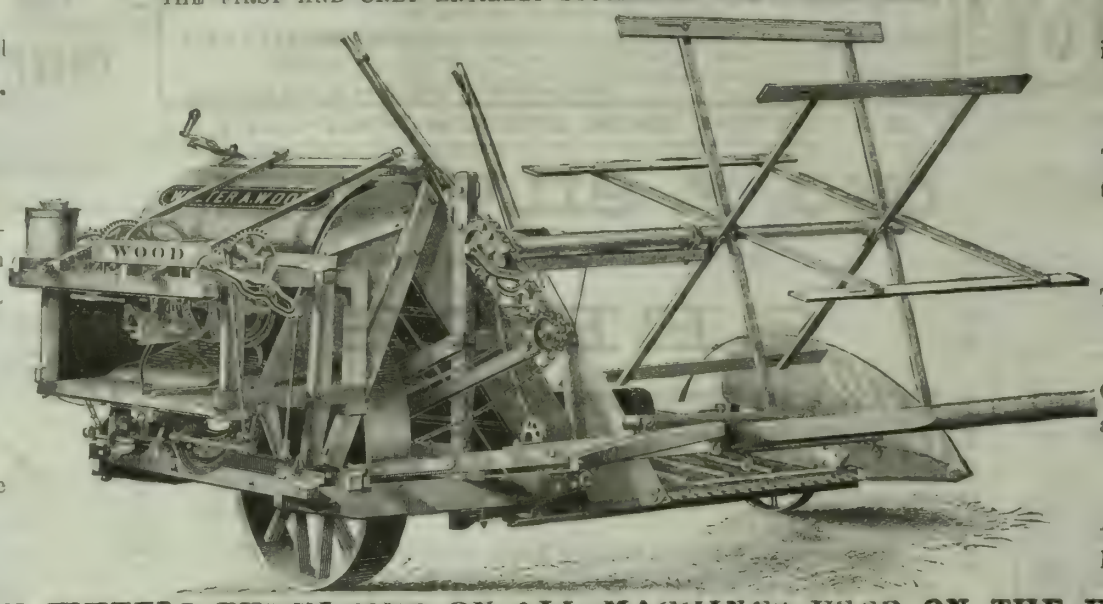
The Most Satisfactory Manner,

While all other's

ATTEMPTS

To Bind Grain with Twine

WERE FAILURES.



The fact that the "Wood" is the only

TWINE-BINDER

That has as yet done anything; the only one

With Any Record,

The others' claims being

SIMPLY PROMISES

Of what they hope to be able to do, establishes the

"WOOD'S"

As the only safe one to purchase.

WROUGHT IRON WHEELS FURNISHED ON ALL MACHINES USED ON THE PACIFIC COAST.

Our space will only allow us to refer here to two examples of the success of the Wood Twine Binder, and we wish to call special attention to these, as the agents for other "attempts" at Twine Binders were in the field with their various machines, but being utterly incapable, were obliged to draw out, while the Wood in every respect satisfactory and successful, won the following commendations:

PLEASANTON, CAL., Sept 29, '81.

MESSRS. FRANK BROTHERS—*Gentlemen:* Enclosed please find draft for $1,000. * * * * We are well pleased with our Wood's Twine Binders, and find them just what you recommend them—*The Best.*

Yours truly, BAKER & WHIDDEN.

(Both the "McCormick" and the "Osborne" *experimented* nearly two weeks in these same fields with the above result.)

The following from a section where all previous attempts proved failures:

WATSONVILLE, Jan 15, 1882

MESSRS FRANK BROTHERS—*Dear Sirs*—This is to certify that my Walter A Wood Twine Binding Harvester gives me entire satisfaction, it is a grand success, gathering and saving all the grain in the best manner, and leaving it in splendid shape. It gave no trouble, caused no expense from delay or breakage, and has harvested my crops better than any machine I ever had on my ranch. In cutting 400 acres, much of it being heavy and badly fallen and tangled, it used 500 pounds of twine, costing me, on the average, less than 35 cents per acre I take pleasure in recommending it

Very truly, C. W. ROWE.
W. H. ROWE.

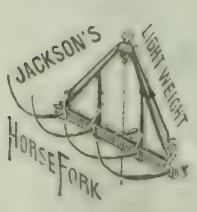
We, the undersigned saw Wood's Twine Binding Harvester at work in the fields of Mr Rowe, of this place, and were well pleased with the work it was doing. We have seen other Binders tried in this valley, but the Wood's does the work more perfectly than any other, in fact, we consider it a complete success

JOSEPH MCCALLUM.
A W ROBERTS.
DANIEL TUTTLE

During the past harvest Mr. Rowe brought his Wood Twine Binding Harvester to our ranches and with it cut our crops for us We are well pleased with all the work done, and hereafter want our grain harvested with a Wood's Twine Binder

D CRAWFORD.
WM WILLIAMSON

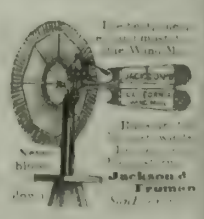
FRANK BROTHERS, 319 and 321 Market Street.



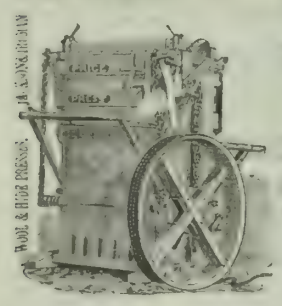
JACKSON & TRUMAN,

MANUFACTURERS OF

Agricultural Implements.



Jackson's Self-Feeders, Elevators, Spreaders, High and Low Derricks,



FARMERS' IRON PULLEY BLOCKS,

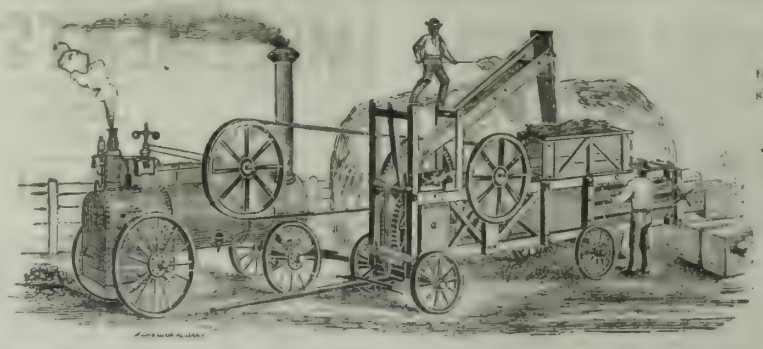
Light-Weight Forks,

DRAPERS, and THRESHING MACHINE TEETH, and EXTRAS.

Write for our New Sixty four page Catalogue.

We are always pleased to quote prices and answer inquiries.

Dederick Mounted Perpetual Presses,
Dederick Reversible Lever Perpetual Presses.
Dederick Belt Perpetual Presses,
Price Hay Presses,
Improved Eclipse Presses,
Improved Eagle Presses.



We make all sizes of **TANKS,**

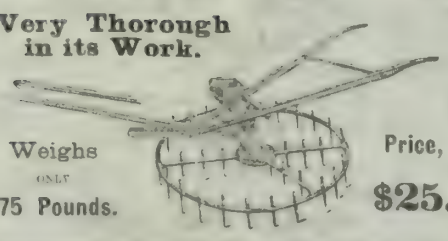
Of the best Redwood, and guarantee them full size.

WINDMILLS, PUMPS

Fittings, Pipe, Etc.

THE DEDERICK BELT PERPETUAL PRESS.—Price, Mounted, without Power, $800.

Very Thorough in its Work.



Weighs ONLY 175 Pounds.

Price, **$25.**

Read what a Leading Vineyardist and Viticultural Commissioner says:

"I have given your JACKSON VINEYARD HARROW a thorough trial, and consider it a GOOD IMPLEMENT for the purpose intended. In the hands of a careful man IT DOES EXCELLENT WORK" W W SMITH, Vacaville.

THE JACKSON SELF-FEEDER,

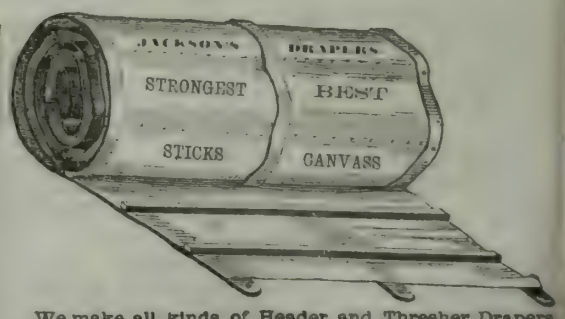
GOLD MEDAL from Mechanics' Institute for most meritorious and useful invention, 1881.

FIRST PREMIUM from California State Fair for nearly all our goods.

We guarantee our Feeder to make any Thresher do better work, and more than by hand. We will place our Feeder on any machine, and guarantee it to do better work than any other Feeder, or no sale. It will save the price of itself over any other Feeder in four weeks. Every one is guaranteed, if required.

JACKSON & TRUMAN,

San Francisco, - - - - California.



We make all kinds of Header and Thresher Drapers, Grain and Straw Carriers and Threshing Machine Teeth.

PACIFIC RURAL PRESS

HARVESTING EDITION—TWENTY-FOUR PAGES.

Volume XXIII.] SAN FRANCISCO, SATURDAY, MAY 6, 1882. Number 18

Hybridizing and Cross Breeding Wheat.

Many of our readers, we know, are interested in experimenting with new varieties of wheat, and are, in fact, ardent students of the wheat plant in all its forms. Some of them may be disposed to undertake some experiments in hybridizing their varieties, and thus produce a new variety which may be of general value. Prof. Blount, of the Colorado Agricultural College, is one of the most persistent and successful experimenters in the production of new varieties of the cereals. He has produced several excellent things, one of which, the "Blount" corn, is known in all parts of the United States. Prof. Blount believes in the value of efforts at hybridization.

In a recent essay he writes: To hybridizing and cross breeding we are indebted for some, if not all, of our choicest fruit, as apples, pears, grapes and stawberries; the finest flowers that adorn gardens, lawns and bay windows, roses, camellias, azalias and rhododendrons; for our finest wheat, oats, barley, rye and grasses, and for our most valuable vegetables. Why then should the farmer be behind? Why not cross and re-cross and breed up his cereals and bring out specimens that will make an exhibition for utility worthy of his calling? He can do it if he will, and ere long science will enter largely into the operations of his work. Stockmen, by crossing the finest specimens, make higher grades. They cross with a view to combining the largest number of good qualities in one. So should we deal with our cereals especially. No farmer can estimate the loss he actually sustains by the use of poor kinds and poor seed. He should never be content unless he has as good crops as anyone.

This being the case, it is quite important to have plain and accurate instructions as to the method of cross breeding wheat, so that all who have an interest may experiment. This is given by Prof. Blount, in substance, as follows: The simple process of crossing one variety of wheat upon another, as before intimated, is somewhat more difficult than crossing corn. It requires much more skill and knowledge of the habits of the plant, because the work must be done at a certain point of time, and all that is done is within the glumes. The mere taking the stamens from one flower and putting them into the glumes of another may be easy enough, but that is by no means the most difficult part. The determination of the time when the crossing must be done is the greater work. Then if you will learn the secret that will benefit your crop at least a half if carried out, please follow me into the field while the blooms are visible only here and there. We must go in the morning before the moisture of the night has dried off, and while the chaff and straw are supple and pliant. Take the head of one variety, open the glumes, and with a common microscope examine and satisfy yourself that the stamens are still intact and unbroken. Carefully extract the three stamens in one glume and with a pair of long-pointed tweezers break them upon paper and collect the pollen. We will now take this pollen to the other chosen specimen and proceed to open, just as carefully as possible, the glumes of the mother stalk to remove the three stamens in it, and in the place thereof deposit the pollen aforesaid, and your work is done. It is not safe to meddle with this head of wheat until it is ripe; then shell out in the hand and you can readily distinguish the hybridized kernel. Oats, barley, rye and other grasses are crossed in the same manner.

Every cross, especially between smooth and bearded varieties, will be attended with a wide diversity of results. Some heads will be long, others short; some bearded, others smooth; some will have irregular, discolored kernels, others fair and regular, all as different as children in a family. Of course, the experimenter must reject all imperfections in his selections for at least three years, in order that his crosses may have a fixedness and valuable qualities. Every grain that has desirable characteristics should be preserved and bred up, and, if found worthy, to be put on the list as a standard.

The one who attempts cross-breeding of wheat should have definite aims in view, and to secure which he chooses his parent varieties just as the stock grower mates his animals. For example, speaking of wheats for Colorado, Prof. Blount says, "In wheat the improvement must be kept up—it will not do to retrograde. Take for instance the Australian and cross it upon the Mexican—two soft, starchy varieties. The improvement is not what millers want. They demand wheat with more gluten than either of these contains. The Australian is a good standard wheat for this section. So is the white Mexican, but a cross made upon either by a more glutenous variety would be better, from the fact that a hybrid made here does not have to become acclimated as do imported wheats, and then, too, it is not so liable to be injured by the accidents that sometimes and quite often befall foreign standards."

Thus, also, there is warrant for efforts to produce new California varieties of wheat which shall have special adaptations for this State. While our richer grain growers are importing new varieties from all parts of the world, it is possible that those of more limited means, but with a taste and time for experiments, can render valuable public service by the breeding of new sorts.

LIME AND GERMINATION.—The fact that lime is essential to germination has been recently fully confirmed by some interesting experiments made by Dr. Liebenberg, and which have recently been published in the journal of the Vienna Academy of Sciences. It appears that the seeds of many plants require the presence of lime in the soil during the germinating process, or the seedlings die for the want of it. It is shown also that many other plants do not fail to germinate freely and well without the presence of lime in the soil. Dr. Liebenberg also points out that plants which fail to grow through the absence of lime in the soil do not fail in consequence of the injurious effects of any other matters that may be present, but because lime is essential to their healthy growth.

A BIG DAY'S CUTTING.—The Port Blakely mill, at Port Blakely, W. T., owned by Renton, Holmes & Co., on last Saturday, in 12 successive hours, cut 190,000 ft. of merchantable lumber, and during the week closing with that day cut 1,000,000 ft. This is the largest cut in one day at any one mill west of the Mississippi. The proprietors of this and other mills along the sound complain of the scarcity of mill hands.

LAST week 20,000 salmon eggs were shipped from the McCloud fishery to parties in the East.

A Country Home.

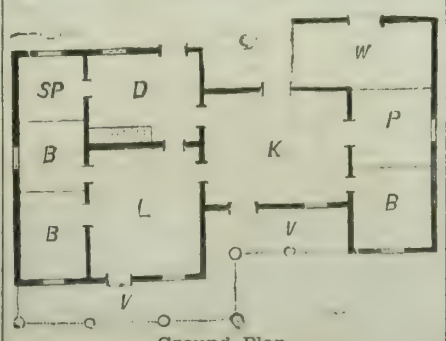
EDITORS PRESS:—I would suggest that, for the benefit of some of your young men readers, you should give some more plans and outlines for country homes.—TWENTY-ONE. Solano county.

We cheerfuly comply, and as the house which the ordinary young man of 21 will require is a small one, we select a neat little cottage which can be cheaply constructed, and if the young man secures a wife who is apt at home adornment, she can soon transform the simple achievement of the carpenter into a bower of beauty and loveliness. The house in the engraving is one which any carpenter can construct; in fact many a young man with a knack for tools and the incentive of a pair of bright eyes, could easily build for himself. It is well adapted for the warmer parts of the State, for it is well veranda'ed, and can be quickly enclosed with a wall of flowering, climbing plants.

The following is a key to the lettering and the sizes of the rooms: *L*, living-room, 12x13; *K*, kitchen, 12x14; *D*, dining-room, 9½x12; *B*, *B*, *B*, bed-rooms, 9x8 and 8x8; *SP*, summer pantry, 8x8; *P*, pantry, 8x8; *W*, wood-shed; *V*, *V*, veranda.

DESIGN FOR CHEAP RURAL COTTAGE.

The summer pantry can be used in winter for a place to keep meat, and as a store-room. Being away from the kitchen fire, it will keep fresh meat a long time in suitable weather.



Ground Plan.

We think this will make a very convenient little house, and not devoid of beauty.

WHAT'S IN A NAME?—The reporters of the daily papers can give Downing points on fruit names. At the last meeting of the State Horticultural Society, James Shinn had occasion to mention the "Crescent Seedling" strawberry. The morning paper puts it forth as the "Crested Sepoy."

THE Lodi *Review* counts up over 2,000 acres in that vicinity that have been planted in watermelons this season.

Potash for Potatoes.

Those who are looking out for a means to renew fertility in their potato fields, should not overlook the value of potash. Where there are supplies of wood ashes attainable, they should be secured and utilized. Where these are not attainable, commercial fertilizers rich in potash salts should be secured. These are not new facts, but they are so strongly affirmed by recent experiments in Ireland, that we allude to them at this time. There has just been published in Cork a pamphlet entitled: "Reports of Experiments on Potato Culture, Made Under the Direction of the County Cork Agricultural Society," and which is an account of the experiments on the Munster farm last year, made under the direction of Mr. T. Carroll, Superintendent of the Agricultural Department under the Commissioners of National Education. They are a very elaborate set of comparative experiments, in which various sorts were observed as to liability to disease, and in which the potato was subjected to various manurings.

We have not space to detail the methods of the experiments, but the results are unequivocal and may be summarized as follows: Where no manure was applied the crops appear to have been five tons per acre, and the effect of the addition of sulphate of ammonia or nitrate of soda, bone meal, bone superphosphate and mineral superphosphate, and other manure is given at 2 cwt. and 4 cwt. per acre, both alone and in combination with various auxillary manures. In every cese where kainit (a German potash salt) was added the produce jumped from 6 or 7 tons to 12 and 15 tons, and when kainit was applied alone the produce was 14 tons per acre. Farmyard manure collected in open yard produced a crop of 13 tons, and made under cover a crop of 16 tons. But the following is the principal conclusion to which the experiments led: "The effect produced by kainit (potash) is remarkable, being quite comparable with that of good ordinary farmyard manure, not only as regards gross weight, but also as regards the relative proportion of marketable and small potatoes. Its action is dominant, whichever manure it may be joined with."

APPROVAL OF AMBER CANE.—Those who have labored hard to develop the value in the amber sorghum cane as a source of sugar have secured the approval of the high scientific moguls of the country. The National Academy of Sciences, at a meeting in November last, appointed Prof. Chandler and Dr. Moore, of New York, Dr. J. L. Smith, of Kentucky, Dr. Goesman, of the Massachusetts Agricultural College, and Professors Brewer, Johnson and Silliman, as a committee to investigate and report on the sorghum sugar industry, with reference to the methods employed and the results obtained in experiments made by Prof. Collier during the past three or four years, at the Department of Agriculture. The committee has just made a report. It is a voluminous document, and approves all the chemical work done in the Department of Agriculture by Prof. Collier. It declares sorghum to be a sugar-producing plant next to the sugar-cane of Louisiana and the tropics, and says that it is so in actual cane-sugar contents, and that it has many species adaptable to the various soils and climates of the United States.

IMMIGRATION MATTERS.—The Immigration Association has sent its land officer to the southern portion of the State, for the purpose of examining vacant lands. This inspection is the second step instituted in the plan of procedure recently adopted, and is intended to ascertain the capabilities of the soil, the natural advantages of certain localities, and to verify the impression entertained, that these lands are capable of sustaining thousands of settlers who now desire to find homes in California.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS

Santa Clara County Notes.

EDITORS PRESS: Gilroy, Santa Clara county, 20 years since when I visited it, was scarcely deserving the name of village. It had the same climate and was surrounded by the same acres of much richer soil than now; owned by a few wealthy individuals, and occupied by horns and hoofs of the wild Castilian persuasion. The straggling footman that accidentally found himself as a center point of attraction for a large band of circling cattle, would just naturally imitate the example of a good Presbyterian D. D., of Solano county, who, in a similar fix, sang

"I am a pilgrim, I'm am a stranger; do not detain me"

Some express surprise when Dr. Woodbridge narrates how all those ferocious bovines quietly listened, then lowered their heads to feed as usual, and allowed him to pass out unmolested—the mystery is all solved when once reminded that these were some of the Missionary stock and had respect for sacred songs. That line of stock has nearly all passed through the Miller and Lux beef trade; and now, in their stead, are many small bands of Americanized dairy cows, and the owners each seem to feel some pride in associating with what they conside good stock, and aim yearly to improve it.

The Dairy.

There is an almost continuous line of dairy ranches from San Felipe to Gilroy—thence on to San Juan. Cheese making seems their choice; and either the feed is very choice for cheese, or the cows as good as they claim. On Mr. S. M. Maze's ranch—his dairy under his son's management—22 cows were producing over 60 lbs. of choice cheese daily (that was in March) when feed was yet short. They have made as high as 4 lbs. per day to the cow. This particular dairy claims no precedence over any of the other small dairies—in methods or yields—yet, if the whole premises were reviewed, it would furnish a picture of a small dairy farm, kept on the simplest plan of neatness and convenience. The same system in house, yard, and in all the yards and buildings, yet all most economically arranged. If it were for the looks of the thing, it would pay to have all useless litter consigned to its appropriate place, and every loosened picket speedily adjusted. There are scores of good farmers that need just a gentle hint on this subject of neatness, as one of the essentials of the home education.

In the vicinity of old Gilroy village are fine dairy farms, and very good fruits. W. N. Furlong evidently takes considerable pride in making a success of all that belongs to the profession in different departments, and was chipping his common fruits to graft to choicest varieties. The Reeve Bros. own and rent some of the best dairy lands. On the Julius Martin ranch (1,200 acres) they are milking over 300 cows. They employ one man for about every 20 cows, and make three sizes of cheese.

Green Cheese

It is the good fortune of California cheese men to have a market that will buy their cheese fresh from the press, or only a few days old, thus saving longer care and labor, and also saving much loss of weight in curing, and all risk of spoiling. When in Eureka, Humboldt county, I asked: "Where was that cheese made?" "Gilroy, I suppose," was the reply. E. A. Davison, a large dairy operator, is spoken of as one of extensive experience in the East, as well as here, in this line as a specialty. There are scores of others running dairies of 20 to 200 cows each.

Complete cheese-making fixtures, to suit any sized dairy, and of a highly improved character, are manufactured by J. S. Woolsey, Gilroy, whose early experience as a practical cheese-maker seems to qualify him for success in this branch specialty. His steam dairy-heater I found to be giving fullest satisfaction for economy, efficiency and safety, and all seemed to really prize it as an indispensable cheese fixture. On visiting the manufactory, I found Mr. Woolsey filling orders from a distance. One outfit complete for Johnson & Lombard, Norwalk, Los Angeles county, read: "One large-size generator; one 620-gal. cheese vat; 15 2½-inch press screws; 20 30 lb telescope cheese hoops; eight 10 lb do.; curd fillers and curd knives, thermometers, test tubes, etc., making each and every implement for a large cheese manufactory. This steam generator will probably soon be employed for various other purposes as successfully as here. It is neat, safe and cheap.

Gilroy.

The business portion of Gilroy is mostly confined to one main avenue, about one quarter mile in length. The residences and public buildings occupying beautiful adjoining streets to the west. Everything seems to be planned out for a neat little city.

In size it is nearly the equal of Hollister, and in its mechanical and manufacturing shops shows much more energy and enterprise. The public buildings, schools and churches, seem ample for the requirements, supplemented by a convent school.

Schools for Animals.

The horse trainer has just impressed a $5 lesson on a large class, graduating them H. M.—Horse Masters. It would be invidious to not mention Prof. Thos. Hilderbrand's training school, or Dog college, that is looked upon as a real first-class institution of the kind, and has large patronage. He has some distinguished pupils, and has two canines belonging to Geo. Crocker and 3 or 4 training for Whittier, Fuller & Co., S. F. Tuition is only $100 for the term, each.

Prof. Leisly also has a similar institution out of town. He is highly spoken of as a trainer; said to have a larger institution and gets some pupils even from Oregon.

Improvements.

In every direction from Gilroy are neat and comfortable farm houses. Some of the older edifices, though very comfortable, are landmarks marking the progress of building taster.

To the west and northwest are some good fruit lands among the low hills, where grapes and most small fruits have done well. S. T. Moore, about four miles out, has a very neat farm home, and two miles to the north of him, Mr. P. H. Cordes, of Oakland, is occupying a long-neglected ranch, and has a beautiful, sloping 40-acre tract planted all in fruits. Apples—Newtown Pippins, Skinners' Seedling (the finest for summer apples), Bellefleur, Spitzenberg, Wagner's Late Winter and Jonathan. He has, also, German prunes, plums, Bartlett pears, English gooseberries, etc. His plans all seem to be made for marketable fruits. He has planted his apples 40 ft. apart, and will cultivate some small fruits between till they require the whole space. A little farther on is Mr. C. F. Eckhardt, also trying to remodel an old place into one that will produce merchantable crops. A few years will show much in favor of that class who are taking a live interest in advancing the value of their estates.

Old Fogyism.

Santa Clara county has her share of dead weight to carry, same as other counties. She has some of that ancient ignorance to contend with—that worst class that have been thoroughly schooled not to desire any teaching or any advancement in agricultural knowedge. Heresy they see branded on every innovation changing any part of the ancient programme of husbandry. They even allow themselves to indulge in an unfriendly disposition toward those who are making palpable signs of advancement and improvement, and would gladly assist them to do the same. The two elements are incongruous—the fittest will most likely survive.

This great distaste for advanced ideas, and stupid, persistent continuance in ignorance, is not confined exclusively to Spanish, Italians, Swiss, French or Irish but there are some native-born white Americans that so far as they have any influence it goes to check the prosperity and improvements in horticulture and farming interests. No fruit-pest commissioner knows near as much as they do, and they propose to thwart the measures planned by the State for common protection. When the commissioner enjoins action against a pest, they are sure to know that rest is needed and that their trees are not worth saving, and they are not going to fight bugs for the benefit of some rich fruit monopolist. There is one consolation, that as far as the fruit pest goes, the class here referred to have been so shiftless as to have but little interest in common with live advancing fruit or grain culturists.

Enright's Engines.

The present outlook is very full of promise for an abundant harvest throughout the State. In anticipation of this the foundry and machine shop of Joseph Enright, San Jose, has for months been manufacturing his improved steam engines expressly for the harvest of 1882

When in San Jose two weeks since, I think I counted 13 standing out in the street, several of which were being fired up to make a severe test of each as to tightness and strength of boilers, and also the perfection of all parts, before putting the finishing polish on them. Besides these he has a large number in his warehouses of new ones made and ready to be mounted on the shortest notice. Those he sold last year gave very high satisfaction, and brought to him some very high commendations from Colusa county and elsewhere. He has recently completed a road engine on original principles, that will be very easily controlled by the engineer. It has perfect brake power to control it much more easily than the common team wagon is managed. The large drive-wheels have a 16-inch face, to prevent its sinking in soft ground.

San Jose is getting to be a large manufacturing town, and is now, through its enterprising daily newspapers, urging all classes to extend an invitation containing their most liberal inducements to skilled mechanics and capitalists to come and establish large manufacturing enterprises in San Jose. Urgent necessity demands employment for the thousands of willing hands, and why not build all the machinery here as well as to pay freight on the manufactured article built elsewhere?

Electric Tower.

The electric light shining from that very artistic spider-web tower at an elevation of 200 ft. is the crowning glory and fit emblem of the Town of Schools. Though such a vast structure, it is made of gas pipes, and should an immense assemblage of people congregate around and under it not one less standing place is caused by the tower. Parties from 10 miles out toward the foothills say, on dark nights, it enables them to see the road. Mr. Dillay, of Santa Clara, removed his hat to show me the maker's name, saying he could read that print by this light when standing on his tank tower three miles off. The six lamps, each of 4,000 candle power, with an 8-ft. canopy reflector, ought to fill the valley with revealing light. It floods back yards with light as well as the streets, which is an important element in detective service. Capital and gas burner may be too strong for the present, and veto this, but that sage individual called General Public says this is the coming light, and that its adoption is only a matter of short time. Give San Jose credit for taking advance steps in this great practical problem.

B. W. C.

Scenery and Salmon.

The Beauties and Industries of Carquinez Straits

EDITORS PRESS:—A favorite cruise of the yachts is from San Francisco to Vallejo or Benicia. On leaving San Francisco the view that meets the eye, on a clear day, is one of beauty. Oakland with the foot-hills beyond, clearly outlined by a sky of unclouded azure, and the merry dancing waves of the bay in the foreground presents an attractive picture. As one pauses to admire the scene, he does not wonder that so many prefer a residence there away from the crowded populace of the metropolis. Brain and body find rest in the daily trip to and from Oakland.

Turning to the west he finds there a view still more enchanting. The Golden Gate, with its protecting forts, anchored ships and the never-tiring tug boats, guiding the loaded ships to sea and thus starting aright our produce for foreign ports. Soon the panorama changes and Mt. Tamalpias towers above him and he knows that in its shadow nestles the pretty little town of San Rafael.

Sailing on, the pleasure seeker passes Red Rock, the Brothers and the light house and enters the broad expanse of San Pablo bay. A westerly breeze carries the yacht into the beautiful straits of Carquinez, where scenes of picturesque beauty meet his vision on all sides.

The entrance to the straits is guarded by Pyramid rock on the Contra Costa side, and Mare Island lighthouse on the other. Across San Pablo bay are the hills and mountains of Marin county. On either side of the straits are the farms and farm-houses. To the east, Benicia, with the immense ferryboat *Solano*, plying between there and Port Costa; and beyond, Mt. Diablo rises in all its grandeur, where the soft lights play with deepening shadows, defying the skill of the human artist who would produce on canvas what the great Master has created in nature.

The Straits of Carquinez have been likened to the Bosporus, near Constantinople, and also to the Hudson, on account of their beautiful outlines and bald shores. And, like the Hudson, some future day will find the shores of these straits dotted with beautiful villas and pretty homes.

The climate in this section is unsurpassed by any in the State for uniformity. It is not so windy as that of either Benicia or Vallejo, and not so warm as Martinez. An hour and a half suffices to bring you here from San Francisco by rail—but little longer than to go to Fruit Vale or Alameda. The climate and scenery will soon cause it to be more sought for for homes than Oakland or its environs. Here flourish the orange, fig and vine.

Land is better and cheaper on these straits than in any other part of the State, and owing to the uniformity of the climate, crops are more certain.

The flying trains, freighting schooners, the new town of Crockett, Heald's foundry, and the ships loading at the warehouses of the Grangers' Business Association and Port Costa, give the traveler some idea of the business done on these straits.

What are these small boats, 50 or 60 of which can readily be counted? They are fishermen. What do they catch? Salmon, of all sizes. Most of the fishermen dwell in arks—small houses built upon scows, which they move from place to place. At present quite a number are stationed in South Hampton bay, which puts into the land opposite Port Costa. Some of the fishermen have their families, others live in bachelor fashion. Most of these men are Greeks and Portuguese.

It takes two men to man a boat; one to row and one to drop and haul in the seine. These boats each catch from 1 to 100 fish per day. Twelve M. Saturday to 12 M. Sunday is close day, during which time they are not allowed to fish; and these great beauties of the finny tribe, of which Brooks has given us such truthful representations, are free to enter the upper waters of Suisun bay, the Sacramento river and their tributaries. The fishing is done on the ebb tide.

Some of these fish are shipped to the San Francisco and local markets, but the greater portion are sold to the canneries, two of which are situated in Martinez and one in Benicia, known as the Benicia Packing Co.

Here the fish are thrown from the boats into the cannery, where they are first opened and relieved of the head; they are then thrown into a cleansing vat; taken from this and the scales scraped; then washed and cut into pieces, by means of knives connected by a wooden bar; these pieces are cut into smaller pieces by men with large butcher knives. From here the fish is carried to the packing tables where it is placed in cans by boys and girls; after which the cans are carried to the table where they are weighed, the lids put on and the cans cleaned; the lids are then soldered on at the west side of the building. After the soldering is done a very small aperture is made in the center of the lid to allow the air to escape. Having stood a while for this purpose they are taken to the east side of the building and the aperture soldered.

The cans are then tested in an immense testing boiler of hot water and if any leak is found it is stopped by a man who stands ready with soldering iron. The cans are then placed in large punctured iron plates with an iron hoop around the top and chains for convenience in carrying, which hold eight dozen cans. These are placed one above the other and covered by large copper cylinders, into which steam is allowed to enter; this is called the "steam bath," and here they remain for about an hour; they are then taken out and placed on the platform out of doors, and cold water thrown over them to cool them. After this they are taken into the warehouse, wiped, varnished and packed for shipment.

We were greatly astonished when told that the capacity of the institution was 2000 fish per diem and consequently 20,000 cans. These cans weigh one pound when filled.

The cans are manufactured in the upper story of the building. This cannery prefers to employ white boys and girls, but being unable to obtain the requisite number, are compelled to employ Chinese help. Only within the last three years have they been fishing in the straits, thinking they could only catch salmon in shoal waters.

CLARA DEMING.

April 24, 1882.

Lake County.

EDITORS PRESS:—I wish to give your readers the main reason why Lake county is so little known, lying, as it does, so close to the great marts of trade and commerce. It is this. Lake county is surrounded by a rim of mountains without a low pass. The water outlets (Cache and Putah creeks) are two long, steep and tortuous canyons.

I do not propose to write "high-stool" literature, if I could, nor deal in glittering generalities. Success comes only by observing the small and particular points and details in any enterprise.

Grape Vines.

The unusual phenomena is presented this spring of, now and then, a heretofore vigorous vine partially dying. Generally there is a strip of green wood on the north side and a growth of sprouts from the roots. It is claimed that the singular early cold weather one year ago last fall killed the unmatured buds; and it is my opinion that the sun last spring burnt the stem and crown before the dormant buds could start from the old wood enough to make a shade. Now, to prevent such a recurrence, I would suggest that the "second crop" be not encouraged by clipping the ends of the growing vines in all the northern part of the State, for the wood will not ripen as soon in the fall, with bunches of green grapes hanging. I know a 10 or 12-year-old vineyard planted too close, but did no better when every alternate one was taken up; so it seems from this that vitality, once lost, is hard to regain.

Cultivation of the Soil.

It looks absurd to a new comer to see the crust of the soil broken up and the surface stirred in the hot sun and wind to retain moisture. To explain this, we must know the water below is rising through the uniform strata until it strikes the under surface of the detached and cultivated soil, where it must stop. If the capillary tubes were not thus broken, the water would reach the surface and be evaporated. Any water may contain the elements of plant food, but no other so much as the water in the soil below. This may often account for the unsatisfactory results of irrigation. The water should go into the ground away from the tree or plant, and return from below. Fertilization may not properly come under the head of cultivation, but in the case of summer-fallow they appear closely connected.

Of the theory that sunlight is material, and in striking the earth increases the amount of plant food, there may be a difference of opinion; but it is demonstrated that the earth is surrounded with such gaseous elements, and one of the questions is how to obtain and retain them in the soil with the least amount of time and labor. The more and deeper the soil is moved when dry, the more of these elements are absorbed. Another benefit of deep plowing is the breaking up of holes that are made by gophers, insects, worms, etc., through the subsoil, which obstructs and prevents the water from rising. Then, again, a portion of the soil detached from the earth and moisture, as in summer-fallow, becomes highly heated, and, like lime rock, slacks and becomes mellow when the rains come in the fall.

Sheep Raising

This may be called the leading industry of Lake county. I have owned every year, for the last 15 years, from 200 to 1,200 sheep; they were always healthy and fine if their range was large. Seldom is any more moisture wanted in the winter months, but it is often too cold for anything but a slow growth of feed. The pampered fine Merino bucks brought here from the lower valleys are almost sure to die without extra care. Perhaps 10% or 15% of the sheep here have died this season, and not more than one-half the usual number of lambs have been raised.

Some with overstocked ranges commenced to feed hay, but with poor success. Experience has taught me that the sheep's teeth, after eating the new, tender grass awhile, are not in condition to masticate hay, nor their stomachs to digest it. The feeding of hay should commence at the advent of the first rain, and the sheep in no way prevented from roaming about. Lake county will no doubt maintain its reputation for the best of wools, but shearing must be very late this spring.

Immigration.

Of the immense array of figures showing the amount of unoccupied land in Lake county, I wish to say a few words, but not to encourage *poor* immigrants to come here and be doomed to disappointment. There are no *large* tracts of tillable land vacant; it is mountainous and covered with chemisal and other brush. Though there are numerous small fertile spots, the labor and expense of clearing off the brush requires capital. It is more than probable that this red brush land is the best for fruit trees and vines, but what is that to the man, however willing to labor, without something to live upon for the first few years. C. P. SCRANTON.

Lower Lake, Cal.

Pacheco Valley.

EDITORS PRESS: — This valley (sometimes called Ignacio valley) lies in the central part of Contra Costa county, between the Mt. Diablo and the San Ramon valleys, extending from the town of Pacheco, which is situated about five miles southeast of Martinez, to the foot of Mt. Diablo on its western side. A range of low, rolling hills, extending from the mountain to the town of Concord, or within a mile and a half of Pacheco, divides Pacheco from the valley of Mt. Diablo. It varies in width from two miles to a quarter of a mile, being narrowest at the foot of the mountain, where it narrows into the Pine canyon, from the head of which a good wagon road is constructed to the top of the mountain. This road is used by tourists, who make the ascent to enjoy the most extensive and magnificent view to be found in the State. San Francisco, Sacramento and Stockton are visible on a clear day from the summit, by the aid of a good glass, as well as all the intermediate country, from the Golden Gate to the snow-clad Sierra Nevada mountains. This valley has the aspect of a nearly level and fertile plain, with numerous scattered oaks of a large size. Nearly the whole of it is one large grain field, divided up into farms of from 160 to 1,000 acres each. Orchards and farmhouses, nestled here and there among the stately oaks, renders the outlook pleasant and attractive, and makes one feel as if he would like to settle down and make his home here. The climate is warm, pleasant and healthful, being much like that of Diablo valley, though possibly a degree or two cooler. The soil is generally of a gravelly loam, especially near the mountain, with more or less of adobe soil toward the lower portion of the valley. Its fertility may be inferred from the fact that it has been cropped with grain for more than 25 years, and still yields fair returns. The few orchards and vineyards that have been planted for a quarter of a century have demonstrated that the climate and soil are well adapted to fruit growing. At the farms of Mr. Prince and Langdencamp I saw apricot and almond trees full of thickly set fruit, showing that they had been uninjured by frost. These, with apples, pears, peaches, cherries, quinces, plums, prunes and grapes, thrive well in all parts of the valley.

There is no doubt but that some day not far distant this valley will become one vast fruit orchard, instead of an immense grain field, as at present. Some are beginning to set out fruit already, and more are preparing to plant vines and fruit trees next year. There are some tracts of land for sale, held from $50 to $75 per acre, while some choice places may be held at a higher figure. Mr. Penniman, of Oakland, has, within a few months, bought a tract of land, of average quality, for a vineyard, at $60 per acre, situated in about the center of the valley. Mr. Wm. Prince has a finely improved farm of 420 acres, which he holds at $27,000. He has some fine Devon cattle of nearly pure blood, numbering about 50 head that are beauties to behold. Mr. Prince is a very thorough and practical farmer. His place is kept in fine order, and whatever he does is well done. Messrs. Majors and Dorman own a large farm here, and also one in Diablo valley. They raised 1,900 acres of grain last year, but the crop was not an average one. They have been very successful grain raisers for over 25 years. As you go towards Walnut Creek to the west, you pass the large farm of Wm. Rice. Mr. Rice is a shrewd, practical farmer, and has made money, both by live stock and by farming. His income from his farm is said to be from $8,000 to $10,000 per annum.

The village of Walnut Creek is but a short distance from Pacheco Valley, and is situated on the road to Oakland, at the junction of the Pacheco, La Fayette and San Ramon roads. It is a flourishing village and the center of trade for these valleys. The people are in expectation of a railroad from Oakland which will pass here and up the San Ramon valley. Of this I may speak at another time more fully. Crops are looking well all through this section of country. C. E. W.

HORTICULTURE.

Strawberries in Santa Clara.

The following was read at the last meeting of the California State Horticultural Society:

E. J. Wickson, Secretary State Horticultural Society:—Your call for late experiences and observations relating to small fruits is received. I am sorry that I am unable to exhibit specimens of fruits and make illustrations of the comparative merits of strawberries, which are usually abundant at this season of the year. The continued cold weather, as you are aware, has made this a late season, and it is a matter of interest to know what effect so late a season will have on the quantity of fruit to be expected, as well as the returns, in coin, to the fruit grower.

As a general thing, the cold weather not only made a late season, but kept the fruit back from blossoming, so that there has been less injury from spring frosts than usual. This is a good thing for the plants in starting the season. Last year the reverse was the case. When the fruit was well set, a succession of late frosts so thinned it out as to make it a late season; but there was a continuation of fruit settings, which lasted throughout the year, and this continued fruiting naturally taxed the vitality of the plants. The present season has, according to this view, been favorable for renewing the vigor of the plants, and prepared them for a good showing the present season. And although the crop now formed is not generally heavy, it is up to the common average, and the fruit ought to be of good quality, coming on, as it will, in warm weather. It is reasonable to expect, that when the present crop passes off, it will be followed by another distinct crop; and as some plantations are later than others, they will naturally fill in the space between the first and second crops of the earlier plantations, and thus prolong the berry season. But a very heavy crop at any one time is hardly to be expected, such as to overstock the market.

Last Year's Experiences.

Generally speaking, last year was a remunerative one for the small fruit grower. The new canning establishments called for an increased supply of all material for canning, and an additional demand was thereby created for berries of all kinds. The blackberry crop was especially satisfactory, and this season it has been difficult to obtain the needed plants even from the East. A neighbor of mine succeeded in obtaining enough for 40 acres, late in the season, which he planted out. Strawberry plants have been scarcer than usual. The runners start out for plants after the first crop of berries passes off; and as there was no well-defined first crop last year, but few plants were grown. Still the stock was carefully saved and all planted, which in time will come into full bearing. It is remarkable that the first fruit of the season was from some of these young plants. The season being backward for the old plants, the younger ones chanced to take the lead, and may find their place in the background next year.

Last year there was a scarcity of help in the picking season, as many of the hands were lured off to work on the railroads. Unless there shall be a loss by destruction of fruit for the want of needed help in picking time, it is believed that this will be a fair average year for the producer, and that the markets will be reasonably supplied this season. On the other hand, with a late crop to start with, which may pass off suddenly during the expected hot weather, the canners, at least in this case, would be disappointed, while there might be quantities of berries wasted on the vines.

Varieties of Strawberries.

As regards the varieties best to cultivate for market, I have but little light to throw on the subject. I would not change the merits of kinds which I indicated in a paper read before the society late last season, only to say, that in the hurry in which it was prepared and produced in type, injustice was done to the "Forest Rose" variety. It does not droop with its fruit to the ground but has the special merit of holding up its head and fruit as well.

The Longworth Prolific still maintains its claim on heavy, irrigated land, and is the leading variety for market. The Monarch of the West, Triumph de Gand and Sharpless are all favorites in localities where the soil has suitable drainage. These root deep, and their roots soon die in our heavy soil. Still, if planted on high ridges, and the water is used sparingly, they may last a few years, and be highly prized for home use, if not for market purposes. Captain Jack and Forest Rose are moderate-sized berries, of good quality and firm appearance, and do well on the heavy land. Colonel Cheney is large and glossy; it is a nice-looking berry when freshly picked, and might be added to the home list, but it soon loses its luster and becomes soft. Longfellow is claimed to do well on light soil. The Bidwell is the most promising of the new kinds tried last year. The plant is the most vigorous, having long stalks and large leaves and blossoms. It may be classed with Monarch, Sharpless and Triumph in this respect. I have this season counted 11 petals on a plant of the Sharpless, while five is the usual number on most of the older kinds.

All the large new varieties appear in their blossoms as if endeavoring to become "sports," and when the berry develops, it is inclined to become flat, knobby, or otherwise uneven in shape, in its efforts to become double. How to account for this extraordinary development in these varieties is an interesting question. Of course, soil, climate and other conditions have much to do with this development; but the primary cause appears to be traced to the blending of different varieties, which is a subject worth pursuing. I. A. WILCOX.

Santa Clara, April 25, 1882.

Orchards for Sentiment or Sustenance?

EDITORS PRESS:—That the esthetics of the "Home Circle" may not think me too utterly beyond the pale of sensibility, or too entirely oblivious of all claims of "culchaw," excepting that of the verdant and valuable potato, let me here make public affidavit that, when the Oscar Wilde mania raged in this State, the classic sunflower not being at the time available, my somber coat of Petersham was adorned with a huge, glowing button-hole bouquet of the ardent and esthetic eschscholtzia (California poppy), to display to the citizens of Monterey that I was not unmindful of the advent of the self-commissioned apostle of "culchaw." (By the by, Ah! how lovely the Pacific coast is now, with its sheets of flaming eschscholtzias, its grassy glades and growing pines.) It may not be beside the mark to mention that the said apostle turned out, according to newspaper report—a very catch-penny, Brummagem burlesque of the noble Ruskin. What synopses of the apostle's lectures came to your correspondent's hands were just Ruskin rehashed, with lots of water; or, shall we call it an Irish stew —the meat furnished by Ruskin, the mess mixed and flavored with the conceit of Wilde.

This much of apologetic preface that your readers may not regard me as a monster, with no ear for melody and no heart for mirth, when I proceed to advocate the wholesale slaughter of frugivorous birds. Delightsome, truly, are the wild woodland notes of mellifluous warblers! But when the highwayman demands my purse, I am indifferent to the rich baritone of his voice. His unwelcome presence and errand make his sweet voice grate on my ear and jar my nerves.

The vast majority of California fruit growers planted orchards to sustain their families, not to sustain predatory hordes of singing birds. What singing orchardists can afford they prefer to have supplied by caged birds, whose notes are every whit as sweet as "woodland wild" notes, except it be to the over-romantic. Romance, in this connection, is too expensive for the ordinary farmer.

It is no question of leaving the dear little creatures a few ripe cherries. Gladly would hundred weights be allowed them. But its just a question whether the farmer is to harvest his crop of cherries, plums, apricots, peaches, etc., or whether the birds are to ruin it. My orchard consists of some hundreds of trees, and I had difficulty last year in getting a really ripe cherry, apricot, plum or peach.

Again, if sentiment would spare the dear little birds, what size does sentiment appropriate as its peculiar care? Could any esthetic farmer have the heart to destroy the downy, plump-breasted wild goose, which, darkening the air in flights of artistic design, joyously emits its sonorous "honk," the basso-profundo of feathered singers, even though his grain fields were nightly devastated by their ravages? Or could any groveling chicken rancher presume to level his gun at the agile falcon, careering in graceful curves over some juicy broilers, and uttering its romantic scream in glad anticipation? But, passing by the question of sentiment, we are told that to slaughter these linnets, etc., is suicidal policy—that in our ignorance we are killing our best friends; that but for the birds, our orchards would be overrun with all kinds of pesky insects. Now, Messrs. Editors, this talk seems, in the face of events, a little thin. The birds have had a very fair show to prove their usefulness, and have notably failed. Why have not they cleaned up the scale bug, the codlin moth, the cut-worm, the aphis, and the thousand and one lice and bugs that the farmer numbers among his foes? They have gone for our fruit instead, and left us in the lurch to fight our own battles with potash, kerosene, whale-oil soap and batteries of spraying pumps and syringes.

Is this what the sentimentalists uphold as grateful behavior? We kill off the skunks, coyotes, hawks, cats and all their natural enemies; we furnish them with banquets of luscious fruits in endless variety, thus enabling them to multiply and possess the land; and we are left to fight our own battles, and rewarded with an "old song."

So I favor an immediate slaughter. Shot-gun, trap, poison; poison, trap, shot-gun until the race is about extinct. There will be lots of song-birds left when these fruit-eaters are no more; notably the meadow lark, whose notes, though few, are among the sweetest in this valley. If the warblers will only keep ther woodland music to the woodland I'll be as gushing as any one; but if they will meddle with my orchards, they must pay the penalty. I can't pay my cobbler or tailor with my sweet chin-music, and I don't feel repaid for the loss of my fruit by any quantity of chirping and trilling and twittering. *Fiat justitia.*

EDWARD BERWICK.

Carmel Valley, Monterey, April 20, 1882.

THE STABLE.

Bots in the Horse.

A late number of the Chico *Record* contained the following: "John Garner, who resides five miles north of Chico, has recently lost five valuable horses. The animals apparently became crazed before dying. The last one of the five died this morning, and James M. Decker and C. L. Nelson dissected the animal with a view of ascertaining the cause of its death. Its brain was found all right, but when they came to the stomach, they found it half eaten away, while that and the alimentary canal were filled with bots. The animals had been running out to pasture. The information thus gained may be made available in saving the lives of valuable horses. There is no doubt but that bots caused the death of Mr. Garner's animals."

This intelligence is of importance to horsemen and veterinary surgeons. It has long been a matter of dispute as to whether bots ever cause death. A number of distinguished English veterinary surgeons—notably Mayhew—have held that bots do little injury, and have ridiculed as a popular delusion the belief that the presence of the parasites could ever be attended with fatal results. The death of Mr. Garner's five horses seems to have been unquestionably due to bots, and a vexed question has thus been conclusively settled, if indeed the annals of equine anatomy had not already disposed of it.

Anatomical preparations, showing portions of the stomach and intestines apparently perforated by bots, are to be found in the veterinary colleges of England. But a number of the most intelligent writers on the disease of the horse, have held that bots never eat holes in the viscera of a living horse; that if the bots ever eat holes it is in attempting to escape from the animal after its death, and finally, as a conclusive argument, that the bot has no apparatus by which it can gnaw holes through anything. The natural history of the insect helps to support this view, as it fails to suggest any motive that a bot could have for perforating the stomach of its host.

Bots are the larvæ of the bot-fly, a large waspish insect commonly found in horse pastures during the grazing season. The female fly deposits her eggs upon the hairs about the lips, shoulders, breast and legs of the horse. These nits are yellow, and adhere to the hair by means of a viscid secretion surrounding them. Hundreds of nits may often be seen on a horse that has been out to pasture for a few weeks. The insect, in the act of depositing the egg, stings or irritates the horse, so that the animal rubs the place of deposit with his lips, or licks it with his tongue. In this way the nits become detached from the hair, and are conveyed to the animal's mouth, whence, with the food, they pass on to the stomach. There they develop into the larva state, somewhat resembling sheep ticks at this stage of their growth. They are now "bots," and by means of two hooks which grow upon the head they take a firm hold upon the lining of the stomach. In this situation they remain a year, feeding upon the blood of their host. At the end of a year they relax their hold, are voided from the body with the excrement. In another month the bots have developed into flies, and their last stage of existence has been reached.

It is evident from the foregoing sketch of the natural history of the bot, that if it ever destroys the stomach of the horse, such a proceeding upon its part is unusual. It is obviously not the mission of the parasite to kill its patron. By destroying the stomach, and so killing the horse, the bot is sure to cut short its own existence, for having no organs of locomotion and thus no means of escape, it must die with its victim. But it does not follow that bots, which nature evidently intended to be comparatively harmless parasites, may not sometimes cause death by taxing too much the generous hospitality of the horse, and feeding in too great numbers upon the noble animal. The death of Mr. Garner's horses was probably due to the excessive number rather than to the nature of the operations of the bots.

There is no remedy for bots. Many so-called remedies are in use among horsemen and by ignorant horse doctors, but all are worse than useless. Any remedy powerful enough to cause the parasite to let go its hold upon the stomach is also strong enough to cause the horse to give up his hold upon existence. Bots will live a long time in alcohol and in turpentine. They very seldom do any harm, and in nine cases out of ten the ailment supposed to be "bots" is something else. The fact that bots may cause serious mischief and perhaps death should, however, induce owners of valuable horses to be careful not to expose them too much to the attacks of the bot-fly. "Fresh fields and pastures new" will obviously secure to the horse a comparative immunity from attack. When the nits are noticed upon the hair in considerable numbers, they should be shaved or scraped off.

OXYGEN AND CONSCIOUSNESS.—Brown-Sequard, according to Dr. Luys, once injected the head of a dog, when separated from the trunk, with defibrinated and oxygenated blood, and at the moment when the injection of this blood had recalled the manifestations of life he called the dog by his name. The eyes of the head thus separated from the trunk turned toward him, as if the voice of the master had still been heard and recognized.

PATRONS OF HUSBANDRY.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully solicited for this department.

Union Grange Meeting at Santa Rosa.

At Santa Rosa, on Saturday last, there was held a union Grange meeting which was important and enjoyable. The *Republican* of Monday gives the following outline of the meeting and exercises: In the afternoon the meeting was open to all farmers who chose to attend. Daniel Flint, Grand Master of the State Grange, was present and gave encouraging reports of various Granges in Sacramento and Sutter counties, and referred briefly to the National Grange held in Washington last October, where he represented California.

S. T. Coulter, of Santa Rosa Grange, said that when the organization first started it was charged by its enemies that it was a political organization, and he admitted that at this time it had something to do with politics. Candidates for public office must declare their opinion on the debris question to get the Grangers' votes, and politicians would need to shape their course accordingly, not as they work to obtain the Irish vote, or the German vote, or the whisky vote.

Wm. T. Allen, of Healdsburg, spoke of the social advantages the Grange offers to farmers and their families. I. De Turk addressed the members on the evils of the present jury system, saying that an ignorant juror is accepted, and an intelligent man who reads the papers is rejected.

J. G. Heald, of Cloverdale, alluded to the unjust portion of taxes borne by the farmer, which corporations escape so easily; and thought that 60 cents on $100 for county, and 40 cents for State purposes sufficient for all demands. Salaries of officials of all grades are too high, burdening the taxpayer in order to support a class of men in stylish living. He urged that farmers be chosen for office. Let the office seek the man, and not the man the office; and pledged his influence for candidates in favor of economy in public affairs.

Mr. Coulter hoped to see the day when Railroad Commissioners would view the rights of the public as favorably as those of monopolists.

E. W. Davis did not relish paying his share of taxes for brush dams in other parts of the State, and did not care who knew it.

John Adams took the ground that nature was, in a large measure responsible for the filling up of rivers, but granted that hydraulic mining had increased the amount of deposit.

Short, pointed speeches were made by Nelson Carr, Mr. Rector, G. N. Whittaker, James Fulton, R. A. Temple, T. L. Thompson, and others.

C. H. Cooley and J. G. Heald represented Cloverdale Grange; Mr. and Mrs. W. T. Allen, Healdsburg, and Two Rock sent Mr. and Mrs. John Freeman, S. Church and Mr. and Mrs. J. C. Purvine.

A choir of good singers furnished music, thus adding variety to the proceedings.

About 60 members and representatives of the press were present. Two long tables loaded with delicacies were spread in the ante-room, under the care of the lady members of the Santa Rosa and Bennett Valley Granges. There was coffee, tea, rolls, fowls, roasts, salads, jellies, pickles, cakes handsomely decorated (one beautifully trimmed with symbols of the Order by Mrs. John Peterson), pies, pork and beans for the State Lecturer, and apples and oranges. It was a friendly meeting of thoughtful men and women, enlivened by a little music, a good lunch and some unpretending, sensible speeches about practical matters of everyday life. The women were invited to participate, and Mrs. Nelson Carr chatted about the organization of the Grange, when she was the first woman admitted to it here.

The following resolutions, which had been adopted by Santa Rosa Grange, on the 22d, were read and endorsed, viz:

Resolved, That we do most heartily endorse the action of the Executive Committee of California State Grange on the subject of mining debris.

Resolved, Further, that we will not support, directly or indirectly, any man, for any office, who does not pledge himself, in unequivocal terms, on the subject of mining debris; and promise that, if elected, he will not squander the people's money on brush dams and other devices that only mean delay.

Resolved, First, in our judgement, the only reliable security against the evil inflicted on agriculture and commerce by hydraulic mining, is to prohibit all persons from polluting the waters of this State, or causing their pollution, by or with any deposit or debris, the tendency of which is to injure either of said pursuits.

Resolved, That it ought to be the unalterable purpose of the members of our Order to continue a warfare against this monster evil until it ceases to be a trespasser on the rights of others. And, to this end, we demand that all aspirants for official position be pledged to the enactment and enforcement of laws requiring each one to do his share as not to injure another.

NATIONAL RANCH FRUITS.—We lately received and shared with appreciative friends a box of fine semi-tropical fruits, raisins, etc., sent to us by Sister Flora M. Kimball, of National ranch, San Diego. The samples were very creditable to the growers and their lands.

GRANGERS' BUSINESS ASSOCIATION.—Dr. Thos. Flint succeeded Amos Adams as Manager of the Grangers' Business Association, Mr. A. J. Coffee assuming the position of Assistant Business Manager.

The Granges and the Debris.

The following important address has been issued to the subordinate Granges by the Master of Yuba City Grange, whose name is signed thereto. It is certainly advisable that all the Granges should comply with the request. The debris question is becoming more and more absorbing as its wide-reaching injuries are becoming better understood. The miners have great resources, and are marshaling all influences which they can capture. The farmers should not sleep while the menace of destruction overhangs our farming lands, our rivers and harbor, and the future prosperity of our State. We commend the following to general attention:

YUBA CITY, April 15, 1882

Brethren: At the semi-annual meeting of the Executive Committee of the State Grange, held April 5, 1882, the following resolution was unanimously adopted

Resolved, By the Executive Committee, California State Grange, that subordinate Granges should express their views on the question of hydraulic mining. We believe that the members of our Order should not support any man for State or county office who is not pledged to the protection of the agricultural lands of the State against the flow of hydraulic mining debris.

During the past 20 years, dating from the time the "Monitors" and "Little Giants" came into general use among the hydraulic miners, there has been irrevocably destroyed not less than 50,000 acres of the very best agricultural lands in the Sacramento valley, and fully as much more has been rendered almost valueless, and millions more are threatened with destruction from the same source. We are heavily pressed by taxation to build levees and to defend our homes by means of lawsuits, yet we do not desire to add to the heavy burden of your taxation: we do not desire to appeal to you for financial aid, but we do most earnestly ask your moral support in our endeavors to protect our homes, our lands, and the great wheat-producing area of California. To do this, we ask that you watch the primaries, see that right men are sent to the county and State conventions, and that the interests of agriculture are represented in the coming Legislature.

Please send us the names and addresses of prominent men in all political parties, that we may send them documents and data, so that they may better understand our situation. Especially do we desire the addresses of delegates to the State conventions of all political parties. Please see that they are sent us. Yours, fraternally,

GEORGE OHLEYER.

Action by Enterprise Grange Reunion.

The following preamble and resolutions were adopted at the Grange reunion at Enterprise last week:

WHEREAS, The business of hydraulic mining, as at present conducted (by using the State's river channels as easements), is destructive of the best interests of the State, and if continued will render our rivers unnavigable and destroy the homes of thousands of our people, and in the destruction of our rivers will turn all our products from the rivers to the railroads; therefore, be it

Resolved, That it is the duty of the State to preserve her river channels, to stop the usurpation by the hydraulic mining interest of the channels of our rivers as escapements for their tailings.

Pescadero Grange.

EDITORS PRESS:—Please give notice through the PRESS of a meeting of Pescadero Grange, to be held on Saturday, May 13th, at which time the Worthy State Master will be expected here. There will be a closed meeting at 10 o'clock A. M., after which there will be a feast. Patrons are cordially invited to be present. At 2 o'clock P. M. there will be an open meeting, to which all are invited to attend. E. LEIGHTON.

Pescadero, April 29th.

GRANGE REUNIONS.—We learn that Point of Timber Grange will have an anniversary celebration on May 24th. It will be the ninth birthday of the Grange, and preparations are already under way for a notable occasion. In the afternoon there will be a Grange meeting, with the pleasant accompaniment of a harvest feast. In the evening there will be an open meeting, at which an address will be delivered by the W. M. of the State Grange, to be followed by other literary exercises, in which the young people will take part, and scenic effects will be arranged by characteristic and original tableaux. The Point of Timber Grangers are awake to the social benefits of the Order, and propose to enjoy them to the utmost. It is a wise thing to do.

DISTRICT LECTURERS.—The following is a list of District Lecturers appointed by W. M., Daniel Flint, up to date: N. Mertes, for Placer county; B. R. Spilman, for Sutter county; Geo. Rich, for Sacramento county; Wm. G. Phelps, for San Joaquin county; Joel Russell, for Alameda county; E. T. Blackmer, for San Diego county; A. A. Bayley for El Dorado county; I. C. Steele, for San Mateo county; S. T. Coulter, for Sonoma county; Chas. Wood, for Contra Costa county; Reuben M. Ford, for Amador county.

GRAIN GROWERS' MEETING.—A dispatch from Stockton, May 2d, says: A meeting of the Grain Growers Association of California was held in this city to-day, for the purpose of perfecting the organization. H. M. La Rue, of Sacramento, presided and J. W. McCarthy, of Modesto, was elected Secretary. There were but 13 representatives present and the Association adjourned *sine die*, without transacting any business of importance.

GRANGE WORK.—Sister W. D. Ashley, of Stockton Grange, in the course of a letter to the editor, makes this wise remark: "Our Grange is spirited, well attended, and thinks our Hon. Bro. Myers right in saying that our Grange and all others depend for permanence on the work done and the learning gained within themselves about things pertaining to common life."

The Railways and Their Taxes.

It may be cold comfort to know that the California railways are no worse than those of other States in their efforts to avoid the payment of just taxes upon their property, but such is the case. It is also of interest that in other States, as well as here, strong efforts are being made to force the corporations to shoulder their just share of the burdens of Government. The *Grange Bulletin* says: In a late suit, in which the State of Pennsylvania attempted to collect taxes from the Standard Oil company, from the lawyers on the defense we glean some points as to how great railway corporations are evading taxation. It was developed that the Atlantic and Great Western railway has escaped all taxation for several years, also the Delaware and Hudson Canal company and other large corporations. The Erie railway got a special act passed, and although it was only asked to pay a tax on the proportion of its road in the State, it has defeated the commonwealth in an attempt to collect the amount. The Auditor-General has the power to tax companies about what he likes. When the Standard is asked to pay on its whole capital, the Western Union is only taxed an one-thirty-seventh part of its capital. In this way great favors can be extended to certain corporations. A demand has been made on the Pullman Car company for back taxes and penalties since the passage of the act. Since 1868 only $550,000 of its capital stock has been taxed. A similar demand has been made on the Wagner company. The American Meter company, a foreign corporation, is asked for taxes and penalties on four-ninths of its capital stock since 1868.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA.

CROP NOTES.—*Times*, Apr. 29: The good crop prospects for this season have sent the farmers into a state of supreme happiness. The prospects throughout this county are exceedingly encouraging, and present indications of a plentiful harvest. The principal crops will be hay, grain and fruit. Early in the year the farmers felt very despondent and scarcely hoped for half a crop; the season had been backward, very little rain had fallen and each rainfall had been succeeded by bitterly cold north winds and keen frosts; but the rains which came later, and at such fortunate intervals, have insured a full average crop. The grain is looking particularly fine and healthy, in spite of the more than average prevalence of mustard upon some lands, and the ear is already beginning to develop. Hay will yield a heavy crop, present appearances indicating that it will even exceed the splendid crop of last season. Some of the farmers are yet busy plowing for late crops, and the work will probably not be through until nearly the end of May. It is generally thought that the acreage to cereals this year will be less than that of last year, for the reason that in many of the sections of the county of Alameda, where grain and hay have been the regular crops, the farmers have entered largely into orchard and vineyard planting. This is particularly noticeable in and around Haywards, where experiments have convinced the farmers and orchardists that soil and climate are peculiarly adapted to the cultivation of fruit of all kinds. Several new orchards have been planted during the past year in that section, and as the land so planted has hitherto been devoted to the raising of hay and grain, these crops will naturally be less in bulk than they were last year. The area in grain in and around Livermore is said to be greater this year than any previous year, and the prospects for heavy crops never better. The area sown to wheat and barley will aggregate 60,000 acres. The sowing season was unusually favorable, allowing the farmers to carry out their newly-conceived ideas of thorough preparation of the soil. The result is clearly apparent in an unusual absence of weeds, and a greatly improved stand of grain. With late showers summer-fallow wheat will give an average yield of a ton to the acre, and winter-sown from 10 to 18 centals. Owing to lack of early rains, the volunteer hay crop will be very short, though of excellent quality, as usual. Thirty new vineyards, aggregating 1,200 acres were planted near this place this spring, mostly on red clay and gravelly soils. The showers which have fallen during the present month have done an incalculable amount of good, the farmers are jubilant over their prospects, and there is every reason why the harvest this year should be among the largest and best on record. The fruit growers are so greatly pleased with the results of their experiments that it is probable orchards and vineyards will eventually supersede all other crops in this section of the county. It is all the more probable because of the demand for all the fruits that can be raised, both for home markets and for canning purposes, and the apparent impossibility of the market being overstocked. W. H. Jessup, of Haywards, gives it as his opinion that the fruit crop never promised to be larger at this season of the year. His views are entertained by all the orchardists of the township. Nothing but an accident can prevent the maturity of the crop.

COLUSA.

CROPS.—*Sun:* For the plains from Williams to Willows all hope seems to be entirely abandoned. Much of the late grain above Colusa, on both sides of the river, shows signs of weakening. From the extreme upper end of the county come more favorable reports, but even there, nothing like a full crop is claimed by anyone. The crops on Upper Stony creek and Bear valley are fair—not large. From Williams down there are some crops on the plains, but they are spotted. On the tules the crops are immense, and Grand Island will have more grain than ever before. In the northwestern corner of the county, around the Newville country, the summer-fallow looks fine, but much of the winter-sowed grain does not yet cover the ground.

KERN.

CROPS.—*Californian*, April 29: The crops throughout the county will this year be remarkably good, with the exception of some part of the desert reclaimed by the Calloway canal. The partial failure there is due to the fact that the severe cold which prevailed in the mountains during the winter and spring detained the usual supply of water in the embraces of the frost until a month later than usual. But it is not too late for alfalfa and summer crops. In Linn's valley, Tehachipa and other parts of the mountains, the season is the best for several years, and the crop prospects are corresponding.

LOS ANGELES.

CROPS.—Los Angeles *Mirror*, April 29: The weather of the past two weeks developed the fact that there was not moisture enough in mother earth to make a first-rate crop of the late-sown grain. Therefore, there will be something of a shrinkage in the quantity anticipated. Under the influence of the outlook, barley has an upward tendency, and will doubtless remain at stiff figures until the new crop begins to come in.

MENDOCINO.

NOTES.—Covelo Cor. *Dispatch:* Many of our principal wool growers are preparing to shear, and if the weather permits they will be busy by the 1st of May. After diligent inquiry I have failed to find one of the citizens of this valley who thinks it wise, useful or necessary to construct a trail from this place to Long valley or Cahto. All with whom I have consulted oppose the expenditure, but think that the Supervisors would do well to expend that amount of money on a much-needed wagon road between these two points yearly, and in time give us connection with the coast from which to draw our lumber, and also where we could find a good market for our large supply of grain, fruit and vegetables, as well as the large amount of beef and pork produced in this valley. At present we are compelled to haul lumber from Little Lake, some 75 miles, making rough lumber cost, when delivered, about $30 per thousand. There is at present some agitation regarding a road to Willows, and with a good deal of reason. First, it would be no farther to freight than to Cloverdale, and on delivering our wool there it would be placed on the cars and shipped to the East without rehandling, whereas if shipped to Cloverdale it must be handled several times—from the cars to the boat, from the boat to the dray, from the dray to the warehouse, and finally from the warehouse to the overland car—saving to the producer all this expense, and besides opening this valley up to a large travel from the Sacramento valley. I am impressed with the importance of a wagon road to Cahto, and believe it would do away, to a great extent, with the desire for a road to Willows.

NAPA.

THE FRUIT INTEREST.—*Reporter*, Apr. 27: It seems highly probable with the establishment of canneries in the many fruit growing regions of California, and the Eastern demand for California pears, grapes and oranges, that a new impetus will be given to the orchard culture. Canneries will open up a market for orchard fruits that has not existed heretofore: and this is a class of business that cannot be overdone, when it is considered how extensive is the demand on shipboard and for foreign exportation. In view of a brighter outlook than has existed for a few years past, there has probably been twice or perhaps three times as many fruit trees and grape cuttings put out so far this year as in any previous year of the State's history. No matter how extensive the crop of fruit may be in the future, with the present facilities for transportation and the present understanding of the methods of curing and canning, there need be no fear of exceeding the market. Napa valley has lands as finely adapted to apple, peach and pear growing as any other section of the State, and orchardists have had years of experience in which to determine what particular varieties of fruit will do well, so that they can put out orchards with a certain promise of not wasting years of labor in raising trees whose fruit blossoms are annually nipped by early frosts. The mountain terraces are adapted to the raising of hardy, keeping varieties of apples, and late winter fruit brings a good price, not only at San Francisco, but also in the vicinity of its production.

GRAPES.—St. Helena *Star:* The late rains, although not urgently needed in this section of Napa valley, have been productive of an immense amount of good, especially on vineyards where work has been unavoidably delayed by the scarcity of labor. The frost as yet has not been productive of any serious injury to the

vines of this vicinity, and there is every indication that the general fruit product of the valley, the coming season, will be better than it has been for many years.

NOTES.—Pine Station Cor. St. Helena *Star:* Crops look well about here, and fruit prospects were never better. Almonds, apricots, plums and peaches are all full, and the prune trees are immensely loaded. Farmers are getting along nicely with their spring work. The cool weather keeps grapes back, though they are generally out and prospects are good for a heavy crop. Barley is beginning to head; also oats. The ground is in excellent condition for work, and we are pushing it forward with success, and with hearts set on a booming crop of all kinds of fruit, grain and hay. There are a goodly number of young vines put out. I cannot, at present, tell how many; but will, at some future time, try to give you the number set this season. The young vines that were set early are already leafing out.

SAN BENITO.

REVIEW OF THE COUNTY.—Hollister *Advance*, April 28: A careful canvass of the entire county shows that the acreage seeded to grain is about from two-thirds to three-fourths as large as it was last year. About three-fourths of this, and perhaps a little more, is sown to wheat, the balance to barley. Early-sown grain, owing to cold weather, frost and drouth, is generally backward, and is in no better condition than that sown in February and the early part of March. Taking last year's yield as a standard, it may safely be estimated that but little more than half of a crop of wheat and barley will be harvested in this county this fall. Throughout the entire county more rain is needed. The subject of the hay crop is just now one on which there is considerable comment. Farmers are now debating whether it is advisable to be content with a very small hay crop or whether to cut wheat for hay. The latter plan seems to be the best one. It is now a conceded fact that the wild-oat crop is a failure. In this county there is less old hay today than there has been for years; the same may also be said with regard to all other portions of the State. Advices from all localities state that the hay crop will be very light. Watsonville and Santa Cruz are dependent upon "Hollister hay" almost entirely for the coming season. Monterey, Castroville, Salinas, and all that section will also draw largely from our coming crop. During the past season the demand from these places has been very large (so much so that it has almost exhausted our supply), and without doubt it will be much larger this season. At the present time sheep shearing is going on extensively, and an increased activity in the wool market is noticeable. Already we note that dealers are canvassing the country and making contracts with sheep men for their wool yields. The yield of the year cannot now be given with anything like accuracy. The decimation of the sheep of this section by short feed and the drouth scare, which sent large bands out of the county, will reduce our wool yield to considerable below the average. We have conversed with several wool growers and dealers, and, from the varying opinions expressed, conclude that this year's product will be about from two-thirds to three-fourths of that of last year in quantity. Owing to the extreme cold weather of last winter, and backwardness of the feed, this will be a short season with dairymen. A leading dairyman thinks the yield of butter will be cut short at least one-third. Cows usually averaged 150 lbs. of butter in a season, but this year he thinks they will not average over 100 lbs. each. Without exception, the dairymen whom we have interviewed say the yield of butter and cheese will be much less than usual. During the previous years, considerable land has been sown to flax, but it has been demonstrated that this crop does not thrive well here, and farmers no longer attempt its cultivation. In the entire county, the land sown to flax will not amount to over 100 acres. Owing to the long continued drouth in the early part of the season, feed has been very backward. At present there is an abundance for all immediate demands, but from the outlook, stockmen will be very fortunate if they succeed in carrying their herds through until next winter without serious trouble. The fruit crop promises to be more than ordinarily good. The trees in this section have not been injured in the least by frost, and the outlook for all kinds of fruit is very favorable indeed.

SANTA CLARA.

LOS GATOS TO CENTERVILLE, ALAMEDA CO.—EDITORS PRESS:—I have just made the trip from Los Gatos to this place, and it was a continued source of pleasure to note the fine prospect all along the way. The crops of grain are looking finely, and the outlook is very promising. The fruit prospect could not be better. Each and every variety gives a promise of a harvest that will tell on many a bank account on the side of the grower; and so it should be. They have many and hard battles to fight ere they can realize from their efforts. Much is said about those who invest their money in preparing the fruit to be placed on the market by canning, or otherwise. For one, I say all praise to them. But they must take the second place to those who by patience and toil grow it; the weary waiting until an orchard or vineyard comes to bearing; the fight with innumerable insects that prey upon young trees and vines; the blighting winds and lack of rain; the growing weeds that must be subdued, make their life an anxious one, and pre-eminently so, for with failure on their part comes disaster to themselves, and a consequent languishing of business for all others. The agriculturist should receive a fairer share of encouragement in the way of support in point of values than he does. He takes chances on every side, and yet so many are ready to join the cry to cheapen his grain and fruits. It is not fair. To him who clears the land, and puts it to profitable uses, there should be given a generous support and fair prices. His capital and his energy are the springs upon which the great volume of commerce move.—CLAYTON.

SAN DIEGO.

BEES.—*Union*, April 27: "A singular disease has appeared among the bees in San Diego county. It seems to attack the strongest and best hives. The bees become sick and helpless, and are then dragged out of the hives by the well ones. They often lie on the ground an hour or more before dying. In one day as much as a gallon of dead bees will accumulate in front of a hive. When attacked with the disease, the bees draw themselves up, as if cramped, and are unable to use their wings." This item is going the rounds of the press. It is taken from a letter to the *Union*, from Campo, published several weeks ago. The disease spoken of was limited to a few apiaries in that immediate neighborhood, and appeared nowhere else in the county. It has disappeared from Campo, we are informed.

SONOMA.

COOLEY'S RANCH.—Cloverdale *Reveille:* The ranch of Chas. H. Cooley, in Oat valley, is recognized by the beautiful entrance, shaded by a double row of tall eucalyptus and fir trees, whose tops nearly meet, forming a canopy which is hardly broken for a quarter of a mile. Here is a seat of productiveness. On either side of this lane are seen fine fields of grain, and near the house begins the vineyard, which promises to envelop the whole ranch. We found John Cooley, engaged in setting out new vines, Zinfandel, and he gave the following points: In January he selected the cuttings, taking off every bud but the two top ones to prevent the lower buds forming suckers, and also where the bud has been cut roots are almost sure to form. Then he tied them up in small bundles, and buried them, head down, covering them up completely to throw the sap up into the root, which, upon being reversed when planted, assists the vine in rooting.

SAN MATEO.

PROSPECTS.—*Times and Gazette*, April 29: The crop prospect all over the county is said, by common consent, to be better than any year since '64. The hay crop for shipment is expected to be small, but an increased acreage in wheat and barley will make good that deficiency in our resources. As everybody knows, potatoes, once a favorite crop on the coast, have fallen into disrepute, and dairying, which has been found more remunerative, has been substituted. The culture of the vine in the slopes on this side of the mountains promises soon to be a profitable industry. Doubtless before many years, the vineyards of San Mateo will vie with the best viticultural regions of the State in the excellence of their wine products, though at present the sale of the grapes or the manufacture of raisins only is thought of. Other industries connected with the soil, apparently of minor importance, but all together going to make up the wealth of the county, such as apiculture and cheese manufacture, are being ventured into. The orchards also are in good condition. The fruit yield will probably be up to the average. On the whole, every report points to a bountiful harvest, money in circulation and prosperous times.

SOLANO.

BENECIA FARMS.—*New Era:* We took a tour through the farming district lying around Benecia the other day, and judging from appearances, everything looks well, the grain being in excellent condition and quite high. We noticed particularly the fields of Messrs. John O'Donell and J. W. Williams, which appeared to be about the best in the valley. The rain of Wednesday did a great deal of good, and with occasional showers from now on, the farmers will have one of the best seasons that could be wished for.

STANISLAUS.

CROPS.—Hill's Ferry Cor. Modesto *Herald*, April 27: Our crop prospects which had improved so much with the late rains, have been counteracted by heavy north winds, so that in reality nothing can be hoped for outside the irrigated district; and even on irrigated land the prospects are not so flattering, as the grain is very spotted. Some had to be sown twice to have any stand.

EARTH-TIDES.—A committee of the British Association is investigating the question of the existence of earth-tides, or of oscillations in the crust of the earth similar to those which are produced in the ocean by the attraction of the moon. A pendulum is so suspended that its slightest motion turns a mirror and causes a perceptible movement in the spot of light reflected by it upon a distant screen. The pendulum is proved to be continually changing its position, for the reflected light is in incessant motion, and so irregular that it is hardly possible to localize its mean position on the screen within five or six inches. Mr. W. Mattieu Williams has sugested that the constant movements of the microscopic bubbles imprisoned within the cavities of gems and minerals are due to the same cause.

A New Sun Engine.

Attempts have been made from time immemorial to convert the heat of the sun into a substitute for fuel, with varying results. Archimedes (who burned the Roman fleet which was blockading Syracuse, by a system of mirrors), Euclid, Hero, De Cans, Buffon, Ericsson, Muchot and others, have made experiments in the direction of utilizing the heat rays of the sun as a motor for industrial purposes; but all of the devices heretofore used, which have come under our observation, have been made after the same plan—*i. e.*, the reflectors are in the shape of inverted cones, or pyramids, or parabolic surfaces of revolution, with the boiler placed vertically in the axis of the reflector. Such constructions allow or permit only short and narrow surfaces of reflection, and the heat rays are thrown upon the boiler in concentric rings, or spots, a process quite limited in its practical application. No difficulty has been experienced in collecting and concentrating sufficient heat rays to generate steam, and a pressure of 7 to 9 atmospheres has been reached in from 30 to 60 minutes, giving from 1 to 3 H. P., and the well-known French engineer, Muchot, has succeeded in pumping water and performing other light work with an apparatus constructed on this plan, by solar force alone. But it is quite impossible to secure large and unintermittent power from devices of the form described above, which are necessarily small, for obvious reasons.

Gen. George W. Deitzler, of San Francisco, Cal., has just patented, through the Patent an improvement in solar reflectors and heat receivers, which promises very important results. This inventor has departed from the old style, Agency of the *Mining and Scientific Press*, and has adopted a reflector of parabolic section, which is placed horizontally, the lines of the reflecting surfaces being parallel to the axis of the boiler, which form of construction enables him to expose to the sun long and broad surfaces of reflection, within workable limits, and heat-tubes, or boilers of great length, the heat-rays being concentrated in long lines on the whole of the under line of the boiler, with great evenness, each section exposed receiving the same amount of heat, the action being very much like the flame of the furnace of the ordinary steam boiler. As there is no limit to the size of this reflector, there is none to the amount and intensity of the heat that can be produced, and consequently no limit to the force of the steam that can be generated. The cost of the reflecting surface and of the boiler is quite reasonable, and there is no mechanical difficulty in the construction and operation of this apparatus. The steam generated in the boiler is led by pipes to where it may be needed in the usual way. The apparatus is mounted and provided with special mechanism whereby the orientation, or setting to the east, of the apparatus is made to move with the apparent course of the sun, automatically, or otherwise. The inventor furnishes us the following additional information on this subject:

A small working machine of this description has been constructed, and gives admirable results, producing steam in 20 minutes, the water boiling violently in 30 minutes. There are many other purposes to which it can be applied besides driving steam machinery, such as roasting ores, distilling and rectifying spirits, etc., but it will be found particularly useful in our dry and hot valleys for pumping water, thrashing grain, etc. There are millions of acres of the finest land in the world in the San Joaquin and other valleys of California and Arizona, which land only needs to be "tickled with water to make it laugh with the harvest." Only a small part of this land can be irrigated by the usual methods, but water exists, in inexhaustible quantities, in most localities, at from 10 to 100 ft. from the surface. By driving a number of tube wells, say 15 ft. apart, and coupling them together at the tops and applying a sun engine, a supply of water can be obtained for irrigation and for cattle, which would raise the value of the land from $2 to $5, its present price, to $30 and $60 per acre, and fill these valleys with a prosperous and happy population. This is a phase of the solar engine business which should commend itself to the owners of the large ranches in the interior valleys, where the conditions are most favorable for the development of this enterprise. We are not unmindful of the objection that the solar rays are sometimes interrupted by clouds, and that at best such an engine would be available only in the day time, but we answer that in the summer time, during our rainless season, when their need would be greatest, the sky is seldom obscured by clouds (it has been demonstrated that occasional passing clouds have no perceptible effect on the apparatus), and the power of the engine could be used for compressing air or generating electricity, which might be stored, and the electricity or compressed air would serve to run the machinery in the night. In this way the cities on the plains could also be lighted by electricity at a minimum cost.

All know that the sun generates immense quantities of heat, and nothing is wanted to utilize such heat except an efficient apparatus for collecting the rays and concentrating them upon a smaller surface. It has been demonstrated by Ericsson, Muchot, and others that the heat of the sun, after absorption by our atmosphere, represents rather over one-horse power per square year, and that we get more heat (other things being equal) on a day in winter than in summer, for the sun is nearest to us in our northern winter.

In his very interesting address to the British Association, in 1881, Sir W. Armstrong, C. B., D. C. L., L. L. D., F. R. S., referring to the proposition of utilizing the solar rays for generating electricity for light and for motive power, said: "In our climate (England), it is true, we shall never be able to depend upon sunshine for power; nor need we repine on that account so long as we have the preserved sunbeams which we possess in the condensed and portable form of coal; but in regions more favored with sun and less favored with coal the case is different. The actual power of the sun is enormous, being computed to be equal to melting a crust of ice 103 ft. thick over the whole earth in a year. Within the tropics it would be a great deal more, but some deduction must be made for obsorption of heat by the atmosphere. Taking all things into account, however, we shall not be far from the truth in assuming the solar heat to be capable of melting annually, at the surface of the ground, a layer of ice 85 ft. thick. Now let us see what this means in mechanical effect. To melt one pound of ice requires 142'4 English units of heat which, multiplied by 772, gives us 109.032 foot-pounds as the mechanical equivalent of the heat consumed in melting one pound of ice. Hence we find that the solar heat, operating upon an area of one acre, would, if fully utilized, exert the amazing power of 4,000 horses acting for nearly nine hours every day.

In dealing with the sun's energy we could afford to be wasteful. Waste of coal means waste of money and permanent exhaustion of coal-beds. But the sun's heat is poured upon the earth in endless profusion—endless at all events in a practical sense—and we have, therefore, only to consider whether we can divert to our use so much of the sun's motive energy as will repay the cost of the necessary apparatus; and when such an apparatus is forthcoming we may expect to bring into subjection a very considerable proportion of the 4,000 invisible horses which science tells us are to be found in every acre of sun-kissed ground.

Professor Langley of the Alleghany, Pa., observatory, in closing an exhaustive report on the experiments of Ericsson and Muchot and the great need of a substitute for fuel, says:

"Engineers have done little to solve this important problem, which problem is purely mechanical, but we may be sure they will do more in the future, for the demand for motive power is rapidly increasing, and the supply of coal and wood is approaching exhaustion. Future ages, it has been truly said, may see the seat of empire transferred to regions of the earth now barren and desolated under great solar heat—countries which, for that very cause, will not improbably become the seat of mechanical and thence of political power. Whoever finds the way to make industrially useful the vast sun power now wasted will effect a greater change in men's affairs than any conquerer in history has done."

We have on this coast a vast field in which an apparatus for utilizing solar heat, as proposed, would be very useful and valuable.

CEMENTS.—The following observations upon cements may be found useful. It has been ascertained that cement that has been prepared by grinding with mill-stones has only half the firmness that it shows when ground in centrifugal machines. The difference is explained by the fact that the centrifugal mode of grinding yields a much more finely divided product, which increases the hardening quality of cement mixed with sand. Coarse sand gives the highest degree of solidity and firmness to cement. It is unnecessary, when coarse sand of one sized grain has been used with cement, to mix finer sand with it to fill up the interstices of the mixture, as other indifferent substances can be used with equally good results. Moist carbonic acid has been found to diminish the firmness of cement to a considerable degree, and in a short space of time. The great difficulty encountered in manufacturing marble imitations from cement, is to prevent the cracking of the latter. Cement cracks when it is made up with too much water. It then forms a vitreous crust, and is not homogeneous throughout its mass. By adding finelycrushed granite fragments to cement without sand, a material is obtained that has great hardness, and which is susceptible of taking a high polish.

ENSILAGE ON THE SACRAMENTO RIVER.—We learn from the *Record-Union* that it is the intention of farmers on the Sacramento river to give the matter of raising corn for fodder a thorough trial this year. Quite a number will also experiment in preserving the cornstalks in silos for feed to dairy cows. Should success attend their efforts in this direction, it will probably add materially to the future productiveness of the river lands subject to overflow to such an extent that alfalfa cannot be produced on them. it is believed that good crops of corn fodder can be raised on lands that can be planted in July. In this way it is believed that much of the tule lands can be rendered profitably productive. Mounds will be raised upon which to locate and erect the silos, so as to have them at all times above high water. We look forward to the outcome of these proposed experiments with a considerable interest, and no small degree of faith that they may be made successful.

The Death of Ceres.

Written for the Rural Press by E. L.

Beautiful maiden lying low,
Laving your feet in the waters flow;
With the fleecy sheep across your breast,
With the swaying grass in grassy quest,
Worshipful maiden, warm-souled and true,
Yielding your heart to the rain and dew,
Stirring your soul to the kisses of May,
Changing your shadows to mid-summer's day,
Bearing to Autumn your treasures of food,
Blessed by the Maker of all things good;
Maiden of Eden, along the stream,
Sorrow is treading your skirts of green.

Alas for the downs where cattle rove,
Alas for the vine-clad cot of love,
Alas for the wealth of field and town,
For the wide-mouthed serpent crawleth down.

Out of the heart of the belching mine
Springeth the foe of the grain and vine.
Steadily down on the burdened wave
Cometh the maker of Ceres' grave,
Beating and lashing, with muddy track,
The walls, strong built, to fetter him back,
For he yearns for the maiden lying low
Where the fruits of the loving seasons grow;
He grasps and strangles, with oozy hands,
The life of the wide-spread blooming lands.
Mourn, mourn, O men, for the spreading dearth!
Weep, weep, O soul, for the loves of earth!
The young men cease to woo and wed,
Ceres, the maid of the stream, is dead.

May is Here.

Written for the Rural Press by Mrs. W. D. Ashley.

Sweet May is here, with beauty fresh and blithe,
As though for us she ne'er had bloomed before,
Swift bounds the hare, with limbs so fleet and lithe,
Among the grass with dewdrops spangled o'er.

The heading grain, of suns and showers born,
In billows, swelling, answers to the breeze;
While near, vague whispers stir the broad-leaved corn,
And softly rustle in the great oak trees.

Low coos the dove, the lark's gay challenge rings,
The glowing sun, with brightness, gilds the hours,
The bee his honey sips, where fragrance springs
From blooming shrubs and opening flowers.

Blue are the skies, soft clouds float lightly there,
The mountains lie in distant, purple haze,
The gleaming fields through fresh'ning waves of air,
Stretch far; the valley hums with sounds of praise.

The frisking younglings skip with life and play;
Submissive to the farmer's practiced rein
The teams, with mowers, cut the scented hay,
While promise smiles in orchard and in grain.

Oh, evanescent May, that thralls the soul!
We love thy witching spell, thy beauty rare;
Yet, as thy plainer sisters onward roll,
We, higher look for beauty free from care.

Homes and Home Life.

[Written for the Press by Mrs. J. H. Smythe.]

Trifles make the sum of human life, and trifles make the comfort of a home. The sunbeam is composed of millions of minute rays, so home light must be constituted of little tendernesses, kindly looks and loving words. Good, kind words dropped in conversation may be little thought of, but they are like seeds of flowers, or of a fruitful tree falling by the wayside, borne by some birds afar, haply thereafter to fringe with beauty some barren mountain side, or to make glad some lonely wilderness. "The chief secret of comfort lies in not suffering trifles to vex one, and in prudently cultivating an undergrowth of small pleasures, since very great ones are let on long leases."

"Drops make the sea,
And petty cares and small events,
Small causes and small consequents,
Make up the sum for you and me.
Then, Oh for strength to meet the stings
That arm the points of little things!"

When tempted to scorn the little duties of life, let us remember such sayings as the following:

One day a visitor at Michael Angelo's studio remarked to that great artist, who had been describing certain finishing touches lately given the statue: "But these are only trifles!" "It may be so," replied the sculptor, "but recollect that trifles make perfection, and perfection is no trifle." In the same spirit the great French historical painter, Poussin, accounted for his reputation in these words: "Because I have neglected nothing." In early life we were taught by one of the best of mothers this maxim: "Whatever is worth doing at *all* is worth *well* doing."

A few days ago, I came across this little fable, written by an Eastern poet, which carries with it a beautiful and instructive moral. The poet, attracted by the fragrance of a clod of earth, asks: "Art thou musk?" "No." "Art thou amber?" It replied, "I am but common earth, but the rose grew from me; its beneficent virtue penetrated my nature; were it not for the rose I should be but common earth." As it was with the clod of earth, so it is with us. The heart that is cold and selfish, and glows not with a sympathetic desire to relieve the wants and soothe the sorrows of a fellow-being is but common earth; but every generous impulse, every pure desire, every deed of charity is a rose rooted in the heart, ever blooming, whose fragrant and beautiful flowers penetrate and permeate our nature with their rich and beautiful perfume. "What do we live for," says George Eliot, "if it is not to make life less difficult to each other?" A distinguished writer of our time says: "The grand essentials of happiness in the present life are something to do, something to love and something to hope for. We often spend a great deal of time bewailing grievances, which might be employed to much better advantage. There is a "luxury of woe" in which people indulge, which rarely benefits others or themselves. We do not mean sourness, grumbling or melancholy. It is not that; it is of those secret thoughts of the heart that we speak, which, like the dark outlines of a rock in the depth of a pool, lie only on the bottom and are entirely unseen on the surface. We ponder on our many trials, real or imaginary, forgetting at the same time the many blessings we enjoy. Nothing is so certain to bring genuine, happy smiles to our own faces as to watch them grow in those of others as the result of our sympathy, our gentle words or hopeful deeds. Who ever did a real kindness for another without feeling a warm glow of satisfaction creep into some shady corner of the heart, and fill it with sweetness and peace?

"God has written on the flowers that sweeten the air, on the breeze that rocks the flowers upon the stem, upon the raindrop that refreshes the sprig of moss that lifts its head in the desert, no less than upon the mighty sun that warms and cheers millions of creatures which live in its light—upon *all* His works He has written, 'None liveth for himself.'"

Work for Women.

The chief canker at the root of women's lives in the middle classes, which form the staple stock of the community, appears to me the want of something to do.

We do not believe that Providence ordained it that men should work and women should be idle. Boys leave school and strike out in life for themselves; the girls finish their education, come home and stay there, many of them. "Their whole energies are devoted to the massacre of old Time. They prick him to death with crochet and embroidery needles; strum him deaf with piano playing—not music; cut him up with morning visitors or leave his carcass in 10-minute parcels at every friend's house they can think of. Finally, they dance him defunct at all sorts of unnatural hours; and then, rejoicing in the excellent excuse, smother him in sleep for one-third of the following day. Thus he dies a slow, inoffensive, perfectly natural death; and they will never recognize his murder till, on the confines of this world or from the unknown shores of the next, the question meets them—What have you done with time? Time, the only mortal gift bestowed equally on every living soul, and excepting the soul, the only mortal loss which is wholly irretrievable."

Men are taught, as a matter of business, to recognize the value of time, to apportion and apply it; women rarely or never. Labor is worship, says the proverb; we would add, labor is happiness. We pity the woman, young or old, who boasts that she has nothing to do; what a waste of life, what a burden to herself, what a *living dead weight* to her father, brothers, or husband, if she has one. Labor is the great civilizer. It has civilized the world. What it has done for man, it will do for woman, when she will rise to the true dignity of womanhood. Only weak minds cling to inanity and worthlessness; only the parasites and drift-wood of society advocate the sin, sloth and degredation of idleness. Everything in the great realm of nature is permeated with the elixir of activity. The

Home Education of Girls

Is, as a general thing, entirely neglected. Indulgent mothers who have kept their daughters in school from earliest childhood, think it would be unkind to exact of them any useful employment during their vacation. It must all be devoted to relaxation and amusement, leaving the homely household duties, which would enable them to superintend intelligently and well homes of their own, to be learned after they have graduated. What a very grave mistake it is, if no part of their child-life is devoted to those lessons which none should be able to teach as thoroughly and patiently as a mother. Many young girls, after leaving school, enter at once into married life, and what is the result of the mother's mistaken kindness? The home which the lover dreamed of proves comfortless, and the young wife is too often transformed into the heartless devotee of fashion, instead of a companion and helpmeet. A girl marries early, thinking only how pleasant it will be to have a house of her own, but never once how difficult it will be to manage it. Perhaps she takes pride in her charming ignorance of common things. Thus she drifts on to middle age—a helpless, burdensome wife—a lazy, feeble and fretful mother. Woe to the household whose mistress is a foolish, ignorant and incapable woman.

There are those who consider it a positive disgrace to be detected performing any domestic service, when it ought to be considered as part of a sacred duty which without blame cannot be laid aside. If women took up the domestic duties so well understood by our great grandmothers, but now in the majority of cases laid aside, homes would be happier, and good health the rule and not the exception. True there is much that is hard and disagreeable in household cares and labors; but what good thing do we possess which has not required thought, effort, and often unpleasant labor before we came into the full possession and enjoyment of it? Young ladies would soon discover the richer life there is in one's own home, if they were early initiated into a thorough knowledge of the whole routine of home and household duties, so that when they shall have homes of their own, they can intelligently direct their servants, or if necessary, perform the household work themselves. There is no healthy thought without labor, and thought makes the labor happy. This maxim, old as creation, is worth remembering: "Be not the shrinking slave of toil, but its regal master," making whatever you do yield you its best fruits.

If young ladies knew how much influence a kitchen apron honestly worn has upon their gentlemen friends, they might be induced to add that very useful article of dress to their wardrobe. We could cite one or two instances where the wearer of such an apron, being surprised by an early morning call, secured to herself a sensible, good husband. No young man worth the having would think any less of a young lady, if he chanced to call when she was engaged in some domestic employment. It is only the wrongly educated and weak-minded who thinks her duties a disgrace, and frets under them, or shirks them if she can. We do not think that any kind of labor will make one less modest or ladylike. Even if it could be guaranteed that most young ladies would never be placed in positions where they might find it necessary to labor themselves to secure home comforts, or prepare food for their families, knowing how to do it well will do no harm; not knowing how may sometimes subject one to great discomforts and mortification.

It is not a sign of high birth or refinement to be ignorant and delicate. A distinguished writer of our time asserts that a wife who understands not the art of preparing her husband a comfortable dinner, enjoys the privileges of her wifehood by fraud. The Spartans educated both boys and girls to habits of usefulness; their standard of morals differed from ours; they knew or cared little for the doctrine of right and wrong as we understand it. Beauty and usefulness were the standards by which they judged everything. The youths were almost continually out of doors; every boy learned how to plant and to harvest the crops; every girl how to do household work. The highest lady in Sparta did menial work; every girl could do every kind of labor required in a Spartan home. Nothing came amiss to them; but their work was done principally in the open air, not over stoves and in heated apartments. Such a life produced the highest degree of health, and out of this health bubbled and blossomed a sweetness of temper which charmed all who came into contact with it. Their beauty was not of the kind which we usually admire; in them there could be no beauty unless it was founded on perfect health, and this beauty lasted until advanced age. Helen, celebrated in all times as being one of the most beautiful women in Greece, was as handsome at 50 as at 20; and this was almost the universal rule with all women. The Greek women were the finest that ever existed, not only physically, but intellectually. A race of such mothers could not fail to give birth to a noble race of men. Every healthy Spartan girl was obliged to marry; there was no excuse for them. Every sickly girl was obliged to abstain from marriage. Girls were not allowed to marry young; they had to mature first. No sickly young man could marry, but all healthy ones were compelled to do so; or if, perchance, they refused, they were punished. For 500 years there was produced in Greece a succession of the strongest and bravest men, and the most healthful and beautiful women that ever existed.

Every boy and girl should be taught the

Value of Money

From earliest youth by the earning of it. A wealthy lady of Oakland told me that her children earned all the spending money she allowed them to have, even the little ones. I was curious to know what they could do, and she told me they cut off all the old faded roses from the bushes and brought them to her, and she counted them and paid them a certain amount per dozen. Every girl should be taught to be self-supporting, for whatever her social or pecuniary position may be, she is liable at some time in her life to be thrown upon her own resources and the cold charities of the world, and this emergency should be provided for. Besides, the ordinary duties of life require that boys and girls be taught to work, whether their parents are wealthy or not. Public sentiment is greatly at fault in this matter, especially with reference to girls. Boys and girls both should be taught that any kind of work is honorable, and that idleness is dishonorable, and that it is the duty of every girl, as well as every boy, to learn how to earn a livelihood. Mothers of the present day bestow too large a proportion of thought and care in educating their daughters to shine in fashionable life—in giving them an ornamental, rather than a solid, practical, or intellectual education. They allow them to discard housework for fear their hands will not be small and delicate. Music, painting and embroidery are very useful and pleasant accomplishments, but should not be sought after to the exclusion of the practical, and by no means the least important part of a young girl's education and preparation for an active, useful life. Mothers are culpably to blame, if in their mistaken kindness they neglect teaching them the lessons in domestic economy, so necessary to their future welfare.

All physicians agree in saying that housework is the most healthful exercise that women can engage in. The body possesses no fewer than 400 muscles, and each muscle is designed to serve some particular end. A sound state of body requires that every one of these muscles be brought into daily action, and it is only by a certain amount of daily exercise that each muscle will gain in strength and soundness; otherwise it must become feeble and delicate. The remedy of the errors in education lies with women. Can they not bring up their daughters more usefully and less showily—less dependent on luxury and wealth? Can they not teach them from earliest childhood that to labor is a higher thing than merely to enjoy; that even enjoyment itself is never so sweet as when it has been earned? Can they not put into their minds, whatever be their station, principles of truth, simplicity of task, helpfulness and economy? Any woman is unworthy of the just empery of her sex when she gives up to either fashion or ceremony her common sense, comfort or good taste; when she suffers herself to waste hour after hour, day after day, year after year, in the company of frivolous folks, to whom she can do no good and from whom she can receive no benefit.

Sunlight.

Light is one of the most active agencies in enlivening and beautifying a home. We all know the value of sunlight as a health-giving agent to the physical constitution. We are more active under its influence—can think better and act more vigorously; but many people seem to have an idea that it is their greatest enemy. They carefully exclude its beams from their rooms, close the blinds and curtain the windows; it fades their carpets and stuffed furniture and tans the face and hands. This exclusion of light is also a protection against flies, as they will not remain in a darkened room, but seize the first opportunity to escape, thus showing the superiority of their instinct over the deluded reason of human beings. Let us take the airiest, sunniest room in the house for our living-room—the workshop where brain and body are built up and renewed; let us throw open the blinds and windows for the free entrance of the good twin angels of nature, sunlight and fresh air. A person of sensitive physique may be nursed into settled hypochondria by living in close, dark rooms where the sweet, fresh air is determinedly shut out and the foul air is determinedly shut in.

Good temper is, with many people, dependent upon good health, good health upon good digestion, good digestion upon good, wholesome food, well prepared and eaten in peace and pleasantness. Ill-cooked, untimely meals are as great a cause of bad temper as many a moral wrong. We believe that badly prepared food is the direct cause of more dyspepsia, headache, liver complaint, quarrels, divorces and untimely deaths than any other one thing. Untold amounts of good materials are wasted by bad cooking. Country people are short-lived; the ancestral daily pie with its soggy, indigestible crust, together with meats fried, or rather *stewed* in fats, do their work slowly but surely. Every cook should understand the principles of practical chemistry, physiology and hygiene to be able to prepare healthful and nutritious food; hence the great need of training, or cooking schools, where girls and women may be taught the art of cooking upon scientific principles. Of the need of trained mothers, Mrs. Diaz writes: "There seems to be utter blindness and stupidity among a large class of people. From what they say of the difficulty of bringing up their children, it must take an archangel to do it rightly. Still they do not think a woman who is married and settled down to family life needs much education. Moreover, in educating young women, that which is universally acknowledged to be the chief business of their lives receives not the least attention. The individual who builds our ships, cuts our coats, manufactures our watches, takes charge of our cattle, our trees, our flowers, must know how—must have been especially prepared for his calling. It is only of character-molding, only shaping the destinies of immortal beings, for which we demand neither preparation nor a knowledge of the business. It is only of our children that we are resigned to lose nearly one-fourth by death, owing to ignorance and injudicious nursing management. Were this rate of mortality declared to exist among our domestic animals, the community would be aroused at once." If women are ambitious to walk in the higher paths of science, the kitchen affords laboratory work equal to that of any. The study of yeast, its component parts, its action with flour and other materials in bread making, affords a scope for the highest exercise in the scientific field—a field in which men of the grandest attainments, and world-wide reputation have not disdained to work, and it is to them that we owe our better knowledge of homework. Humanity, generally speaking, is composed of two sexes; the family foundation must be laid by the union of the two. In the life-work of this union, it must be divided into two parts—the outside, and the inside work. In households there must be one ruling head, and that is, or should be woman. The master, be he father, brother or husband, has quite enough to do outside. He is the bread-winner; the woman the bread-keeper, server and expender. When a house boasts both master and mistress, each should leave to the other the appointed work, and both qualify themselves rightly to fulfill the same, abstaining as much as possible from mutual interference.

*Read at the Hamilton Church evening meeting Feb. 5, 1882.

Worry.

A man who can trust his wife or housekeeper, should no more interfere with her affairs than she should pester and annoy him with things that he cannot remedy and does not understand. One ought always to look at the bright side of things, and never make a fuss about trifles. A common sin of housekeepers is worry; those who will worry will always find enough to worry about. Worry retards rather than forwards the work. It tries the mind before the work is begun. It makes one fretful, sours the temper, and disturbs the peace of the household. There are certain evils which cannot be overcome. We should make the best of them, and not add the burden of worry. Another element of happiness is

Order.

Order is heaven's first law, and all women should make their daily round of life as harmoniously methodical as they possibly can, leaving no odd hours to be idle and dreary in. "If husbands and wives would always remember that with them, as in other associations, union is strength, that united they stand, divided they fall; that together they should walk through life, together share the joys, together bear the burdens and the crosses, what a happy world this would be. If it is a united kingdom, the wife accepts the rough as well as the smooth of the household rule, as her part of the administration. We think the joys and the sorrows, the crosses and the crowns, in married life are about evenly balanced, and nothing will right all the wrongs and bring order out of the confusion of these vexed questions so surely as the shelter of a true home, ruled by the true wife and mother." No man will deny that a good wife is a treasure. Her care and labor certainly secure him many comforts; but how much would he consider them worth in dollars and cents. Husbands will do wisely to give this matter serious thought, lest they make the mistake of taking their wives' labor and attentions, as a matter of course, instead of feeling that in taking his name his wife claims not only an equal right to his cares and labors, but also an equal right to a proper use of the money she has done her part to earn or to save. She should not be considered a recipient of charity, but a joint partner with her husband in the family firm.

The following maxim, written by the ancient Egyptian prince, Ptah-Hotep, is worth remembering: "Love thy wife and cherish her as long as thou livest; be no tyrant; flattery acts upon her better than rudeness, and will make her contented and diligent." He recommends, also, liberality in affording her dress to exhibit herself to her friends.

Woman's Kingdom.

There is a grand and noble mission—work to be done at home, not alone among the poorer classes, but among the rich and cultured, to raise the standard of industry and knowledge in the home. We would say to every woman who has a home: Let home stand first—before all other things. No matter how high your ambition may transcend its duties, no matter how far your talents or your influence may reach beyond its doors, before everything else build up a true home. Be not its slave; be its minister! Let it not be enough that it is swept and garnished, that its silver glistens, that its food is delicious. Feed the love in it; feed the truth in it; feed virtue in it; feed all charity and gentleness in it. Then from its walls shall come forth the true woman and the true man, who, together, shall rule and bless the land.

Labor is Worship.

Laborare est orare—To labor is to pray.

Pause not to dream of the future before us;
Pause not to weep the wild cares that come o'er us;
Hark, how creation's deep, musical chorus,
Unintermitting, goes up into heaven!
Never the ocean wave falters in flowing;
Never the little seed stops in its growing;
More and more richly the rose-heart keeps glowing,
Till from its nourishing stem it is riven.

"Labor is worship!" the robin is singing;
"Labor is worship!" the wild bee is ringing;
Listen! that eloquent whisper upspringing
Speaks to thy soul from out nature's great heart.
From the dark cloud flows the life-giving shower;
From the rough sod blows the soft-breathing flower;
From the small insect the rich coral bower;
Only man, in the plan, shrinks from his part.

Labor is life; 'Tis the still water faileth;
Idleness ever despaireth, bewaileth;
Keep the watch wound, for the dark rust assaileth;
Flowers droop and die in the stillness of noon.
Labor is glory! the flying cloud lightens;
Only the waving wing changes and brightens;
Idle hearts only the dark future frightens;
Play the sweet keys, wouldst thou keep them in tune!

Labor is rest from the sorrows that greet us,
Rest from all petty vexations that meet us,
Rest from sin, promptings that ever entreat us,
Rest from world sirens that lure us to ill.
Work, and pure slumbers shall wait on thy pillow!
Work, thou shalt ride over care's coming billow!
Lie not down wearied 'neath woe's weeping willow!
Work, with a stout heart and resolute will!

Droop not, though shame, sin and anguish are round thee!
Bravely fling off the cold chain that hath bound thee!
Look to yon pure heaven smiling beyond thee;
Rest not content in thy darkness—a clod.
Work for some good, be it ever so slowly;
Cherish some flower, be it ever so lowly;
Labor! *all* labor is noble and holy;
Let thy great deed be thy prayer to thy God

—*F. S. Osgood.*

TUBERCULAR DISEASE.—Prof. Tyndal recently contributed to the London *Times* a luminous exposition of Koch's remarkable investigation of tubercular disease, demonstrating by experiments on animals that the disease is caused and propagatad by living parasites.

YOUNG FOLKS' COLUMN.

Our Puzzle Box.

Cross-Word Enigma.

My first is in near, but not in far;
My second is injure, but not in mar;
My third is in wren, but not in jay;
My fourth is in yellow, but not in gray;
My fifth is in true, but not in false;
My sixth is not in dance, but in waltz;
My seventh is in bear, but not in dog;
My eighth is in swamp, but not in bog;
My ninth is in now; but not in ever;
My tenth is in soon, but not in never;
Now, if the whole of my name you see,
A Southern city you'll find it to be.

MARK.

Buried Cities and Towns.

1. Leo, we go to Naples by the next steamer.
2. The box for Davenport has been forwarded.
3. Amelia pronounces buff a lovely shade for gloves.
4. The winds or tides may delay us for an indefinite period.
5. A quarrel with Dick ensued.
6. Such an oversight should be severely punished.
7. When all entered the house was filled to overflowing.
8. "I saw a small pistol in Denis' room," testified a witness for the prosecution.

AUNT SARAH.

Charade.

With the early first of day
Starts the traveler on his way,
From my second's shelter gay,
Where all night he safely lay.

CROSSCUT.

Reversals.

1. Reverse a wild animal and make the rise of water.
2. Reverse a form of an irregular verb and make a relative.
3. Reverse a boy's name and make the abode of a wild beast.

Curtailments.

1. Curtail a vegetable and leave an insect.
2. Curtail an insect and leave a verb.
3. Curtail a wild fowl and leave a brave man.
4. Curtail a sailing vessel and leave a reptile.

JOSHUA.

Answers to Last Puzzles.

CROSS-WORD ENIGMA. Evangeline.
PROBLEM. Three hundred.
SQUARE WORD.

LIME
IRON
MOOD
ENDS

NUMERICAL ENIGMA.—Enlightenment.
PROPER NAMES.—1. Hen-ry (e). 2. Hunt-er (her). 3. Will-iam (yam). 4. Car-rie (I). 5. Noah (know-ah). 6. Char-lie. 7. May. 8. Mar-tin. 9. Shel(l)-don. 10. Cyrus (sire us).

Sam Belford and President Arthur.

The other day a little red-headed boy, eight years old, developed a new streak of tenderness and simplicity in the character of President Arthur. Little Sam Belford lives near the White House. His father is the sole Congressman from Colorado. Sam goes down to the wharf to fish every afternoon and has the usual luck of the fisherman. He has been spanked redder than his hair is many a time for this performance. But Sam is a wonderfully bright boy, and learned far beyond his age.

With face all begrimed with mud, and clothing that suggested the spanking of the day, Sam looked up and saw a great tall man smoking a cigar.

"What are you doing there?" said the man.

"Fishin', Mr. Arthur."

"Catch anything?"

"A few perch. I come down here nearly every day and fish. Do you ever fish, Mr. Arthur?"

"Oh! yes, I like to fish; I caught a fifty pound salmon once in the St. Lawrence river."

"Why don't you come down here and fish with me sometimes?"

"Oh! I've been down here before. How did you know my name was Arthur?"

"Oh! I know you very well. You are President of the United States. We like you because you appointed Teller. Don't you remember me.?"

"Yes, you were up in my office with your father. Your name is Sam Belford."

"What are you doing down here, Mr. Arthur?"

"I frequently come down here"—and with a tone of sadness in his voice—"I am a widower; my wife used to live in that house before we were married," indicating it with his finger.

"Well, we'll meet here and fish often, then. I'll always have plenty of bait, but if I were a man like you are, with nice horses and carriages, I'd go out to Great falls, where there's bully fishin'."

"Oh, I get tired of riding. I like to walk around here and smoke my cigar and think. I am bothered too much and get tired of sitting down. Come up and take dinner with us, Sam."

"No, sir; I refused to take dinner with Governor Pacheco to-day, because I'm going to the circus. Are you goin' to the circus?"

"Well, I don't think I can to-day, Sam."

"Well, Governor Pacheco is goin' to take me, and he's coming down in a carriage after me, too. That's bully, ain't it?"

"Yes, when I was a little boy like you, I used to like circuses, too. I haven't gone much lately."

"Tell you what I wish you would do, Mr. Arthur. I wish you would take me up in your carriage to see Jumbo when he comes. I want to seee that big elephant. It's a couple of miles out there where that circus is, and you want to see Jumbo, too, don't you? You must go to that circus?"

"Well, we'll see about it, Sam. Pull up your line and walk up to dinner with me."

"I can't; indeed I can't; but I'll walk up street with you. I must see that circus."

They walked up the street chatting about one thing and another till they got to Seventeenth and F. streets, near where Sam lives. Suddenly Sam's eyes flashed, and he yelled to a hackdriver to stop. With a glow of enthusiasm he says:

"There he is! There's Governor Pacheco. Don't you know him, Mr. Arthur? Let me introduce you to him."

Before Sam got his answer from the President, Pacheco was out of his carriage, and Sam said, with the dignity of a statesman: "Mr. Arthur, this is my friend Governor Pacheco; I want you to know him."

It was very evident to the President that Sam thought more of Pacheco than he did of him, because Pacheco was going to take him to the circus, and he thought more of the circus than he did of them both.

Sam went home and had his face washed and another suit of clothes put on him, but before he started for home, he turned round and said to the President:

"Mr. Arthur, Herbert likes you."

"Who is Herbert?" asked the President.

"Why, my big brother. He's 12 years old. Don't you know him? I'll have to bring him around and introduce him to you."

"All right, Sam, bring him around. But come around some day at 4 o'clock when I get through my business, and I will take you out riding, and may be we'll go to Great falls and fish half an hour. But that day you must tell your mother you are going to drive with me."

Still Sam would not let him off. His little tongue fired off the parting question: "Ain't you 'fraid to go down there where I fish alone; ain't you 'fraid you'll be shot like Garfield?"

"I never think of that, Sam. I stroll around in all parts of the city and never feel that I am in danger. I like to get out of the White House and walk. It is dreary in the White House."

The President tells this storyas a little incident, and laughs at the boy's precociousness, but Sam tells it at length, as a commonplace affair, not seeming to realize that he will be remembered in history; but as he tells it and thinks of it, wonders whether "Mr. Arthur" is going to take him to the next circus and a-fishing at Great falls.

GOOD HEALTH.

Foods for Infants and Invalids.

It may be questioned whether there is any subject which comes more closely home to people of all classes than the character of the food supplies specially provided for infants and invalids. The increasing demand for this class of preparations (due partly to an actual need, but chiefly, we suspect, to the skillful advertising of manufacturers and the liberal margin of profit they offer to the retail trade), has led to a great number and variety of such competitors for public favor. Put up in ornamental boxes, they appear on the counters of every grocer and in the show-cases of every apothecary shop; and not unfrequently their actual value is in inverse ratio to the pretentiousness of the package and the price.

As a rule, purchasers are obliged to take the virtue of such articles upon trust, few having the means or the knowledge requisite for an analysis, microscopic or chemical, of the preparations which they are advised to try, perhaps by the family physician, and yet a mistake in this connection may be fatal.

For all young infants, and for adults in many cases of sickness, starch food is injurious; sometimes in being a source of intestinal irritation; sometimes, as in the case of very young children, in furnishing a semblance of aliment without the reality, such children being as unable to digest and assimilate starch as sand. Hence the usual claim with respect to prepared foods of the cereal class is that they are free from or contain very little starch, while they are rich in gluten and other food elements capable of nourishing the sick and the young. To discover how far these claims are well founded, Dr. Ephraim Cutter, of Harvard college and the University of Pennsylvania, has lately made microscopic examinations of something like 40 cereal foods, developing facts of the highest importance to physicians and their patients, as well as to parents having young children. The results of his investigation appear, with numerous illustrations, in the *American Medical Weekly*, and are worthy of study by all who are interested in microscopy or in the nourishment of invalids and children.

SOFT BEDS.—Why should soft beds be considered unwholesome? Certainly they afford more comfort than hard ones. Hard beds should never be given to little children, and parents who suppose that such beds contribute to health by hardening and developing the constitutions are surely in error. Eminent physicians—both here and in England—concur in this opinion, and state that hard beds have often proved injurious to the shape of infants. Birds and animals cover their offspring with the softest material they can obtain, and also make soft beds for them; why not do the same with our own young?

DOMESTIC ECONOMY.

How to be Happy and Long-Lived.

First, study to acquire a composure of mind and body. Avoid agitation of one or the other, especially before and after meals, or while the process of digestion is going on. To this end, govern your temper; endeavor to look on the bright side of things; keep down, as much as possible, the unruly passions; discard envy, hatred and malice, and lay your head upon the pillow of charity with all mankind. Let not your wants outrun your means. Whatever difficulties you have to encounter, be not perplexed, but only think what is right to do in the sight of Him who seeth all things, and bear without pining the results. When your meals are solitary, let your thoughts be cheerful; when you are social, which is better, avoid disputes, or serious arguments, or unpleasant topics. "Unquiet meals," says Shakespeare, "make ill digestions;" and the contrary is produced by easy conversation, a pleasant project, welcome news, or a lively companion. I advise wives not to entertain their husbands with domestic grievances about children or servants, nor ask for money, or propound unreasonable or provoking questions; and advise husbands to keep the cares and vexations of the world to themselves, but to be communicative of whatever is comforting, cheerful and amusing. Self-government is the best step to health and happiness.

In this connection the following suggestions are apropos:

Eat slowly, as if it was a pleasure you desired to prolong, rather than a duty to be performed as soon as possible.

Don't bring your prejudices, your dislikes, your annoyances, your past misfortunes, or future forebodings to the table. They will spoil the best dinner.

Respect the hours of meals; you have no right to injure the temper of the cook, destroy the flavor of the viands, and the comfort of the family, by your want of punctuality.

Have as much variety in your food as possible, but not many dishes served at one time.

Find as little fault as possible with the food prepared, and praise when you can.

Finally, be thankful, if you have no meat, that you have, at least, an appetite, and hope for something better in the future.

LEMON ICE.—Soak half of one box of gelatine in a pint of cold water, put it in a porcelain kettle, pour on nearly one pint of boiling water; when the gelatine is dissolved, put in two-thirds of a coffee-cup of white sugar and a half a coffee-cup of lemon sugar, boiling long enough to make jelly; remove from the fire, then pour in, slowly, three beaten yelks of eggs, the whites of the eggs beaten to a froth; flavor with two teaspoonfuls extract of lemon; pour into a mold and set to cool. This is a delicious dessert, nourishing and relishable for the convalescing sick.

TAPIOCA PUDDING.—Soak four tablespoonfuls in a little water over night, or two hours; boil one quart of milk and pour over it while hot; when cool, add half a teacup of sugar, one egg and the yelks of two well beaten; flavor with Dr. Price's extract of lemon, and bake; when done, beat the two whites of eggs with two tablespoonfuls of pulverized sugar, spread upon the top, return to the oven to brown.

STEAMED GRAHAM BREAD.—Two cups of Graham flour, one egg, one tablespoonful of melted butter, three quarters of a cup of molasses, two teaspoonfuls of baking powder. Steam for an hour and three quarters; eat while warm; cover with a heavy cloth when you take it from the steamer; the crust will be more tender if this is done.

STEAMED JOHNNYCAKE.—Beat one dessert-spoonful of sugar with two eggs; add two teaspoonfuls of buttermilk, half a teacupful of sweet, rich cream, two even teaspoonfuls of soda, or enough to sweeten the buttermilk, a little salt, one cupful of flour, and meal to thicken. Steam from one and a half to two hours.

COFFEE CAKE.—One cup of sugar, one cup of butter, one egg and one cup of molasses well mixed together; then add one cup of strong warm coffee, with a teaspoonful of soda dissolved in it, four cups of flour, one pound of raisins, stoned and chopped fine, one tablespoonful each of cloves, cinnamon and nutmeg.

FRITTER BATTER.—One pint of milk, three eggs, a little salt, one pint of flour. Beat the yelks of the eggs well; add part of the milk and salt, then the flour and milk alternately, beating it all quickly. At the moment of cooking, stir in well the whites of the eggs beaten to a stiff froth.

BUTTER SCOTCH.—Butter Scotch, the children's favorite, is made of one cup of butter, one cup of sugar and one cup of molasses. Boil until it hardens in water. Then spread it thinly in pans, and mark it in little squares or diamonds.

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TABLE OF CONTENTS.

GENERAL EDITORIALS.—Hybridizing and Cross Breeding Wheat, A Country Home; Potash for Potatoes, 345. The Week, United Effort Against Debris; Meeting of the State Horticultural Society, 352. The Wheat Crop of the United States; San Francisco Grain Exchange; The Roller System of Flouring, 353. Chemistry of Ripening Wheat, 354. California Wheat in the World's Markets, 356. Notices of Recent Patents, 360.

ILLUSTRATIONS.—Design for Cheap Floral Cottage, 345. Gray's Patent Noiseless Double Roller Mill, 356.

CORRESPONDENCE.—Santa Clara Co. Notes; Scenery and Salmon; Lake county; Pacheco Valley, 346-347.

HORTICULTURE.—Strawberries in Santa Clara; Orchards for Sentiment or Sustenance? 347.

THE STABLE.—Bots in Horses, 347.

PATRONS OF HUSBANDRY.—Union Grange Meeting at Santa Rosa; Pescadero Grange; Grange Reunions; District Lecturers; Grange Work; The Railways and Their Taxes, 348.

AGRICULTURAL NOTES, from the various counties of California and Nevada, 348-9.

NEWS IN BRIEF on page 364 and other pages.

HOME CIRCLE.—The Death of Ceres, May is Here, (poetry); Homes and Home Life, 350-351.

YOUNG FOLKS' COLUMN.—Our Puzzle Box; Sam Belford and President Arthur, 351.

GOOD HEALTH.—Food for Infants and Invalids; Soft Beds, 351.

DOMESTIC ECONOMY.—How to be Happy and Long-lived; Lemon Ice; Tapioca Pudding; Steamed Graham Bread; Coffee Cake; Butter Scotch, 351.

MISCELLANEOUS.—The Willow as a Timber Tree; Congenial Color-Blindness, 356.

AGRICULTURAL ENGINEER.—Farm Engineering, 356.

SERICULTURE.—Silk Culture in California, 358.

THE FIELD.—Notes in Tulare and Fresno, 361.

Business Announcements.

Caution—Imperial Egg Food—G. G. Wickson, S. F.
Bartlett Springs—Clark & Crigler, Proprietors.
The Hammock Chair—O. J. Lincoln, Santa Cruz, Cal.
Farming and Household Implements—John D. Winter.
Fanning Mills—A. P. Dickey, Racine, Wis.

The Week.

The death of Emerson, which occurred since our last issue, forcibly reminds us that the intellectual giants of the last generation are fast going hence, and the present generation will soon be thrown entirely upon its own resources. During April there died Longfellow, the poet; Darwin, the man of science; Emerson, the philosopher—a triumvirate—each without a peer in his field of effort. It does not yet appear whence they shall come who shall fill their places.

Again the Chinese question assumes tangible form, and another bill, restricting the immigration of the Chinaman for 10 years, is now in the hands of the President. It is difficult to see how he can do otherwise than sign it. Meantime local agitation against the Chinaman is assuming a more promising form than it has hitherto, as it is taking the form of organizations to refrain from all patronage of the Celestials and those who employ them. This is the most feasible and practical method of showing that their presence is undesirable here, and inducing them to wander to other more promising fields.

The weather continues fine and favorable to crops in that dry winds are held back, and shady mornings, with occasional showers, tend to prevent the too rapid escape of the moisture from the soil. There will, however, be but a moderate outturn of cereals, as the season's rainfall has been, on the whole, rather scanty. Fruit of all kinds promises abundant yields.

United Effort Against Debris.

The efforts of the menaced property owners of the Sacramento valley to preserve their lands and homes from destruction by debris, are assuming a vigor and united purpose which will give the movement irresistible force. During the last year the logic of facts has awakened many who had heretofore looked upon the downpouring of slickens as something remote from their interests. It is seen to be only a question of time, and not a long time at that, when the continuance of the evil will embrace them in its injury, and they are now becoming disposed to cast in their strength with the tireless workers above, who for years have cried out for popular sympathy and aid to save their homes. Beyond the valleys it is becoming better seen that the blotting out of the valley and the ruin of the rivers is a blow at the general prosperity of the State which must be arrested.

As we write, on Wednesday, there is being held in Sacramento a convention which the *Bee* of last evening predicts will be composed of the supervisors and residents of the valley counties, who meet, not for politics or to nominate officers of any kind, but for counsel as to the best mode of saving their homes from the destruction that now so imminently threatens them. There will be large and earnest delegations from Sutter, Butte, Yuba, Colusa and perhaps from other counties. The *Bee* also says: To the city of Sacramento and to this valley generally this is the most important convention that ever assembled here. Its object is not to elect any person to office, but to save the valley and all in it from being whelmed in a sea of sand. To save the valley, not only to the present inhabitants, but to all the generations that may hereafter inhabit it. To save to hundreds of thousands of people food, clothing and shelter through all coming time. To save Sacramento herself from annihilation. This is the object of the convention.

We trust that the convention will be largely attended, and a vigorous spirit characterize its counsels. It is quite time that this matter was brought out of a corner, and made to stand aloft, so that all may understand and appreciate its bearings. The Sutter county *Farmer* recently gave a brief, but impressive, sketch of the evil and its future effects, in these forcible words:

There is a process at work in our mountains which if unchecked, will render life and property in the valley insecure. The people of the valley, aye of the whole State, cannot too soon protest against a process so destructive to the material interests of the State, both public and private. She State has too long stood idly by and witnessed the destruction of her river channels, and very much of her choicest lands. And yet it is said the operations are but in their infancy, and believing this to be so, we have no excuse to offer for protesting against, and invoking the aid of the Courts and public sentiment. Destroy these channels and you destroy river transportation. Destroy these channels, and you destroy the highlands along their borders. Destroy these channels, and the highlands along the foothills will be the boundaries of the waters of the valley! Destroy these channels, and you destroy the towns and cities of the valleys! Destroy these channels, and you destroy the capital city, and the State Capitol, and surround it with a desert! Destroy these channels, and you destroy the city and harbor of San Francisco; but of those there will be little use then! Destroy these channels, and you destroy the State of California, and drive from her borders a most desirable people, and rob the millions to come after us of their just patrimony. Tell us not this picture is overdrawn. We have but to open our eyes to see all the apprehensions staring us in the face. Let no man seek to put this ghastly picture to one side. The question is serious enough to engage the attention of the wisest and best in the land.

It is hopeful for the right solution of the matter that the question is now receiving the attention of the deepest thinkers and of those best acquainted with the rights of men, as laid down in laws and precedents, and the judgment is that the menace must not proceed farther. The State cannot afford to have one of its largest and fairest valleys turned into a waste, in order that a few may become enriched by washing down the mountains. One man cannot build up prosperity by ruining the property of another, and the ultimate result of the application of the machinery of justice and legislation to the question, must be the affirmation of this fundamental truth. And the sooner this conclusion is reached the better.

A VALUABLE OFFICER.—People are beginning to recognize the fact that they have a faithful friend in the person of Attorney-General Hart. He has stood up bravely in the interest of the Sacramento valley in the suit against the debris destroyers when a good sack of gold could have been easily had by silence or lukewarmness on his part. He has also checkmated the attempt of the Supervisors of Sacramento county to sell out the rights of the county by accepting less than the just taxes from the railroad company. He has been a friend of the horticulturists all through in their efforts to cope against the increase of noxious insects—in fact, he has given much evidence of being the right man in an important place and should receive the approval of all right-minded citizens.

NEW ORLEANS has got its five miles of river front illuminated by 104 electric lights, and hopes to stop the pilfering of goods piled there, as well as to facilitate work by their means. The city has, in all, over 300 lights of the kind in use.

A TWENTY THREE-POUND Kennebec salmon, the first of the season, received in New York on Thursday, 20th ult., sold for $1.75 a pound.

Meeting of the State Horticultural Society.

The last meeting of the State Horticultural Society was held at the Academy of Sciences, April 28th, R. J. Trumbull in the chair.

The Secretary read a paper written by J. M. Hixson, which gave the result of his observations of the Eastern trade in California green and dried fruits. The paper was printed in last week's PRESS. The essay was heard with interest and favorably commented upon.

The Secretary read, also, a letter from I. A. Wilcox, of Santa Clara, on strawberry growing, which may be found on page 347 of this issue. Discussion followed.

W. Boots, of San Jose, said: I find the Longworth Prolific to be the earliest. The Sharpless will be close after it. The Monarch of the West, which I have had about four or five years, is pretty well run out; it is good for about three years. This is the third year of the Sharpless, and it is as fine as ever. The Black Defiance is later.

I commenced in 1855, and have followed it up pretty closely. For the present I find no variety that will ripen with the Longworths. The Longworths are running out, and I thought at one time by reproducing from seed, we might reproduce and renew the Longworths, but it is nothing to what the Longworths were 15 or 16 years ago. Sixteen or 18 years ago I raised four tons of Longworths per acre. I can't get one-half of that now. Next to the Longworths comes the Triomphe de Gand; the Washington and Sharpless are later. The Washington we have, but mixed; mixed with the Triumphs. But, for the early berry, there is nothing that will come in as early as the Longworths. The reason why the Longworths have run out is because we irrigate with artesian water, and the deposit of salts upon the surface by evaporation arrests the growth of the plants. My first experience was that the Longworths would produce for 12 successive years. Now I find nothing that will go longer than four. The Triumph is worthless after three years; Washington about the same time. I have tried a hundred or more varieties, but as for an early variety, I have been looking for that and failed to find a substitute for the Longworths.

James Shinn: Several months ago I had some conversation with Mr. Rhodes, from Santa Barbara. Speaking with reference to the Monarch of the West, he said he managed them thus and so. He said: "I have very fine runners and these I put out every year." But I do not remember just what his method was.

Mr. Boots: Location makes a great deal of difference with Cinderella plants. I tried them and set them out, and did my best to make a success of them. In Santa Cruz county the Cinderella bears finely and runs well. It also does well on the island. There the Cinderella will run equal to anything. It bears itself to death.

W. W. Smith: I think I can explain Mr. Rhodes' method with the Monarch of the West. He produced only a few plants, cut off all runners but one or two. He gave these extra care and planted them the next year, and made them produce fine crops. He also said that bone-meal is valuable in strawberry culture.

Mr. Boots: We use a great deal of fish manure. It is better than bone.

Asparagus Growing.

Mr. Klee: I wish to ask a question in regard to asparagus. As long as I have been here, which is not more than six or seven years, I have never seen asparagus that is worth eating. There is only about one-third of it which you can eat. Now, in my country, asparagus can be eaten altogether—the shoots are tender all through. Why asparagus is tough is because it is grown in the light. It becomes woody and green. There asparagus is grown in beds that are heaped up. The beds are raised so that the shoots shoot up in the soil above the average level of the ground. They are white and tender all through. Why can't it be done here?

Mr. Boots: I send in nearly 100 boxes a day; it is all green. My first planting was in rows 14 inches apart and 14 inches deep. I covered them with as much pulverized and loose soil as I could. I have tried the cutting of white asparagus, and sent it to market. I have sent 40 boxes green and four of white, and sold the white at reduced figures; I got 75% more for the green than the white. White grass is not worth one-tenth as much as green. The canners are getting ready to put up asparagus, and they may want white "grass." As Mr. Klee says, there is no doubt but what white grass can be produced here. The question is: Will people pay for white grass? The Europeans use it to some extent in soups.

Mr. Klee: The beds in Europe are heaped up about two or three ft. When the shoots come up 12 inches they can be cut and yet not get too near the crown of the plant. When you cut white asparagus here, you get too far down below the soil and get the tough fiber.

Mr. Rixford: White asparagus can always be found in small quantities in the market. It is principally sold to French restaurants. White asparagus is considered unwholesome.

Mr. Boots: In the East they trench and dig ditches three ft. deep and four ft. wide. When I started my plantation here, with a heavy plow I ran a furrow a foot deep. Then three ft. apart I dig a little hole like a post-hole and put my plants in, and as the plants grow I gradually fill in these ditches.

The nearer I can get the crowns of the plants to the light and heat, the earlier I have the crop. We cut from January until July, then we let the plants rest. It is a fact that I have realized as high as $600 an acre for asparagus, but I am working 16 acres of asparagus, and employ 15 men, and that from the first of January to the first of July. Consequently, it is not all gold that glitters. If I get 30% out of that I am fortunate.

Mr. Klee: In raising vegetables, their value depends on their tenderness and succulence. They must be made to grow rapidly. Does that rule hold good in asparagus growing? Another question: Mr. Boots said that he had realized $600 from the cultivation of asparagus. Does that mean net profits?

Mr. Boots: I mean net proceeds from my commission men. I had 16 men all the time on 18 acres, and do not pay them less than $1 a day. There is $16 a day for hired help, besides the expense of teams, etc. That will make a mighty big hole in $600. My profit is about $180.

Mr. Trumbull: Speaking of profit on vegetables, several years ago I visited a gentleman in the Santa Clara valley who had some rhubarb. He had about three acres of fine plants. His plants alone have cost him $600. I asked, "How much do you realize from the three acres?" He said; "They pay me better than anything else—$2,400 from these three acres." Rhubarb is not generally considered a very remunerative crop, however.

Prof. Dwinelle then read the following:

Caution in Using Gas-Lime.

Some months since at one of the meetings of the Horticultural Society gas-lime was mentioned as a probable remedy for woolly aphis on the roots of apple trees. It has since been tried in the University orchard, at Berkeley, with perfect success, as regards killing the insects. The effect upon the roots of the trees is, however, such as to show that great caution should be exercised in its application, and that it is still a question whether it can be used with safety.

In the month of November it was applied at the rate of six shovelfuls about each tree, spread over a circle reaching about 3 ft. from the tree, and lightly covered with soil. About six weeks later an examination showed that the aphis was killed, and no damage to the roots from the gas-lime was apparent. Now, however, after the soaking winter rains, the roots within the area of the application are in a very bad condition, the bark being dead and decayed. The lime between the injured bark of the root and that beyond the influence of the lime is, on the larger roots, very marked.

Later experiments have been made, with from one to three shovelfuls of the gas-lime, on a circle of 3 ft. area. An examination to-day shows that there is no live aphis, and no apparent damage to the roots of the trees where these last applications were made. We have then to note that the greatest danger is when heavy rains follow the application of the gas-lime, and that the quantity which may safely be used is still in doubt.

It may be that the circulation will be kept up by the still healthy ends of the injured roots, so as to cause a new growth over the damaged spots.

Dr. Gibbon, of Alameda, showed specimens of Eastern clover of generous growth. James Shinn showed branches of deciduous cypress, the Japanese maple and other interesting growths, and the meeting adjourned, after announcing that the subjects to be next discussed would be "The Cherry," introduced by W. W. Smith, of Vallejo, "Beneficial Herbs of California," introduced by W. G. Klee, of the State University, and "The Canker Worm," introduced by Prof. Dwinelle.

California Lands.

Mr. Street, Land Officer of the California Immigration Society, in his monthly report to the Board of Directors of the association, made the following statement relative to the present disposition of the agricultural lands of the State:

"The total area of the State is 100,000,000 acres, a portion of which has been disposed of in round figures, approximating as follows:"

	Acres.
Belonging to or claimed by railroads, about	25,000,000
Private grants	8,000,000
Indian and Military reservations	300,000
To the State for educational and other purposes,	6,500,000
Lakes, bays, navigable rivers and islands	1,500,000
Swamps and overflowed	1,700,000
Salt marsh and tide lands	100,000
Grand Total	43,600,000

Besides there was a vast amount sold for cash, and disposed of under the pre-emption, homestead and other laws of the United States, certainly amounting in the aggregate to several millions of acres.

HAY RECEIPTS IN APRIL.—According to the figures of Thomas I. Lee, Secretary of the San Francisco Hay Exchange, receipts of hay at this port in April were as follows: By water, 3,195 tons; South Pacific railroad, 900; Central Pacific railroad, 523; South Pacific Coast railroad, 192. Total, 4,811 tons.

THE Denver & New Orleans (broad gauge) railroad on Saturday evening drove its last spike between Denver and Pueblo. It is a rival line of the Denver & Rio Grande, a narrow gauge.

The Wheat Crop of the United States.

The tenth census of the United States was planned so as to present better reports of the industrial interests of the country than were ever before attempted. This was done by the employment of special agents, who were experts in the different lines of production. The growth of cereals was in charge of Prof. W. H. Brewer, of Yale college, and President of the Connecticut Agricultural Experiment station. In due time we may expect from him a full and valuable exposition of our grain-growing industry. At present we have the statistical showing, in the journal of the American Agricultural Association, of the production of wheat, by Hon. J. R. Dodge, the statistician of the Department of Agriculture, who is also doing most excellent agricultural work in the census office. We consider it timely, as a harvest topic, to present data drawn from this preliminary report of Mr. Dodge.

The most important items in farm production of the United States are those which furnish the breadstuffs—the cereals. Less than a fourth of the aggregate of these products is used for "bread;" about one-tenth is exported; by far the greater portion going towards the production of pork, beef, mutton, eggs, etc., and the feeding of horses. Much is said of the use of grain for distilled liquors, but it amounts to only 1% of the whole (24,006,359 bushels in the census year), and a little more than 1% in the manufacture of beer. The area and product of 1879 are as follows:

	Acres.	Bushels.
Corn	62,368,856	1,754,449,435
Wheat	35 430,052	459,667,043
Oats	16,144 593	407,858,999
Barley	1,997,717	44,113 495
Rye	1,842,306	19,831,621
Buckwheat	848,389	11,817,327

The area in cereals is, therefore, 118,631,913 acres, and the product 2,697,737,920 bushels. This is nearly twice as much as the quantity produced in 1869. The return of corn was then 760,944,549 bushels; of wheat, 289,745,626 bushels; of oats, 282,107,157 bushels; all cereals, 1,387,299,153 bushels.

This country is first in the world in the growth of wheat, the king of bread grains. A few years ago France ranked all wheat-yielding nations; now her wheat area is but half that of the United States. It is a striking fact that, with an increase of population that is phenomenal, the supply per capita has been rapidly increasing. The figures are as follows:

	Bushels.	Per Head.
1849	100,485 944	4 3
1859	173,104,124	5 5
1869	287,745,626	7.8
1879	459,591,093	9

The Western march of wheat growing has been a necessity of rapid settlement, and a convenience as an easily cultivated pioneer crop for prairie lands. It is thus shown:

	Atlantic Coast.	Central Belt.	Trans-Mississippi.
1849	51,657,020	43 522 646	5,306 278
1859	53,294,137	94,458,609	25,352 178
1869	57,476,371	140,877,070	89,392 18[illegible]
1879	62,425,324	225,567,490	171,598,279

All sections have made increase. The central belt has had the largest volume of increase, and the Trans-Mississippi the largest proportion. The ratios of progress are thus given:

	1849.	1859.	1869.	1879.
Atlantic Coast	41.5	30.7	20	13.6
Central Belt	43.3	54 6	49	49.1
Trans-Mississippi	5.3	14.7	31	37 3
	100	100	100	100

The seaboard and Gulf States of the extreme South grow wheat very sparingly, having occupied in wheat but 2,176,251 acres, producing 13,068,298, only 6 % of the breadth and 3 % of the product. It is not a region generally adapted to this cereal, but there are twenty counties in Texas, and portions of the other States, capable of making large yields, and some experimental patches have made 40 bushels per acre.

New England contributes less than a fourth of 1 % of the wheat area, but obtains the more than average yield of 15.5 bushels per acre—1,227,037 bushels on 79,003 acres. The middle States neither advance nor retrograde perceptibly. Pennsylvania is the only Eastern State that cultivates a million acres. California and Oregon had poor harvests in 1879, having 6 % of the area, and 8 % of the product. Their normal product is now about one-tenth.

The States that produce the surplus which supplies the East and Europe are the seven surplus corn States; and, in addition, Michigan, Wisconsin and Minnesota, and two on the Pacific coast, with two Territories—Washington and Dakota—which yield, as yet, a small surplus in volume, though large in proportion of area in other crops.

It is a mistake to assume, as foreigners do, and many natives as well, that wheat culture is disappearing eastward, and passing west of the Mississippi; that the spring wheat region supplies most of the surplus. On the contrary, the winter wheat represented three-fourths of the crop in 1879. Of course, California is not reckoned a spring wheat State. Spring wheat has the poorest chance there of any State in the Union. Little spring wheat is grown except in Wisconsin, Minnesota, Iowa, Nebraska and Dakota. A little is sown in New York, some on the Northwestern coast, a trifle in Kansas and several other winter wheat States. About four-tenths of the crop is produced north of the Ohio and east of the Missisippi—nearly 180,000,000 bushels in the four winter wheat States, Michigan, Ohio, Indiana and Illinois. In this region the yield is improving by tile drainage, better cultivation, and restorative methods of progressive agriculture. The following comparison I have prepared for another journal:

"The increase over the census crop of 1869 was about 40 % in the spring wheat belt, and 75 % in these States of the Ohio valley. Of the 109,000,000 bushels gained, these winter wheat States furnished about 88,000,000, showing very conclusively that the unusual foreign demand has been met by the sturdy farmers of the Ohio valley mainly, and indicating an ability to answer any reasonable future requirement. The record stands:

	1879.	1869
Ohio	46,014,849	27,882,159
Michigan	35,532 553	16,265,773
Indiana	47,188,989	27,747,232
Illinois	51,110,502	30,128,405
	179,946,913	102,023,559
Wisconsin	24,684,689	24,606,344
Minnesota	34,625,657	18,866,073
Iowa	31,177,225	29,435,692
Nebraska	13 846,742	2,125,086
Dakota	3,018,354	170,662
	107,352 667	76,203,857

Not alone is this superiority in the absolute quantity; it is also observed in yield yer acre. The areas in wheat are nearly alike in both sections. In the four States between the lakes and the Ohio the acreage is 10,217,156, and the yield per acre 16 6 bushels; in the spring wheat belt, acreage, 9,836,475; yield per acre, 10.9 bushels, or nearly two-thirds the rate of yield for winter wheat. An equal rate of production would have given 54,000,000 bushels more on this acreage, and added fully $30,000,000 to net income of growers.

The product and acreage of each State in 1879 was as follows:

	Acres.	Bushels.
Alabama	244,971	1,529,657
Arizona	9,026	136,427
Arkansas	204,131	1,269,730
California	1,832,429	29,017,707
Colorado	64,693	1,425,014
Connecticut	2,198	38.742
Dakota	265,298	3,017,827
Delaware	87,539	1,175,272
District of Columbia	285	6,402
Florida	81	422
Georgia	475,684	3,159,771
Idaho	22 066	540,589
Illinois	3,218 542	51,110,502
Indiana	2,619 695	47 284,853
Iowa	3,049,288	31,154,205
Kansas	1,861,402	17 324,141
Kentucky	1,160,108	11,356,113
Louisiana	1,501	5,034
Maine	43,829	665,714
Maryland	569,296	8,004,864
Massachusetts	963	15,768
Michigan	1,822 947	35,532,543
Minnesota	3,044,670	34,601,030
Mississippi	43,524	218,890
Missouri	2,074,394	24,966,627
Montana	17,665	469 688
Nebraska	1,469,865	13,847 007
Nevada	3,674	69,298
New Hampshire	11,218	169,816
New Jersey	149,760	1 901,739
New Mexico	51 230	706,641
New York	736,611	11,587 766
North Carolina	646,829	3,397,393
Ohio	2,556,134	46 014,869
Oregon	445,077	7,480,010
Pennsylvania	1,445,384	19,462,405
Rhode Island	17	240
South Carolina	170,902	962,358
Tennessee	1,196,563	7,331,353
Texas	373,612	2'567,760
Utah	72,542	1,169,199
Vermont	20,748	337,257
Virginia	900,807	7,822,504
Washington	81,554	1,921,322
West Virginia	293,068	4,001,711
Wisconsin	1,948,160	24,884,689
Wyoming	241	4,674
Total	35,430,052	459,667,043

San Francisco Grain Exchange.

The Board of Directors of the San Francisco Grain Exchange have selected the Nevada bank, Bank of California, London and San Francisco bank (Limited), Anglo-California bank, Lazard Freres, First National bank and Grangers' bank as the places of deposit for margins on time contracts made on the Exchange. The Committee on Classification has reported standards of classification for the articles as yet placed upon the trade list by the Board of Directors. Wheat, barley and grain sacks will only be called.

The Board of Directors have secured for the open sessions of the Exchange, the basement office fronting on Pine street, in the northeast corner of the Stock Exchange building. These rooms will be kept open from 9:30 in the morning to 4 o'clock in the afternoon, and are intended as a place of general rendezvous for the members of the Exchange and their customers, and where all persons having business and orders to fill in the commodities dealt in at the Exchange may meet and trade throughout the day. In this room will also be displayed the special telegrams from London and Liverpool, and from the cities of the Eastern States, that the Committee on Information and Statistics is making preparations to have received by the Exchange for the benefit of its members. As soon as these preliminary preparations are completed, the formal calls in the Exchange will be inaugurated, which will be about the 15th prox.

Standards.

Wheat—Choice milling shall be sound, plump, well cleaned, above No. 1 shipping standard of the San Francisco Grain Exchange.

No. 1 shipping shall be well cleaned, either white or amber, weighing not less than 62 lbs. to the measured bushel.

No. 2 shipping shall be reasonably well cleaned, sound and plump, free from smut, either white or amber, weighing not less than 60 lbs. to the measured bushel, free from dark coast wheat, and up to No. 2 shipping standard of the S. F. Grain Exchange.

No. 1 Sonora shall be well cleaned, weighing not less than 64 lbs. to the measured bushel.

No. 2 Sonora shall be reasonably well cleaned, sound and plump, weighing not less than 60 lbs. to the measured bushel, and up to No. 2 standard Sonora of the S. F. Grain Exchange.

No. 1 Odessa shall be well cleaned, sound and plump, weighing not less than 63 lbs. to the measured bushel.

No. 2 Odessa shall be reasonably well cleaned, sound and plump, weighing not less than 60 lbs. to the measured bushel, and up to No. 2 standard Odessa of the S. F. Grain Exchange.

Barley—No. 1 brewing barley shall be plump, bright, sound, clean, reasonably unbroken and free from other grain and seed, not weighing less than 48 lbs. to the measured bushel. San Francisco Grain Exchange standard.

No. 2 brewing barley shall be reasonably plump, bright, sound, reasonably unbroken, and weighing not less than 46 lbs. to the measured bushel. San Francisco Grain Exchange standard.

No. 1 dark brewing shall be off color, plump, sound, reasonably clean and unbroken, weighing not less than 46 lbs. to the measured bushel. San Francisco Grain Exchange standard.

No. 1 feed barley shall be good color, sound, reasonably clean, weighing not less than 42 lbs. to the measured bushel. San Francisco Grain Exchange standard.

No. 2 feed barley shall be sound, stained or off color, reasonably free from other grain, or for any other cause that renders it unfit for the higher grades.

Chevalier Barley—No. 1 chevalier barley shall be plump, bright, sound, clean, reasonably unbroken and free from other grain and seed, not weighing less than 54 lbs. to the measured bushel.

No. 2. chevalier barley shall be of fair color, reasonably clean and sound, not weighing less than 50 lbs. to the measured bushel.

Oats—Ex. choice oats shall be white, sound, clean, free from all other grains and seed, not weighing less than 34 lbs. to the bushel.

No. 1 oats shall be principally white, sound, clean, heavy and reasonably free from other grains and seed.

No. 2 oats shall be principally white, reasonably clean and fair weight.

Rye—No. 1 rye shall be plump, sound and well cleaned.

No. 2 rye shall be sound, reasonably clean and reasonably free from other grain.

Corn—No. 1 large yellow corn shall be dry, sound, well cleaned and unmixed.

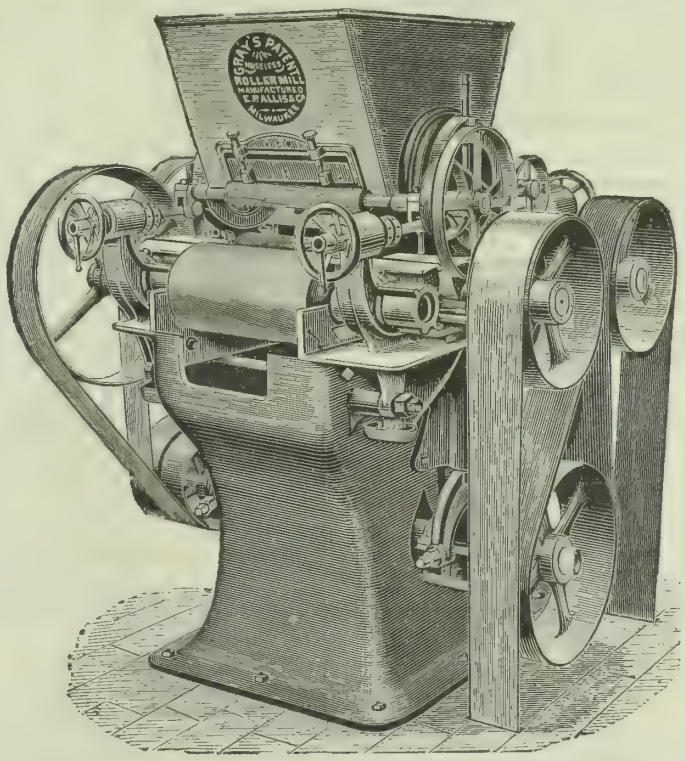
No. 2 large yellow corn may be slightly mixed, reasonably sound and reasonably clean.

Note—All varieties of grain sold shall be of last California crop year, unless otherwise specified, and in good merchantable sacks. Crop year to commence July 1st.

Flour—Flour shall be sold by brand or grade; to be of California manufacture; when of Oregon or other manufacture must be so named. A barrel shall be deemed to weigh 196 lbs. in sacks, when in other packages to weigh 196 lbs. net, and no allowance shall be made for any over-weight.

All flour sold must be in new or merchantable and in either one-half or one-quarter sacks, unless otherwise specified at time of sale.

Grain sacks shall be sold by trade-mark and size. Duty paid and from locality made, unless otherwise specified, of standard weight, average 12 oz. for 22x36 sacks.



GRAY'S PATENT NOISELESS DOUBLE ROLLER MILL.

The Roller System of Flouring.

Our readers are doubtless aware, from what has been said from time to time in these columns, that the roller system of flour milling is fast superseding the old method of stone grinding. Upon this coast, as well as at the East and in Europe, the new system is making rapid and wide advances. This being the case, we have secured for illustration one of the leading machines used in the new process, and one which is now being largely introduced into the mills of this State. It is used by the Golden Gate mills, of this city, where they have 48 double roller machines, giving a capacity of 1,000 barrels in 24 hours, and other mills are making the same reform in their operations by the use of the same rollers.

The machine shown in the engraving is styled Gray's Patent Noiseless Roller Mill, manufactured by E. P. Allis & Co., of Milwaukee, Wis., who have led in this country in the designing and manufacture of roller mills, and have sent many of their mills to foreign parts. The system of grinding embodied in the Gray Roller Mills consists essentially in gradually reducing the wheat to middlings, and the middlings to flour, by several successive operations, each followed by bolting and purifying while both the offal and flour particles are in large pieces and much easier to handle than the product of the old system; and when this is successfully carried out a perfect and clean separation of the bran, germ and impurities of the flour is obtained. The leading features of the system are: 1st. A thorough and systematic cleaning of the wheat with the most improved scouring and brush machines and separators, for the elimination of extraneous seeds and dirt. 2d. That the granulation of the wheat shall be done entirely by corrugated chilled iron rolls in four to six successive reductions or breaks; the rolls on the first break to have the coarsest corrugation, and increasing in fineness through the several reductions or breaks to the final bran-cleaning roll. There should be as little flour made as possible during this operation, as it will necessarily be of lower grade than middlings flour, and the bran should be finished up clean. 3d. The separation of the flour, middlings and chaff from the several breaks by means of metal and silk bolts and aspirators. 4th. The systematic and thorough grading and purifying of the middlings by means of graders and air and sieve purifiers. 5th. The sizing of large middlings on smooth chilled iron rolls, with but slight differential motion, in order to reduce them in size preparatory to flouring, and to eliminate, by flattening, what germs and bran specks may have adhered to them. 6th. The final reduction of the fine, clean middlings to flour by means of porcelain rolls having light pressure and high differential motion. 7th. A full and complete system of bolting. By this roller system from one-fourth to one-third more flour can be made with the same power, the yield is largely increased, and the flour of much higher grade than by the old system. These great improvements in the art of milling explain the general introduction of the roller system in the large milling establishments of the world.

Chemistry of Ripening Wheat.

Scientific Tests with Practical Bearings.

The discussion of best methods of harvesting wheat involves many considerations. Direct issue is now being made between the result by self-binding reapers and by the old header method of gathering. Very important are the cost of the work, the saving and waste of grain, etc. Another matter of importance is the composition of the grain at different times of cutting. This is a matter which only the chemist can accurately set forth, and to assist those who are fully able to figure up the labor and gross weight items from their own experience, to arrive also at the chemical status of the question, we reproduce, below, the detailed chemical investigations made last summer by Prof. Kedzie of the Michigan Agricultural college, and read last August before the American Society for the Advancement of Science:

Prof. Kedzie's Report.

The wheat crop of the United States is of great importance, because it is a staple agricultural production in nearly every State and Territory of our Union. The grain is also important, because it furnishes the leading article of food for civilized man. Both as cousumers and producers Americans are interested in this leading cereal. Any circumstance, therefore, which may affect its production or modify its nature as food becomes a matter of general interest.

One of the circumstances which has a modifying influence upon the quantity and the quality of wheat is the time of cutting the grain. There is some diversity of opinion respecting the time when wheat should be cut in order to secure the best results, some advocating early cutting, and others recommending that the grain should become dead-ripe before harvesting. The plea for complete ripening, like the plea for flinty wheats as a class, is based upon the claim that only the hard and flinty wheats have the desirable amount of gluten; that the early ripened and the soft wheats are so deficient in gluten that good flour cannot be made from them, and only the hard wheats possess the requisite amount of gluten.

The true explanation of this exaltation of the flinty wheats, and depreciation of the soft wheats, is that there has been a revolution in the methods of milling, by the introduction of the patent process. Under the old method of milling, when the grinding was completed at one operation, the soft wheats were in demand, and early cutting, while "the berry was in the dough," was recommended. But since the new process has been introduced, in which the grinding is accomplished in successive stages, and the highest prized and priced flour is now made from the middlings, which formerly were discarded as unfit for human food, a very different quality of wheat is desired. The soft wheats are no longer in demand, but the hard and flinty wheats, which will produce the largest amount possible of middlings for purifying, making the "new process flour." The farmer is urged to discard his white winter wheat, and to let his wheat stand till dead-ripe, in order to secure the hard and flinty berry. This is fair and legitimate, and should give offense to no one, for the miller has the right to give the preference to one quality of wheat berry over another quality; but the case becomes different when he alleges, as the ground for such preference that the soft wheat is so deficient in gluten as to be incapable of making good flour, and that the formation of gluten is one of the latest acts in ripening of wheat, and that the early ripened berry is so deficient in gluten as to be unfit for milling. The question, then, becomes one, not of physical texture, but of nutritive value. The farmer resents the imputation that his grain is deficient in the most important nutritive principle, while the consumer becomes solicitous lest he may be using flour not up to the standard in nutritive value.

There would have been less heat in this discussion if the miller had frankly said that in consequence of a great change in the process of milling, wheat of a very different texture is now in demand, without attempting to drive out the wheats which have been standards of excellence, by representing them as so deficient in gluten as to be unfit for his use. The farmer replies: "My white winter wheat had enough gluten five years ago, and commanded the highest price. Why has it become so poor in gluten?" It is hardly fair for the miller to attempt to cover his change of base from white to flinty wheats by this flank movement of asserting that soft wheats are deficient in gluten.

But if it is true that the hard and flinty wheats alone contain the desirable quantity of gluten, and that gluten is the last principle developed in the process of ripening, it is important for all classes that the facts should be known, because in the long run the truth can wrong no one.

We are told that the wheat of warm climates is richer in gluten and more flinty in texture than wheat of cold climates. Some persons seem to assume that the flinty quality of such wheat is in consequence of its large content of gluten, and that the hardness of any wheat is proportioned to its content of gluten; that since the wheat of this climate becomes more flinty by over-ripening, this change must be attended by an increase of gluten in the last stages of ripening.

The composition of wheat at dfferent periods of growth, seemed to me a subject of so much importance that I determined to give it a careful investigation. In such a study it was not my desire to view the subject from the standpoint of either the farmer or the miller. My aim was to establish data rather than to formulate opinions. It seemed to me that for such an investigation the most trustworthy conditions would be furnished by chemical analysis of the wheat at different stages of growth.

Selecting Specimens.

A field of Clawson wheat, which appeared to be very uniform in its growth and in the quality of its soil, was selected for one set of specimens, and another similar field of Schumacher wheat for a parallel set of specimens. I decided to take two sets of specimens of different varieties of wheat in order to eliminate the influence of individual peculiarities in either variety.

I began to gather my specimens on June 26th, and gathered a specimen of each variety at 9 o'clock A. M. for 21 successive days, a period embracing the progressive changes of the berry from its early formation, and before the contents of the berry were milky in color, up to the time of dead-ripeness. The Schumacher, however, was found to be somewhat in advance of the Clawson through the whole series, and the berry was in the milk at the first cutting. It seemed to keep about five days in advance of the Clawson.

A small bundle of the grain was cut, labelled, and placed to ripen and dry in an airy room, so as to give the best possible conditions in harvesting; and every bundle was subjected to the same treatment in drying and ripening. When fully dry, the grain was beaten out by hand, winnowed, and preserved in glass jars for chemical analysis. The grain, thus ripened on the stalk, as it slowly dried in the sheltered room, was different from what it would have been if threshed out as soon as cut; but the difference was the same for all, and the grain thus matured would represent the results secured by ripening under the most favorable conditions of harvesting at the several periods of cutting.

Condition at Time of Cutting.

The following diary will give some idea of the condition and development of the berry and the ripening of the stalk at the successive periods of cutting. I also include a brief statement of the condition of the weather, which may assist in explaining the rapid changes which took place at certain stages of growth:

Description of the Different Cuttings.

No. of Cutting	Mean Daily Temperature.	Clawson Wheat	Schumacher Wheat.
1	77½ Cloudy	Stalk green, berry watery and immature, a little milky	Stalks green berry milky, easily crushed by fingers, sweet.
2	75 Rain	Stalk green; leaves rusted slightly; berry very immature, somewhat milky	Stalk green; berry easily crushed by fingers, milky and sweet.
3	62° Rainy	Berry milky and sweetish, color of berry, green.	Berry more milky, but greenish, can be crushed by fingers; sweet.
4	68° Cloudy	Berry milky and sweet; still green in color	Berry, yellowish, milky dough; fingers stained by milk when being crushed.
5	70½ Clear.	Berry milky, sweet, green, no dough.	Straw becoming yellow, berry in milky-dough condition
6	72½ Clear.	Straw still green; berry milky, sweet, greenish in color, no dough.	Berry in the dough; crushed between thumb-nails, stains them
7	77½ Cloudy and raining	Stalk green, but leaves yellow; berry more milky, sweet, yellow-green	Straw purplish, but leaves green, berry in the dough and becoming yellow.
8	79° Hot and close, cloudy	Straw green; heads yellowish, berry yellow green thick milk, sweet	Head brown; berry deep yellow, stiff dough can be crushed by thumb-nails
9	66¼. Cooler and cloudy.	Stalks and heads turing yellow, berry milky-dough, sweet	Berry brown, hard, difficult to crush between thumb nails
10	71° Clear	Stalks and heads yellowish, green berry less sweet and more doughy	Berry crushes dry, grain harvested to day.
11	78 Rain in night.	Stalks yellowish; heads begin to bend, berry, thin dough, a little sweet	Straw purplish-red and fully ripe
12	73°. Rainy	Straw yellow; heads bend more, berry, In the dough, only a little sweet.	Heads bend over, stalks becoming brown and leaves dry
13	75°. Cloudy.	Heads bent over; berry, stiff dough.	
14	74°. Clear.	Berry crushes dry between thumb-nails; harvested to-day	
15	76°. Rain in night	Berry nearly dry and becoming hard, straw entirely ripe.	
16	75° Cloudy.	Berry dry and hard, stalks a full yellow	Ripe and over ripe
17	73½°. Clear.	Stalks over-ripe; berry shells on handling sheaf	
18	79 Clear.	Stalks become brittle	
19	81 Clear	Stalks become brown and brittle	
20	85½ Cloudy.	Manifestly dead ripe	
21	78°. Cloudy.	"Still dead"	

The Gross Product Per Acre at Each Cutting.

The amount of grain, as influenced by the period of cutting, is a question of practical importance to the farmer. In making this estimate, I confined my attention to the weight of perfectly dry berry, because I was satisfied that any variation in amount of grain attendant upon changes during growth arise from variation in the size and weight of the berry, and not from any change in the number of grains growing on a given area, since new grains would not form during the period of ripening, and all those already formed woud pass through the successive stages of development more or less completely. In this way there were eliminated several sources of error incidental to measuring the grain produced on a given area, such as the loss of grain in handling, and from incomplete threshing, varying productiveness of different plots of soil, etc. All broken kernels and foreign substances of every kind were removed, but no grains were removed in consequence of imperfect development. The grain was then poured into the scale-pan of a delicate balance, and ten grammes carefully weighed out, and the number of grains of wheat counted. This was repeated ten times for each specimen, and one-tenth of the sum of the whole was taken as representing the number of kernels of wheat for the weight of ten grammes.

The gross product of grain at the several stages of growth would be directly as the weight of the kernels, and inversely as the number kernels required to produce a given weight.

The average number of grains of wheat required to weigh 10 grammes at the several periods of cutting is given in the following table. I have also estimated the number of bushels of grain at the different periods of cutting on the supposition that each variety of wheat produced 30 bushels to the acre as its maximum. The table also contains the percentage of nitrogen, cellulose and ash, at the different periods of growth:

TABLE I.

Number of Cutting	Clawson: No. grains for 10 grams	Clawson: Bushels to acre	Schumacher: No. grains for 10 grams	Schumacher: Bushels to acre	Clawson: Nitrogen	Clawson: Cellulose	Clawson: Ash	Schumacher: Nitrogen	Schumacher: Cellulose	Schumacher: Ash
1....	764	11.23	484	16.11	2.62	4.03	2.72	2.72	3.40	2.26
2....	592	13.34	447	17.44	2.30	4.05	2.48	2.73	3.42	2.21
3....	531	14.91	455	17.13	2.37	3.55	2.30	2.75	3.31	2.19
4....	471	16.81	383	20.37	2.09	3.47	2.24	2.53	2.90	2.18
5....	454	17.44	365	23.00	2.04	3.29	2.04	2.51	2.86	2.05
6....	362	21.87	332	23.49	1.98	3.16	1.97	2.42	2.88	2.00
7....	384	20.62	320	24.37	1.94	3.18	[illegible]	2.38	2.85	1.97
8....	327	24.23	308	25.32	1.96	3.08	1.90	2.45	2.80	1.98
9....	316	25.03	304	25.66	1.90	2.80	1.80	2.37	2.83	1.96
10....	290	27.31	260	30.00	1.89	2.50	1.81	2.29	2.76	1.94
11....	276	28.69	267	29.21	1.96	2.79	1.91	2.41	2.74	1.92
12....	282	28.08	260	30.00	2.00	2.40	1.94	2.36	2.68	1.96
13....	267	29.66	261	29.88	1.98	2.25	1.91	2.39	2.45	1.91
14....	272	29.12	262	29.77	1.92	[illegible]	1.89	2.39	2.31	1.93
15....	264	30.00	266	29.36	1.92	2.26	1.87	2.37	2.26	1.90
16....	272	29.12	263	29.65	1.87	2.15	1.82	2.39	2.21	1.86
17....	270	29.27	260	30.00	1.97	2.26	1.86	[illegible]	2.24	1.87
18....	277	28.69	260	30.00	1.94	2.36	1.88	2.27	2.29	1.86
19....	268	[illegible]	262	29.36	1.94	2.46	1.77	[illegible]	2.33	1.85
20....	272	29.12	272	28.67	1.94	2.38	1.79	2.22	2.37	1.84
21....	268	29.55	276	28.26	1.92	2.39	1.78	2.21	2.36	1.8

The falling off in the seventh cutting of Clawson is curious, and I can offer no explanation. After the complete ripening of the grain there is a sensible decrease, showing that the common impression among farmers that there is diminished production of grain when harvesting is delayed too long, is well founded. This loss is not from careless handling of the grain or from drying by over-ripening The loss is a real one, though not large.

Chemical Analysis.

The wheat was powdered by prolonged beating in an iron mortar, and sifting this in a wire sieve of 38 meshes to the inch, and this process repeated till the entire quantity taken had passed through the sieve. The amount of water in each specimen was determined by prolonged heating in the steam bath, and cooling in a sulphuric acid desiccator till there was no further loss of weights, and the entire loss of weight was taken as water. The results of all analyses and other estimations are based upon water-free material.

The ash was determined by prolonged burning in a shallow platinum dish, kept at a low red heat till the ash burned white, and the ash was weighed with its natural contents of carbonic acid. The percentage of ash is given in table I, which shows a regular decline as the grain develops by formation of ash-free carbhydrates.

The cellulose was estimated by boiling in water containing 1¼% sulphuric acid, then with water, and repeating process; then with 1¼% caustic potash solution—then boiling with water and washing the crude cellulose with alcohol and ether, following Henneberg's method. The crude cellulose was then dried in water bath to constant weight; then incinerated and the weight of ash deducted, when the residual weight was taken as cellulose. No estimate was made of the small amount of nitrogen which it contained. The cellulose was of a light-brown color.

The percentage of cellulose regularly decreased from the earliest formation of the grain up to the time of ripening, the amount being greater in the first cuttings of Clawson than in those of Schumacher, because of its more immature condition. After ripening, there is an increase of cellulose, showing that over-ripening is attended by a loss of nutritive material, if we consider dense cellulose as indigestible. This increase of cellulose seems to be in intimate relation to the process of hardening exhibited in dead-ripening.

The nitrogen was determined in the usual way by combustion with soda-lime, and the amount of albuminoids estimated by multiplying the nitrogen by 6.4. The percentage of nitrogen is given in table I, and the estimated amount of albuminoids in the dry substance is given in table II.

TABLE II.

Dry.	Per cent gluten. N × 6.4—gluten: Clawson.	Per cent gluten: Schumacher	Water: Clawson	Water: Schumacher	Acreage products Lbs Albuminoids: Clawson	Acreage products Lbs Albuminoids: Schumacher.	Acreage products—Lbs Carbhydrates: Clawson	Acreage products—Lbs Carbhydrates: Schumacher
1.....	16.77	17.40	9.81	12.81	113.00	168.19	515.32	544.28
2.	15.10	17.41	10.96	11.97	120.86	162.18	627.27	805.31
3.	15.16	17.60	11.13	12.76	135.62	180.86	707.65	790.41
4...	13.37	16.19	11.32	12.69	134.85	197.87	805.66	962.24
5...	13.05	16.06	11.83	15.44	136.56	221.63	851.07	1,091.61
6...	12.67	15.49	11.26	13.74	166.25	218.63	1,075.64	1,122.00
7	[illegible]	15.23	10.85	12.0	153.74	221.78	1,020.37	1,169.95
8...	12.54	15.65	10.46	11.90	[illegible]	238.21	1,201.10	1,208.37
9...	12.16	15.42	10.83	14.93	[illegible]	237.40	[illegible]	1,230.46
10.....	12.09	14.55	11.66	11.64	195.13	262.9	1,364.95	1,452.50
11.....	12.54	15.17	12.41	12.04	215.86	255.87	1,434.63	1,312.79
12....	12.80	15.10	13.53	11.54	215.65	[illegible]	1,396.03	1,443.33
13.....	12.67	[illegible]	13.5	11.52	225.47	271.62	1,480.10	1,340.62
14.....	12.28	15.29	12.62	11.77	[illegible]	273.11	1,461.18	1,435.30
15.....	12.28	15.17	14.51	12.62	[illegible]	265.72	[illegible]	1,412.60
16.....	11.90	15.29	13.53	12.14	209.31	272.00	1,469.10	1,434.60
17....	12.80	15.10	15.54	12.44	224.79	272.80	1,459.01	1,453.22
18.	12.41	14.52	13.71	11.99	213.62	[illegible]	1,434.79	1,461.58
19.	12.41	14.40	12.58	12.17	[illegible]	[illegible]	1,479.07	1,464.61
20	12.41	14.20	12.85	12.05	216.83	244.27	1,458.51	1,393.51
21.	12.28	14.14	12.40	12.90	217.72	239.76	1,471.35	1,376.30

By table II. it will be seen that the highest percentage of albuminoids is formed in the earliest stages of growth, and it falls off regularly to the complete ripening of the seed, which contains relatively less albuminoids than at any previous period of growth. The claim that gluten is principally formed near the close of the process of ripening, and that the dead ripe wheat contains more gluten than wheat harvested at some earlier period of growth, receives no support from the results of these analyses.

The hard and flinty berry secured by over-ripening is no richer in gluten than the softer berry secured by early harvesting. I am now speaking of the percentage composition, and claim that a hundred pounds of early ripened wheat will contain a greater number of pounds of albuminoids than will a hundred pounds of the same wheat at a later period of ripening, when the accumulation of starch and other carbhydrates will have lowered the relative amount of albuminoids. But while the albuminoids are centessimally greater at early periods of growth, the acreage product increases with the growth of the crop up to a certain stage of ripening (when the grain crushes dry), and after this period there is no increase either relatively or absolutely. This will be seen by a glance at the table, which gives the acreage product of albuminoids on each successive day of cutting. If the dead-ripe wheat is better for the miller than wheat cut an earlier period, it is in consequence of the physical properties of the flinty berry, and not from any change in the chemical composition or increase of nutritive value.

Carbhydrates.

One significant change in the process of ripening was the rapid accumulation of starch. So rapid was the accumulation of the carbhydrates, that while the albuminoids increased in actual amount the increase of carbhydrates was so much more rapid that the percentage of albuminoids fell off continually up to the period of ripening, and when the storing up of starch was completed the ripening of the grain was also complete.

Straw.

No effort was made to determine the food-value of the straw at the different periods of cutting. The grain so far outranks the straw in money value, that the farmer is willing to sacrifice the straw, if thereby he may secure a corresponding increase of value in his grain; but the farmer is well aware of the rapid deterioration of the straw by allowing it to stand till the grain is dead-ripe, and if the dead-ripening is attended by no real increase of value in the grain, but an actual loss in the amount of grain, and the straw deteriorates greatly in the meanwhile, he may conclude that it is best to cut his grain as soon as ripe, and thus save himself from needless loss.

RECLAIMING THE ZUYDER ZEE.—According to recent reports it seems to have been definitely determined to reclaim the Zuyder Zee, Holland, whereby a large tract of land would be rendered available for agricultural and other purposes. The engineers in charge of this work have been engaged for 10 years past in preparing the plans, and the total cost is now estimated at not less than $46,000,000. The dyke will be about 24½ miles in length, and will extend from the city of Enkhuisen to the coast of the province of Overyssel. The top of the dyke will be built to the hight of 16 ft. above the level of the sea, which will bring it about 6½ ft. above the highest tide. The dyke will be formed from sand and faced with clay, and will be built of sufficient dimensions to resist the heaviest seas. It is intended to commence operations on the work at four different points, and the calculation is to have it completed in from seven to 10 years.

GREAT ENTERPRISES.—This is an age of great enterprises. A railroad is projected, at present on paper, from Jersey City to San Francisco. Capital, $150,000,000. Another company proposes to build a double-track from Jersey City to Washington. Another project contemplates furnishing a dozen Eastern cities with gas light from the mines. An irrepressible enthusiast proposes to bridge the Delaware at Philadelphia with a $4,000,000 bridge. It must be admitted, however, that the accumulation of wealth is so rapid that such enterprises may become practicable much sooner than old-time methods of calculation would admit of. Enterprises pushed to successful completion within five years would have been laughed down as chimerical 20 years ago.

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If your Storekeeper don't keep it, send to us direct, and we will with pleasure give you color cards, prices and such other information as you may desire.

WHITTIER, FULLER & CO.,

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REDLANDS.

The owners of the Redlands tract having disposed of a large portion of their lands, now offer for sale one hundred and fifty acres only, at $125 per acre, this being all that will be offered the present season.

Redlands is located on the south side of Mill Creek Ditch, between Old San Bernardino and Crafton.

The lands are a clayey loam, very similar to the lands at the head of Magnolia Avenue in Riverside.

There are no fences on the land and no brush to clear off.

The tract is being put on the market as rapidly as the water can be put upon the lands, and no faster.

One thousand acres of the tract have just been surveyed and platted, about nine hundred acres of which have already been sold. The price of the remaining tracts is $125 per acre.

The third five hundred acre tract will not be put upon the market before the winter of 1882-3. In the meantime the system of irrigation will be completed by finishing the large reservoir conducting the waters of the Company to the reservoir in pipes and flumes, and laying concrete pipes through the tract to carry water from the reservoir to the highest point on each tract.

The main avenues are one-quarter mile apart, 100 feet wide, and run from northeast to southwest for convenience of irrigation. The course of the sea breeze is parallel with these avenues.

The cross streets are sixty feet wide, and run at right angles with the avenues every half mile.

The tract is subdivided into ten-acre lots, with a town site composed of smaller blocks.

Its situation is the finest in the San Bernardino Valley, the view being unequalled, and the elevation near 2,000 feet above the level of the sea.

The climate is unsurpassed, the location being so far inland that fogs and northers are almost unknown.

The title to the land is United States patent, and is therefore beyond question.

The Water Right is ample and beyond dispute. It consists:—

First—Of fifty shares in the Sunny Side ditch, one of the oldest ditches in San Bernardino county. This water will be conducted from the Sunny Side ditch to the Redlands reservoir in a ditch flumed part or all of the way, so that no water will be lost by seepage. The ditch is already constructed and will be flumed before the next irrigating season. This is good for 500 acres of land.

Second—An eighty-inch stream developed in Santa Ana Canyon. This stream is being piped down to the head of the Redlands ditch, so that the entire water supply will be handled without loss. This stream is good for 500 acres more of land.

Third—Two reservoirs will be constructed. The work on these is now in progress. The largest reservoir will have a capacity sufficient to cover 500 acres of land 9 inches deep with water. There is an abundance of winter water to supply this reservoir. The second reservoir will be much smaller. The large reservoir will cover 17½ acres of land, and will be 60 feet deep in the deepest place

Fourth—The water will be conducted from the reservoirs to the highest point on each ten-acre tract by means of concrete pipes, thus saving expense and wastage in the distribution of the water. These reservoirs will irrigate another 500 acres.

These water rights, reservoirs, pipes, flumes, ditches, etc., are the property of the Redlands Water Company,—a company incorporated to furnish water to the Redlands tract of 1,500 acres, with 1,500 shares of stock. One share of stock goes with each acre of land, so that when the land is all sold the owners of the land own and control the water, and they only charge such price for the water as is absolutely necessary to pay running expenses for handling the water in the most economical manner possible, as there are no ditches to clean.

Lands shown and business attended to promptly six days in the week only, on the tract.

☞ Send for Circular containing Map and further information.

Postoffice address, SAN BERNARDINO, CAL.

JUDSON & BROWN.

REDLANDS, 1882.

California Wheat in the World's Markets.

California has continued during the whole of the present season, the chronic bear of the world's wheat market. But not satisfied with underselling all competitors in the various importing countries, she is now at the end of her victorious campaign, and with the view of carrying the war into Africa, shipping a portion of her wheat surplus to the Mississippi valley and Australia—her two leading rivals as exporters. While the States east of the Rocky mountains are themselves shippers this season to the extent of about 70,000,000 bushels, as compared with about 50,000,000 bushels from the whole of this coast, sample parcels of California wheat are now to be seen in every section of the country from Texas to Maine and from Minnesota to Florida. That samples of California flour are not equally plentiful all over the continent is simply owing to the silly and eccentric policy of the railroad which, instead of discriminating, if at all, in favor of the manufactured article, actually discriminates against it, to the great loss and injury of the State. In the same way Australia, while herself a large exporter, is now confronted by shipments of wheat, per steam and sail, from this coast. Nor is it at all unlikely that California wheat, which is now so plentifully distributed over the continent of Europe, has found its way into the Czar's dominions. Novel as such a state of things must appear, the logical result of great underbidding a seller is to compel him to become a purchaser, and this is what is now occurring simultaneously in the Western States and Australia. Perhaps the only large exporting country entirely beyond the reach of California is India, which is also trying to get up a reputation as a cheap seller. But since India has never yet shipped to an exporting country, although Australia is nearer to her than to California, she is still very far behind in the race. Instead of entering into a fierce competition with regard to raw material, like wheat, India acts more wisely in supplying California with bagging, from which she draws two profits—one for the jute cultivator and one for the manufacturer.

India as a Wheat Exporter.

But while India cannot be accused of any extreme effort to bear the world's wheat market, she has very largely increased her export, and in that way has ably seconded the efforts of California, shipping last year the respectable quantity of 30,775,912 bushels, compared with 10,137,440 bushels the year before, and promising to do still better during the present year. India has suddenly wheeled into line as the third largest wheat exporter, ranking next to the United States and Russia. Her export quantity, which is estimated at 40,000,000 bushels this season, it is thought may, in a few years, reach 100,000,000 bushels, unless one of her periodical famines should occur in the mean time. So long as India is a dependency of England, she must continue a large exporter of raw material; and if she finds wheat to pay better than cotton, or even than rice, she is sure to increase its cultivation, whatever risks she may run with regard to the supply of food for her own population. The Suez canal and the change from sail to steam have, by bringing India much closer to Europe, given an increased impulse to her export movement, and made her a greater competitor than formerly of this country. But the cultivators of India, like the farmers of the Eastern States, besides having their chief market at home, have the reputation of being tight holders, so that, as regards prices, competition is always likely to be kept within bounds. With good prices, India is always a free seller; but with low prices, she consumes more and exports less, making up the difference in specie and other valuables. It is different with California, whose crop and surplus are nearly alike, and who forces the latter on the European market, entirely irrespective of time, season, quantity or price.

The World's Deficiency.

Curiously enough while the bearing influence of California has made wheat cheap in Europe, it has no perceptible effect in the Eastern States and Australia. While wheat sells in this State at $1.60 a cental, it commands an average of $2.35 a cental in Eastern and Australian ports. Hence California competition, instead of injuring the farmers of the Northwest and of Australia, has fallen exclusively on ship owners, who in some cases lately have carried wheat across the Atlantic for nothing at all, and in one or two instances for even less than nothing—steamers having to pay a premium for the privilege of carrying it as ballast—while from South Australia the freights just now are reported to be only one-fourth the ordinary rates. In fact, from the standpoint of the Western and Australian farmers, California could have obtained a very high price for her surplus this season, and in fixing an extremely low one has done herself an irreparable injury. At the beginning of the campaign the world's wheat deficiency was estimated at from 25,000,000 to 50,000,000 bushels, and although this shortage has since been partly made up by India, a real deficiency still exists which can only be made good by entirely exhausting the reserves or drawing prematurely on the new crop. Shipments from Atlantic ports which aggregated 150,000,000 bushels in the two preceding years, will this season not exceed the original estimate of 70,000,000 bushels. The Australian estimate was also within the mark. The wheat crop of the seven colonies which aggregated 36,346,950 bushels in 1880, and 31,562,925 in 1881, amounts to only 27,000,000 bushels this season. Hence the export surplus, which amounted to 20,000,000 bushels in 1880, and 15,000,000 bushels in 1881, is not expected this season to exceed 10,000,000 bushels—the chief deficiency being in the South Australian exports. Stocks in the United States, Canada and Australia—the homes of 60,000,000 of people—will be exhausted this season as they were never exhausted before, while Great Britain and the Continent, which are even now living from hand to mouth, instead of drawing their summer supplies mainly from Atlantic ports, will have to rely almost exclusively on the fag end of the arrivals from Russia and California and the new crop in India. How to make both ends meet was from first to last the great problem of the season, so that the California and Oregon surplus of 50,000,000 bushels, instead of being a superfluous quantity to be got rid of at all hazards, was a vital necessity for Europe.

Natural End of the Bear Policy.

But while it was not the true policy of California to be the chronic bear of the European wheat market during the last 12 months, it is quite certain that she will only discontinue that policy through sheer exhaustion—such as is now expected to occur in Oregon long before her next harvest is reaped. Even in the case of California there may be some slight interval between the old and the new crop that will compel inaction and allow prices abroad to reach their natural level. During that interval California may see her way to organize a proper home market, so as to relieve the farmer from the burden of carrying the entire wheat surplus on his shoulders and prevent any undue pressure to sell in the future; that home market must have its foundation in a properly organized produce exchange and enlarged export flour industry. With these two requisites California wheat cannot fail to sell at fair prices in Europe, and to command a spot value fairly proportioned to the prices ruling in other exporting countries.—*Chronicle.*

The Willow as a Timber Tree.

And there are some trees which are deserving of more attention than has yet been given them in this country. The willows, for instance, have seldom been cultivated in a large way; and yet there are few trees so easily grown, or which will pay better for cultivation. They adapt themselves to a wide range of soil and climate. They grow on high ground and on gravelly soils not less than by the sides of streams, where we most commonly see them. They are of rapid growth and yield a large return. The osier-willow is especially useful, we know, for the manufacture of baskets, chairs and other articles of furniture, and we import it to the extent of $5,000,000 annually, when we might produce it easily in almost any part of our country. We hardly think of the willow as a timber tree or for the production of lumber, but only as yielding a cheap, poor sort of fuel. But in England the wood is greatly prized for many purposes. While it is light it is also tough; it does not break into slivers. Hardly any wood is so good, therefore, for the lining of carts and wagons used in drawing stone or other rough and heavy articles. It makes excellent charcoal, especially for the manufacture of gunpowder. It bears exposure to the weather, and boards made of it are very serviceable for fencer. Some species of it are admirable for use as a live fence or hedge. On account of its comparative incombustibility, the willow is eminently useful for the floors of buildings designed to be fire-proof. It grows to a large size and furnishes a great amount of lumber. There is a white willow growing in Stockbridge, Mass., which, at four ft. from the ground, measures 22 ft. in circumference and extends its branches 50 ft. in every direction. Tradition says it was brought from Connecticut in 1807 by a traveler, who used it as a riding switch. The Hon. Jesse W. Fell, in giving an account of experiments in tree-planting on an extensive scale in Illinois, says: "Were I called upon to designate one tree which, more than all others, I would recommend for general planting, I would say unhesitatingly it should be the white willow." Prof. Brewer says: "In England, where it is often 60 or 70 ft. high in 20 years, there is no wood in greater demand than good willow. It is light, very tough, soft, takes a good finish, will bear more pounding and knocks than any other wood grown there, and hence is used for cricket bats, for floats to paddle-wheels of steamers, and brake-blocks on cars. It is used extensively for turning, planking coasting vessels, furniture, ox yokes, wooden legs, shoe lasts, etc." Fuller says: "It groweth incredibly fast—it being a by-word that the profit by willows will buy the owner a horse before that by other trees will pay for a saddle." The basket willow, well cultivated, will yield a net income of $150 a year to the acre. On the whole, therefore, it would seem that the various kinds of willow, the economic value of which has been hitherto entirely overlooked in our country, are eminently deserving of attention, and will amply reward those who cultivate them.—*Methods and Profit of Tree Planting, in Popular Science Monthly.*

A Pleasant Mouth Disinfectant.—Hypermangate of potassa and hyperoxydate of barium, of each 24 grains, to be rubbed up into a mass, with sugar and glycerin, and divided into 144 lozenges. Every ill-smelling mouth will become by their use perfectly odorless.—*Medical Record.*

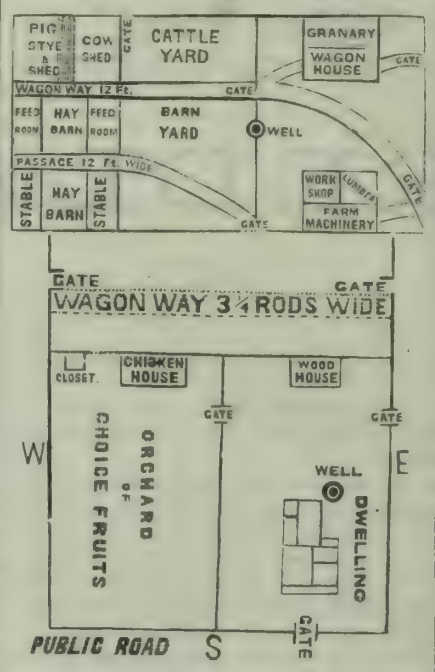
Agricultural Engineer.

Farm Engineering.

[Written for the Rural Press by Eldro.]

Farm Buildings Reserve.

We frequently hear the remark, "How I wish I had built my barn or my house on a different plan!" This reflection always comes when it is too late to have the buildings where one wants them, without going to a considerable expense in moving, besides racking the buildings, destroying the paper or plastering (if it be a dwelling), and otherwise depreciating the value of the property. Of course, one plan will not satisfy the multitude, because all do not have similar tastes. Much depends upon the location, the surroundings and the position as to streams, highways, hills, etc. But convenience of access, course of the prevailing winds, facilities for drainage and the consequent prevention of pestilential diseases must always be considered. The plan I herewith present is for a plat fronting south, containing a little more than an acre and a half (the two hitherto given combined in one diagram), including the wagon-way between the house and barn inclosures. If one desires to be more exact in the amount of ground to be occupied, he may lay off the grounds for the dwelling 12.65 rods each way, and he has .0225 of a rod more than an acre for his dwelling and its belongings, including a small orchard. He may cut off three and a half or four rods for a wagon-way from the rear end of the one-acre lot. This will permit him to drive in at the rear of his dwelling to unload fuel, to the south end of his barn to unload hay, to the north side of his poultry yard and to the north side of the smoke-house to load or unload meats, etc. The lane or wagon-way is sufficiently wide to admit of an ordinary two-horse wagon being turned around, thus saving the trouble of driving entirely across the lot and around half of the "farm buildings reserve" to get back into the road. In my second and third papers, I gave my readers diagrams, first, of the dwelling and surroundings, showing that a single acre of land is sufficient for a dwelling and necessary buildings and a small orchard besides; and, second, that half an acre additional would be ample not only for the live stock, but all other necessary out-buildings as well. I now present a detailed plan of the whole system.



That portion of the diagram south of the wagon way or lane is laid off in walks to the various buildings on that part of the reserve, and the positions of the trees indicated by dots both in the "house lot" and the "orchard reserve." If it is not desirable to allot one-half of this space (one acre) to the dwelling, another row (or two rows) of trees may be added to the little orchard, and a single walk on either side of the dwelling instead of two, as shown in the diagram, be made to answer every purpose. For a farm house, where the time for attention to shrubs and lawns is limited, I should prefer a frontage of say from 65 ft. to 70 ft. for the door yard, to one of over 100 ft., as indicated in the diagram. Suppose we give the dwelling lot a frontage of 68 ft. on the public road we can plant 36 trees on the remaining space of 140.725 ft. (or nearly 140¾ ft. front) by 142¾ ft. deep and still have room for the buildings belonging on the orchard lot, though the distance between trees must be 20 ft. instead of 21 ft., as shown in the diagram. This arrangement will do away with the keeping in repair of two extra walks, and will at the same time allow the farmer to devote the time to the orchard which would otherwise have to be given to the care of the grounds around the dwelling. It will be observed that I have added a "smoke-house" to the premises for the convenience of my farmer brothers—those who raise hogs. I have placed the furnace for furnishing smoke inside of the dwelling lot for convenience in obtaining fuel from the wood-house, while the smoke-house itself is in the orchard grounds. This building should occupy the extreme northeast corner of the orchard enclosure, whether the grounds are laid off as indicated in the diagram or by the modified plan above indicated.

I have indicated, by lines, the course which would be taken by teams in reaching the various buildings to the south of the dwelling and orchard, though without any studied effort at accuracy. However, I trust it will be clear to the reader, how convenience and general utility may be blended with accuracy and symmetry without any more expense than is necessary to erect such buildings in a way that would betray want of judgment, no matter whither considered from a sanitary standpoint, or one of mere convenience. I would not lay down arbitrary rules for the guidance of any one, but rather offer these suggestions as bearing on the convenience and health of those who are to make their farms not only places of business for the procurement of the means of livelihood, but homes for the enjoyment of life. What can present an air of comfort and good taste more happily than a farm house surrounded by trees with all the other buildings in the background? The house comes to the view of the traveler along the high-way first. The shelter for the domestic animals is, as it should be, beyond the home of the farmer and his family. I would rather see a plain cottage by the roadside, with the farm buildings beyond, than to see a princely mansion half hidden from view by a mass of farm buildings thrown together, as if the work of chance, for the use of domestic animals of the farm.

By the plan that I have here given, it is not necessary, even as a sanitary measure, that the building plot face south. It may face north, or east, or west with the same effect as to the communication of odors from the barn-yard, chicken-house, etc.; but care should be taken in case it is necessary to place the "reserve" lines on any other point of the compass, that the out-buildings are located "off the line of the wind." This may be done in many ways by changes in the diagram, which will readily suggest themselves to the shrewd farmer who is about to build. However, if you would not have many regrets after your buildings shall have been completed, do not, on any account, locate your buildings so that the first thing the traveler observes is—not your pleasant home, embowered with vines and surrounded by orchard trees—but your barn, chicken-house, cow-shed and pig-sty, while all that should be sacred to you—your home—is in the background, a monument of your bad taste—another apparent proof of the fallacy that farmers are devoid of taste.

I have endeavored to lay out a plan which, imperfect though it may be, will possibly afford some hint to those who really desire to work to a system; for the rest I rely upon the good sense and judgment of the farmer to modify it so as to suit each particular taste. As already remarked, I would lay down no arbitrary rule, but rather make a general plan combining sanitary effects with utility, convenience and good taste, so that, if possible, ill-arranged farm premises will not be so often met with as at present, and regrets for having built without a plan not be so often expressed.

Congenital Color-Blindness.

It is my belief that a large number, perhaps a majority, of the cases of congenital color-blindness have not their seat in the retina at all, but are cerebral in their character. In other words, I believe that in these cases the brain-center of vision has not the power to differentiate the various impressions it receives. This opinion will seem the more plausible when we remember that the sense of sight is a developed or educated one. Though we have received from our ancestors the potentiality of vision, every child that is born must learn to see for itself. Without here entering into a discussion of the question of the development of the color-sense, which has received much attention at the hands of Mr. Gladstone, Magnus, and others, it is safe to assume, with our knowledge of analogous matters, that the differentiation of colors is a power partly inherited and partly developed in the individual; and, moreover, we should expect to find this power, which is cerebral in its character, most strongly developed where the faculty was most used. And so we do find it. Women, who are much more concerned than men in the selection and comparison of colors, are rarely affected with color-blindness; and we all know how much quicker the feminine eye is in detecting slight differences in shades of color than is that of men who are not color-blind. In those cases of color-blindness which, for the sake of distinction, we shall call central, we believe that the brain-center of vision has not been developed to its full or at least to its ordinary power for discriminating between the impressions corresponding to the different colors. The retina may be capable of properly responding to these various impressions, and the optic nerve may carry them as separate impressions to the brain-center, but this has not the power of converting them into individual sensations.—*Popular Science.*

Wave Lengths of the sounds emitted by a man's voice in ordinary conversation are from 8 ft. to 12 ft., and that of a woman's voice 2 ft. to 4 ft. per second.

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Best Implements

I have ever tried, used either as a CULTIVATOR or a HARROW, for Volunteering, for working Summer-fallow, or land that has become compact by sun or rain, or for COVERING SEED. I have

Tested them Carefully,

Under all circumstances, and now have EIGHTEEN

OF THE LARGEST SIZED

At work on my Ranch, and I think them

Indispensable.

Have recently applied your IMPROVED FASTENERS to the entire number, and consider that they FULLY DOUBLE THEIR VALUE.

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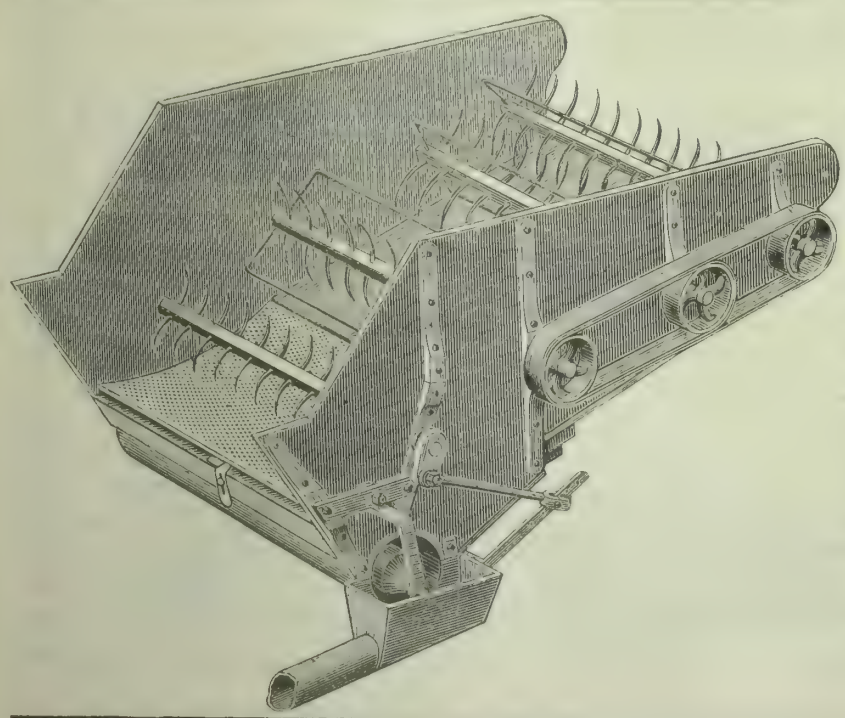

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Straw Agitator and Grain Saving Attachment.

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As connected with the Straw Carrier of a Separator. The use of this ATTACHMENT effects a great saving in Grain—Grain that without its use would pass over with the straw and be lost. The following testimonials from two threshing-machine men who used these ATTACHMENTS last season will show how valuable this improvement is, alike to farmers and threshers:

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W. H. ROWE.

WATSONVILLE, March 24, 1882.

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SERICULTURE.

Silk Culture in California.*

Prefatory Note.

This manual has been prepared at the request of the California "Silk Culture Association," and is published for the purpose of encouraging Home Silk Culture in California. It is believed that any person, by aid of the instruction given in these pages, will be able, without any further assistance, to plant and cultivate the mulberry tree, hatch and feed the worms, and prepare the cocoons for reeling or a market.

The proof is abundant that California can produce the very finest silk; for it has already been done. The superiority of our climate and soil for that business is acknowledged by every silk expert from Europe who has visited California.

The California Silk Culture Association has been untiring in its efforts during the past two years to establish this great industry upon a permanent basis, by collecting and disseminating information on the subject, well knowing that former attempts have failed mainly through an insufficient knowledge on the part of those who engaged in the work. With proper knowledge and a reasonable degree of industry and care there need be no failure; and the failures of the past afford no good room for discouragement.

All who wish well to the future interests of the State should encourage and assist in this good work. With proper efforts it is believed that the silk industry might be made one of the leading industries of the State, and a great boon and rich blessing to all our people.

The author acknowledges his indebtedness in the preparation of these pages both to Mrs. T. H. Hittell personally, and to the "Silk Growers' Instructor," prepared by her, and published in 1881. He has ventured upon the work himself only because Mrs. Hittell, in her present feeble state of health, has not been able to revise her own work. He is also indebted to the assistance of many others, who have had more or less experience in the business, here and elsewhere, and who have been consulted either personally or by letter. That the good work, so happily initiated by the ladies of this Association, may be carried on to a termination useful and profitable to the State, is the sincere wish of

THE AUTHOR

Introduction.

Silk culture, which has done so much for Europe, has now become an established industry in several of the States of the American Union; but in no State are the conditions more favorable for its future growth than in California. Its success here is certain.

In Europe the production of raw silk gives profitable employment to millions of people, while the subsequent manufacture of the raw material into thread, ribbons, dress goods, etc., forms one of the most important of home industries. The most prosperous nations there have wisely fostered this industry by national aid and by royal example. In France the raising of the silk worm, the forming and care of the cocoon, and the reeling of the silk is made an important part of the education of the children in nearly all the schools, convents and academies. Educators in the United States will also do well to turn their attention to this subject, and, especially here in California, it might be *so* applied as to furnish a practical solution of the perplexing question: "What shall we do with our girls and boys?" Silk culture is peculiarly adapted for the employment of children and women; and in no State in the Union are we so much troubled to find employment for that portion of our population as here. We have a large and rapidly increasing proportion of juveniles, and fully nine out of ten, both in city and country, need and desire to find some honorable employment during their minority. The necessity for meeting this demand is already imperative, and our present inability to do so is one of the most embarrassing problems which we now have to face.

To meet this emergency there appears to be no better plan than the one proposed by the California Silk Culture Association—the general introduction of silk culture here in all its branches; and it is a matter of no small congratulation that so many of the able, earnest and philanthropic ladies of San Francisco have stepped to the front to inaugurate this work. The success of this Association has already been great. Quite too much has been done to be even briefly reviewed here. We have no speculative purpose in our work. Our work is purely a labor of love. Its purpose is to encourage silk culture among the farmers and residents of our towns and cities until it shall become one of the chief industries of California, rivaling in its golden results even the gathering of the precious treasure from our hillsides, our rivers and our placers. The Governor of the State stands at the head of our Advisory Board, and our ranks are made up from all classes of the people. The wise, the wealthy, the patriotic, the influential, the earnest, and the hard-working men and women of city and country have joined hands in this endeavor to open up a new industry, which will add to our commercial prosperity as a State, increase the individual wealth of the masses, and greatly multiply the manifold blessings which local industries ever carry to the homes of a people.

Amid the mass of correspondence which our endeavors have elicited, asking for information in regard to the ways and means for establishing cocooneries, and the probabilities of success in efforts at silk culture in this State, perhaps none has been more important than a letter recently received from the California Emigrant Aid Society, which was referred to a special committee for answer. Your committee, having carefully considered the information sought, begs leave to report as follows:

ADAPTABILITY OF CALIFORNIA FOR SILK CULTURE.

Sufficient has already been done in California, by a few individuals, to prove that this State possesses peculiar advantages for success in all branches of the silk business, from the rearing of the worms to the manufacture of silk in every form in which it comes from the reel or the loom.

As early as 1861, the late Mr. Prevost, of San Jose, commenced raising the silk worm and producing cocoons, some of which were sent to Lyons and Paris. From both cities certificates were received pronouncing them of superior quality, both for reeling and in the character of the raw silk which they yielded. California cocoons were sent to the Centennial exposition at Philadelphia, in 1876, which, for size and beauty, attracted universal attention. Mrs. Keeney, of San Rafael, who has been experimenting in this direction for many years, sent some cocoons to the Smithsonian Institute, which were pronounced, by Prof. Henry, superior to any specimens which had been sent there from other countries, numerous lots of which had been received as samples.

Not only cocoons, but eggs also have been successfully sent to Europe. As early as 1865 or 1866, Mr. Prevost sent silkworm eggs of his raising to France, which were pronounced, by good judges, superior to those which silk growers there were then just beginning to receive from Japan, and for several years he had orders for more than ten times the amount he could supply. At one time he received an order for one hundred pounds, when he had only a few ounces to spare. In 1878 or 1879, Mr. J. A. Garbarina, of Jackson, Amador county, sent one hundred ounces of eggs raised by him to different places in Italy. As an evidence that they arrived in good condition and were healthy, he received orders begging him to save all the eggs he could raise and forward them the next season. These facts are quite sufficient to prove that we have in this a most lucrative business, upon which this State might enter with but little more capital than is found in the active brain and willing muscle of our farmers' wives and daughters. Let them now commence experimenting on a small scale, under the patronage and instructions of this Society, and within three years they will be able to realize a handsome profit from the costless venture.

Right here we may remark that it should be more generally known among our people that, for some reason not yet known, healthy eggs cannot be raised in Europe. Hence, for the past ten or fifteen years, silk growers there have depended on Japan for their annual supply of that product—the Japanese eggs being shipped to Europe *via* San Francisco and the Pacific railroad. California ought and might easily secure this business, which is already worth several millions per annum, and constantly increasing in importance. The business is, moreover, a very profitable one.

This Society has also recently received several certificates from Drs. Behr and Harkness, of this city, certifying to the unexceptional character of several lots of eggs of last season's California production. They were subjected to a careful microscopical examination, and were pronounced perfectly free from any trace of disease or any evidence of having been attacked by any disease, from which it would appear that California is not retrograding in the character of this product.

Mrs. Sellers, who resides near Antioch, in Contra Costa county, has been successfully raising silkworms for several years. She has now a mulberry grove of three thousand trees, which are remarkably healthy, and every season loaded with leaves and berries. Several other persons, among whom may be mentioned Mr. Gillet and Prof. Muller, of Nevada City; Mr. Larca, of San Mateo; Mr. Prince, near Angel's Camp; Mr. Garbarino, of Calaveras, and others are meeting with equal success.

SOIL AND CLIMATE.

The above facts and experiments prove that this business may be successfully prosecuted, not only throughout the great valleys of this State, but well up into the foothills and quite near the coast as well. The mulberry will grow almost anywhere in California; but, to meet with the best success, a rich, light, loamy soil is required. The ground should be plowed deep and well pulverized, so as to allow the rootlets to freely permeate the soil. If on a side-hill, a southern exposure should be selected. Among the most important advantages met with here is our freedom from thunder and lightning, and from rains during the feeding season; as feeding with wet leaves is almost sure death to the worms, and the jar from thunder, or some peculiar electric disturbance attending thunder storms, is often attended with fatal consequences to them, especially if it occur during the molting season.

VARIETIES OF THE MULBERRY TREE.

There are many varieties of the mulberry, but only four are considered especially suitable for silk culture—the *Morus alba* the *Morus rose*, the *Morus japonica* and the *Morus multicaulis*. Of these, the first named is considered the best. The latter is the most productive in foliage, and is, perhaps, preferable in the early stages of the leaf for feeding during the first age of the worm. But a more healthy maturity and better silk is obtained by feeding the *Alba*, after the first age.

PROPAGATING AND CULTIVATING THE TREE.

The mulberry may be propagated either from seed or from cuttings, like the grapevine. The latter is preferable. The cuttings should be from ten to twelve inches in length. Place them in the ground in rows. One end of the cutting should be set three or four inches deeper than the other. The upper end, which should also be the topmost end of the cutting itself, should be barely covered with soil. If it is left out of the ground, or exposed to the atmosphere, the hot sun and dry air of this climate is liable to dry it up, and thus prevent it from taking root. The rows should be set five or six feet apart.

A sufficient quantity of leaves can be obtained from a dozen cuttings, one year old, for feeding a few worms by way of experiment. In trimming, the custom in Europe is, for the first few days' feeding, to strip the tender leaves from the branches, and, in the later feeding, to cut the smaller shoots from the main branches and feed the leaves as they are thus attached. A considerable portion of the larger branches are suffered to remain, being simply stripped of their leaves and smaller branchlets during the season for feeding the worms. After the worms have commenced spinning, new leaves will form, and the mulberry orchard will soon be clothed a second time with a dense mass of foliage. When this crop of leaves has arrived at maturity a thorough process of pruning is commenced, by cutting off all the new wood within two or three inches of the main stem or stump. These branches are cut as wanted, and fed to cattle, which eat the leaves and small twigs most voraciously; and this is considered equal to the best fodder obtainable, especially for cows. It will be seen from the above that the foliage of the trees is kept constantly within easy reach, and that they are managed and grow much like the grapevine, with the only difference that the limbs of the mulberry grow more erect, branching off and upward from the main stem, instead of trailing like the vine. The product of this last trimming may, if desirable, be laid aside and separated into cuttings for further propagation. In stripping leaves from branches, the hand should always be moved upward along the limb, from the main trunk or branch to the tip. Otherwise the dormant buds would be injured.

FOR MERE EXPERIMENTAL PURPOSES

Only a few hundred worms are needed, and but little preparation will be required after arrangements have been made to secure a supply of leaves. A part of a small room, with one or two tables or some short boards properly placed, is all that will be needed.

The worms can be handled and separated or moved from place to place, to thin them out as they increase in size, or to clean the tables, by merely raising them up on the branches which may be placed before them for feeding. All this will be more fully explained when we come to speak of the cocoonery proper.

THE FEEDING ROOM, OR COCOONERY.

For a more extensive feeding—say from one hundred to one hundred and twenty thousand worms—a regular cocoonery should be fitted up, something as follows: A room 20x16 feet in area will be needed, and ten or eleven feet high. Such a room, if not new, should be carefully cleaned and whitewashed, and so guarded that neither insects or mice can invade it. Great cleanliness should always be observed about a cocoonery. All foul odors should be avoided. The fumes from tobacco should not be allowed on the premises. The room should have windows on opposite sides to secure good ventilation. In an especially hot climate it should be carefully shaded by trees or canvas. The entrance should be from the north. Windows and doors should be protected from the invasion of mosquitoes, yellow jackets, spiders, bats, etc., with nets. If a special building is constructed for a cocoonery, it would be well to let it rest upon posts several inches from the ground, and a circle of tar should be put upon the posts to intercept the approach of insects, as is sometimes done with trees, for a similar purpose. If a room in the house is used, posts which support the shelves should rest in basins of water, to protect the worms from ants. Care must also be taken to keep mice and birds away.

FITTING UP THE COCOONERY.

The worms should be fed upon shelves, which may extend entirely around the room, leaving a space for an entrance only. To economize room, the central space may also be fitted up with shelves. The wall shelves should be about three feet deep, with a space of about two and a half feet between them. The center shelves may be four feet or more in depth, as the worms upon them may be attended to from either side. This arrangement will give a series of four shelves in hight, and leave an alley-way three feet in width all around the room between the wall and center shelves. The upper shelves will have to be reached by the aid of a stool to stand upon; but they will be needed only during the last age of the worms.

For experimental purposes a few shallow pasteboard or wooden boxes of suitable size, laid upon tables, will be very convenient for feeding. If tables are used, they should have a small strip of wood fastened to the edge to keep the worms from falling off. The same precautions should be used on the shelves in the cocoonery.

HATCHING THE EGGS.

The eggs should be brought out for hatching as soon as the mulberry leaves have attained sufficient size for feeding, and while they are yet juicy and tender. They should be brought out in the evening from the cool place where they have been stored and immersed in cold water over night. In the morning they may be easily scraped with a dull case knife from the cloth upon which they have been laid, and to which they have been attached by the mother miller. Care should be taken in thus removing not to injure them. After being removed from the cloth they may be again placed in water, when the good eggs will sink to the bottom, while the poor ones and the dissolved gum may be poured off. The eggs should then be drained and dried, spread thinly upon convenient sheets of clean white paper and placed in a warm room to hatch. It is better that the temperature of the room into which they are introduced for hatching should be graduated, so that the change from cold to warm may not be too sudden. The eggs will hatch out in a temperature of seventy-eight to eighty degrees in from three to four days. When the worms begin to appear, spread over them a coarse mosquito netting, to be hereafter described. The worms will soon leave the paper on which they have been hatched and crawl through the meshes in the netting to the surface of the same in search of food. When the morning's hatch has crawled through, the mosquito frame should be removed to the feeding place. Each day's hatch should be marked, kept and fed by itself. This is especially important where the feeding is on a large scale. The importance of this will become apparent when the reader is informed in regard to the molting of the worms, which will be described further on. In hatching only a portion of the eggs should be exposed at first, as thus, in case of accident, the supply would not be entirely lost. This caution should be especially heeded by beginners. It should be borne in mind that the eggs which hatch the soonest produce the most healthy worms. The cocoons from these should always be selected for producing eggs again. Such worms also produce the best and heaviest cocoons. Worms which come out after the fourth day are scarcely worth feeding.

(TO BE CONTINUED.)

*The California Silk Growers' Manual, By W. B. Ewer, A. M. Published under the direction of the California Silk Culture Association, by Dewey & Co., office of PACIFIC RURAL PRESS, San Francisco.

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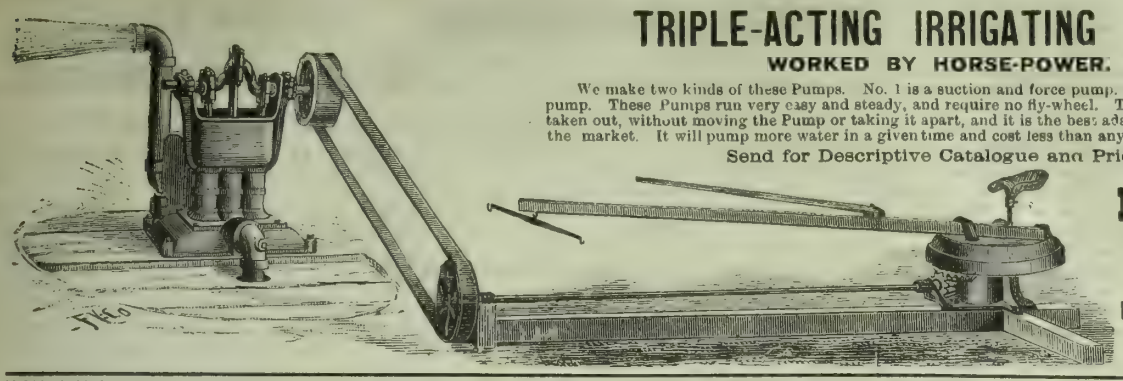

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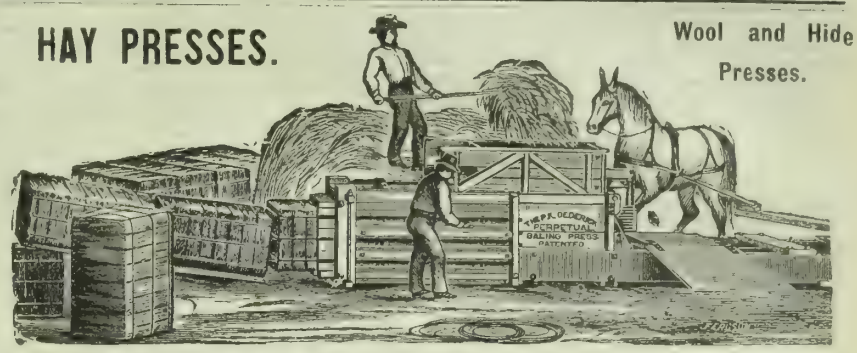

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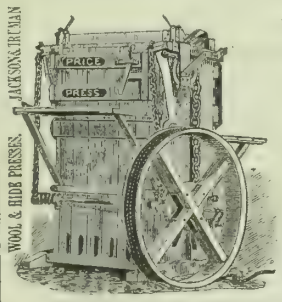

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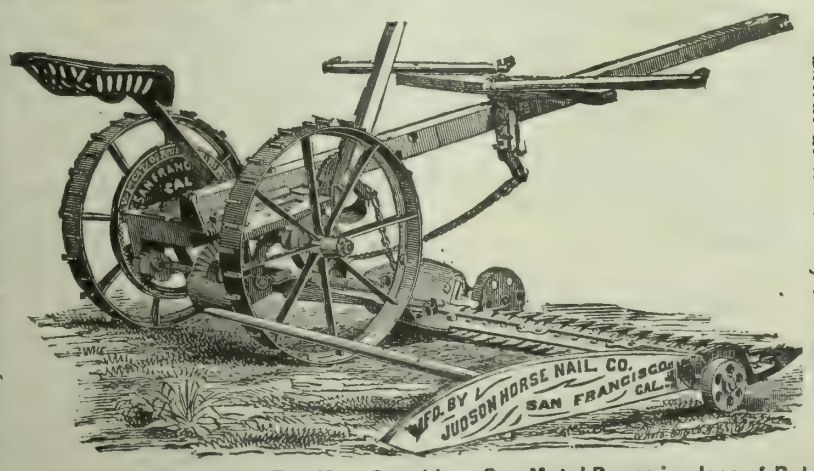

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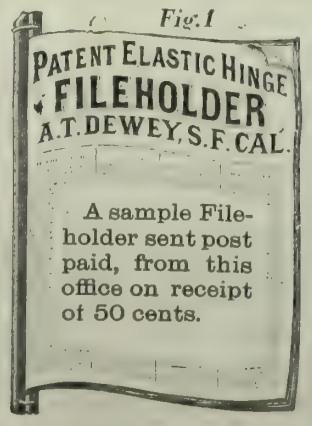

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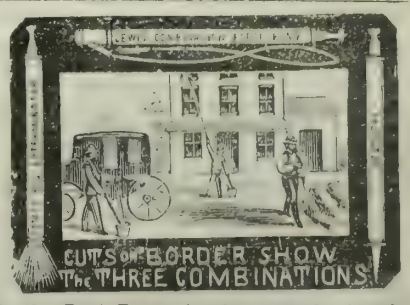

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Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of special mention:

GLOVE.—Henry S. Flood, S. F. No. 256,558. Dated April 18, 1882. In the construction of heavy gloves for drivers, wood-cutters, and others who must labor in inclement weather, leather, buckskin, and similar materials are employed for strength and to resist rough usage, while woolen, knit, woven, or other similar material is employed for warmth. Those, however, who are obliged to drive in cold, wet weather, find their gloves soon wet through from the back, and the hands become benumbed. Mr. Flood's invention is designed to overcome this difficulty, and it consists in the application of a waterproof backing, of any suitable material, to gloves, mittens, gauntlets, or other hand-covering of whatever material, so that the hands will be protected from wet, and the material of the glove itself will keep them warm. The method of construction is such that while the inner part of the glove may be made of a cheap and flexible material, the inventor avoids incasing the whole hand in rubber, or other waterproof substance, which will retain the perspiration of the hands, and soon make the interior of the glove wet and uncomfortable.

FLOATING DRY DOCK.—Life C. Watts, S F. No. 256,608. Dated April 18, 1882. This invention consists in a large lifting dock, or float, the whole bottom of which is an air chamber. It has upright sides, divided into compartments, designed for holding water to sink the dock. Between the upright sides is a wide channel, or space, large enough to receive a vessel. A smaller float, or pontoon, provided with appropriate devices for receiving and sustaining the vessel is adapted to be sunk upon the large dock, and the vessel is hauled in upon this pontoon. The large dock is adapted to be raised or sunk in vertical ways, or guides, and between two wharves, on which are supported water tanks provided with gates, from which the upright compartments of the large dock are filled with water and sunk to the required depth. These compartments are provided with gates operated from above, which, when opened, allow the escape of the water and the consequent lightening and raising of the large dock, together with the small pontoon, from which the water is allowed to escape, and the vessel. There are minor points of construction which are required for the operation of the device.

LOGGING ENGINE.—John Dolbeer, S. F. No. 256,553. Dated April 18, 1882. In the logging business, after trees have been felled and cut up into suitable lengths, the logs often lie in inconvenient and inaccessible places, and as many of the redwood logs which are cut upon the Pacific coast run from 4 to 12 ft. in diameter, they are very unwieldy to handle. In order to bring them to a point where they can be loaded for transportation or brought to the mill, it is necessary to employ large teams of horses or oxen. This invention is designed to provide a convenient apparatus, which is mounted on a sled-like frame, and is provided with appliances for the guidance of ropes and tackle, by which the engine may move itself to any desired position, where it may be secured by suitable chains, by which it is anchored to stumps or trees. By means of attachments and guides, the tackle may be made to work at any angle and in any direction from the apparatus, so as to move a log to any desired point.

CHAIR BRACE.—John A. Gallagher, Chinese Camp, Tuolumne county, Cal. No. 256,562. Dated April 18, 1882. This is intended to hold securely the legs of chairs to prevent them from spreading. It consists of wires or rods attached to the bottom of the legs and to the seats above, said wires being made to converge toward the center under the chair and between the legs, and there adapted to be tightened or loosened by the separation or approach of two plates or disks operated by a thumb-screw.

CHECK FOR HORSES.—Martin M. Nathanson, S. F. No. 255,882. Dated April 4, 1882. This check for horses consists of a peculiar strap adapted to fit over the nostrils of a horse with means of tightening the same when desired. It further consists of a lever and cord, or strap attached to said nose strap, by means of which the nose strap may be tightened from a vehicle to which the horse is harnessed. A brake attachment to the vehicle, working in connection with this check, has been devised.

PRINTED WORDS VITIATE AN OLOGRAPHIC WILL.—W. E. Milford wrote a will which doubtless he firmly believed would stand the strongest test; but, as the law in this State provides that an olographic will must be wholly in the handwriting of the testator, and as, unfortunately, in the will in question, the date line was printed, Judge Finn was compelled to declare the document invalid. It was consequently found necessary to fall back upon a former will executed at Paris some years ago. The executors of the will, one of whom is at Paris and the other Rio Janeiro, have sent by cable a renunciation of their trust, and letters testamentary, with the wills annexed, have been granted to the widow.

HALCYON DAYS.—"Halcyon Days" is the title of a new book by Wilson Flagg, published by Estes & Lauriat, of Boston. It is made up of a great many essays upon different trees and shrubs, and these essays are interspersed with others on more general subjects, such as "Autumn Woods," "Foliage," "Homeliness of Nature," "Lily Ponds," "Mountains," "The Primitive Forest," "Thoreau," "Wayside Shrubbery." A perusal of the volume will implant in the most prosaic reader, a longing desire to sling knapsack on shoulder, and with a staff in hand, wander a summer long amid those scenes upon which nature has lavished her enchantments, and where a world of beauty spreads before the eye, and the ear is filled with the rapturous melody of every dweller within its sacred limits.

California Fruit-Growers' Convention.

This important convention was held at Sacramento, Dec. 6, 1881, and the report embodies in its 24 double-column pages a great deal of valuable information on fruit growing, transportation, marketing, destruction of noxious insects, etc. Our California friends, who are engaged in pomology and horticulture, throw an amount of *vim* and earnestness into the work which even our "orange maniacs" fall short of equalling; and, though contending against many obstacles, they have achieved a wonderful success in the culture of the many rare and valuable fruits to which their country is adapted. We have heretofore expressed the opinion that California can never enter into successful rivalry with our own State in the culture of the orange, but we cannot withhold our admiration and respect for the zeal and perseverance shown in this industry by our Western neighbors, and must cordially say that they *deserve* success, even if they cannot compel it; and, further, that the field is ample enough for us all. The discussions of the convention are very instructive and interesting, and the little pamphlet may be had for 10 cents, by addressing Dewey & Co., office of PACIFIC RURAL PRESS, S. F., Cal.—*Florida Dispatch, Jacksonville, Fla.*

"Indispensable," etc.

The PACIFIC RURAL PRESS has long since made itself indispensable to the farmers and horticulturists of the Pacific coast, but, not content with past achievements, it continues to improve, and embraces every opportunity for procuring information, facts and figures for its readers. The current number, of date April 8th, is a most excellent one, all its various departments being filled with interesting and useful matter, with full reports of the citrus fairs of National City and Riverside. A number of the addresses delivered at the latter fair are also reproduced, with minutia gleaned by Mr. Dewey, who was present, and this, with the well selected miscellany, completes a paper second to none of its class.—*Los Angeles Daily Times.*

Laurel Glen Fruit Farm.

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Garey's Orange Culture.

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OAKDALE, Stanislaus Co., Cal., March 6, 1882

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THE FIELD.

Notes in Tulare and Fresno.

EDITORS PRESS:—Since the letter from Fresno, your correspondent has had opportunities to make further examination of grain crops, orchards and pasturage, both wild and cultivated, by a ride among the ranches near Selma, and in the Mendocino district near Sanders P. O.; also around Kingsburg and Wildflower, and, more lately, throughout the Mussel Slough country, near Hanford, Lemoore and Grangeville, and thence to Visalia.

First, I must mention that the windy weather prevailing the week previous to the excursion from San Francisco to Fresno, planned by Mr. Thos. Hughes and sons, was a discouragement, and very unfavorable. As these blighting winds were not followed by rains, and have not been since, the country has been of late by no means in its best dress, except, perhaps, all trees and all alfalfa pastures that are well rooted. For this reason, partly, no doubt, fewer came than were expected to Fresno—between 150 and 200. But, as reported, they were well taken care of, and had a pleasant jaunt and recreation.

The Wild Pasturage,

Consisting almost exclusively, this year, of alfilerilla, or "fil-e-re," as everybody calls it, and hence the most nutritious, improves much on the sandier lands south of Fresno.

Throughout the southern part of Fresno county, and in most of eastern Tulare, this most invaluable pasture plant, now spread over California as if a native, though introduced by the Spaniards from southern Europe more, perhaps, than a century ago, is growing much ranker and longer than on the harder lands north of Fresno City. Your readers will please observe that our Spanish name for this plant is intentionally spelt here *alfilerilla*, and not *alfilarilla*, as it is usually found in print, and even in our truly great and valuable "Botany of California." Why? Because it is derived from *alfiler* (not *alfilar*), "a pin," and means, literally, "the little pin;" so called from the peculiar shape of its seed-pods. If any doubt this, they can find that "alfiler" is correct by consulting any good Spanish dictionary.

Mr. Frank Dusy, whose pleasant home is about nine miles southeast of Fresno City, and who has had an experience of some 10 years with large bands of sheep in that locality and in the neighboring Sierra Nevada, assures me he has never seen the filere thicker or better than this year. He accounts for its dense growth, largely to the exclusion of other wild plants, by the fact, that less hardy plants being dried out by the long drouth between the October and February rains, left the filere almost in sole possession of the plains. To Mr. Dusy's widely extended experience

On the Plains and in the Mountains,

I am indebted for some valuable facts, worthy of record in the RURAL. Having already sheared half of the large number of sheep in his charge (April 20th), he found the clip about 25% less this spring than usual, because of the great scarcity of feed up to the latter part of February. I learn the same result with other flocks of sheep dependent entirely on wild pasturage, but will show farther on a different result, where sheep have been kept the past winter on alfalfa and alfalfa hay. Mr. Dusy finds the following advantage in taking his sheep to the mountains, as he does every summer to the high pastures around Mt. Goddard. His experience shows an increase from this cause of a pound and a half of wool per head in the fall clip, or about one-third of the entire yield. This increase, he finds, pays more than all the expenses of the mountain trip. Again, he finds that when sheep are on abundant green feed here, they drink no water, unless sick, say usually from Dec. 1st to May 1st, but such a season as this from the last of February to May 1st. So, in the mountains, because of plenty of green feed, sheep seldom drink. Mr. Dusy's test of the best time to start with his sheep to the mountains is when, in spring, they begin to show signs of thirst. This year he expects to start about May 1st, last year he started April 12th, and one season found it necessary to start as early as March 24th.

A Living Glacier.

Few of our citizens have traveled as extensively in the Sierra Nevada of our district as has Mr. Dusy, especially in the regions surrounding Mt. Goddard (14,000 ft.) on the headwaters of the middle fork of Kings river and the south fork of the San Joaquin. He describes as seen last summer by himself and party, what is more like an Alpine glacier than anything I have seen or heard of in our Sierra, except the living glaciers found by John Muir on Mt. Lyall. It was six miles east of Mt. Goddard, on what may be called the Goddard ridge—the divide between the south fork of San Joaquin river and the middle fork of Kings. It was a mass of clear, bluish ice, estimated to be 80 ft. thick at its upper or deepest edge, where a vast crevice was found, 10 ft. wide, between it and the snow above it. It was about a mile long, and from 500 to 600 yards wide. On its edges were moraines, composed of shattered slate, which Mr. Dusy describes as forming there the upper portion of the slope. At the lower end was a great mass of this slaty debris, which was being shoved along over a substratum of solid granite. He judged that its movement down the canyon last summer was about ten ft., as that was the width of the deep crevice on the upper edge between the ice and snow. I asked Mr. Dusy if he and his party saw the curious and interesting

Red Snow.

His answer was, "miles of it."

By the way, while lately in San Francisco, I had the pleasure of examining with Dr. Harkness, through his strong microscope, the odd and pretty globules of the very small microscopic water plant, *protococcus navalis*, which gives to this snow its red or crimson color. We examined what our party brought from the red snow fields of the Kern region, and what Dr. Harkness found last summer on the Wasatch mountains, Utah. These minute globules appear as round as a ball. The Doctor informs me that they propagate by subdivision, and that the best way to preserve them for examination under the microscope, is to melt a bucketful of the red snow, let the coloring substance settle, pour off the water and save the red sediment, of which you will have about a tablespoonful. Dry this and it forms a pinkish powder, a few particles of which can be moistened and mounted for the microscope at any time. What I had brought from the mountains had been kept uncorked for six months in the water melted from the snow. Some globules from this had retained their red color; others had lost their color but retained their form. Globules Dr. H. had dried, had the brilliant, translucent color of a ruby. Except in richness of color the globules from the two localities were exactly alike in shape, etc., showing, as Dr. H. said, that the plants from the Wasatch and the Sierra are identical, and are, beyond question, the veritable *Protococcus navalis*, discovered first in the Arctic regions and then in the Alps, and in late years found in abundance on many of the higher mountains of Colorado, Utah and California. I found our old friend, Prof. Sanders, whose hospitality I enjoyed, and whom I had not seen for some time, now reaping the benefits of his experiments and work. He ships seeds and trees in considerable quantities. It is an interesting fact that he is raising our mountain cedars *(libocedrus)* in large numbers and with fine success.

A new post office, named Fowler, is soon to be established at Fowler's Switch, ten miles southeast of Fresno. Many tracts of good land are being rapidly improved near there. A mile northwest of there, Messrs. Kirby & Pearson are preparing to improve five sections, in charge of Mr. A. T. Covell, formerly manager of the Washington colony, and 100,000 grape cuttings have already been set out on 160 acres. This has been leveled, and is irrigated by a 20-ft. ditch from the Kingsburg canal. A. E. Briggs has also put out, a mile north of Fowler, 80,000 cuttings of raisin grapes and 10 acres of mixed orchard, mostly peaches. A half mile west of Mr. Briggs, Mr. Reed has put out 100,000 cuttings to root for next year. The two last named irrigate from a new branch of the Church ditch. Mr. Frank Victor, Secretary of the new Fowler's ditch, is improving, with his partner, Mr. G. M. Edmunds, 320 acres, a mile east of Fowler. Part of this they have sold as colony lots, in tracts of 10 to 50 acres, at $15 to $20 per acre. They and their friends propose to devote these lands entirely to mixed fruits and grapes. The new ditch will rapidly develop this district when it is completed.

Abundance of Water.

Though everywhere in the parts of Tulare and Fresno counties mentioned above the drying northwest winds for two weeks, followed by no rain whatever, have most seriously injured all grain crops, even on the best irrigated lands. An encouraging fact is that all the irrigating ditches from Kings river, on both sides, from the Gould ditch near Fresno City, the one taken out highest up, to the Rhoads ditch near Lemoore, the lowest down, are now, and have been during the past week, running all the water their capacity will admit. Hence the country adjacent is being wet up very rapidly. But, unfortunately, this abundant flow of water has come too late to save many a field of wheat that looked very promising two weeks ago. It is useless to close our eyes to the fact that a large acreage of small grains on all our lands south of Stockton, including our irrigated districts, is ruined beyond redemption. Where wheat was not too far gone, it has been improving greatly during the past week on all land that is getting thoroughly wet. We have had several very warm days—the mercury on the plains ranging in the shade from 90° to 98°. This has melted the abundant snow in the mountains rapidly. From Thursday to Saturday last Kings river rose three feet below the railroad bridge at Kingsburg. The Kaweah has risen enough to supply all the water needed by the Visalia and Farmersville ditches, and now Mill creek, Cross creek and other lower channels into which the Kaweah divides on the plains, are running good bodies of water. So the Settlers' and Lakeside ditches in the Mussel Slough district, and others supplying the fine ranches around Tulare City, are beginning to receive their quota of water, at least, after a vast amount of local troubles about the division of water, when the streams were running low. Much wheat being already ruined, this increase of water assures summer crops of corn, melons, beans, etc., which must now be the only resort of many farmers, even on our most thoroughly irrigated lands.

Fruit crops and alfalfa pastures, however, were never finer than now in all our irrigated districts.

Now about

Sheep on Alfalfa

The past winter: Mr. J. T. McJunkin, a successful farmer of much experience, near Hanford, has fed his sheep alfalfa and alfalfa hay all winter and spring. His spring clip averaged four and one-half pounds of wool per head, the same average as last year. Hence, there has been no such decrease here as on wild feed. He says his sheep drink rather more water when kept on green alfalfa than on green wild feed, drinking a great deal when kept on the hay. He has kept from 900 to 1,300 head of sheep the year round on 100 acres of alfalfa, running them on stubble about two months in the summer. During these two months he makes one cutting of hay from his alfalfa and stacks it, to use in case his sheep need it the next winter, if it is a cold one, and the growth of the alfalfa is short on that account. In a good season, such as last year, he can keep 15 sheep per acre on his alfalfa pasture. He thinks 13 sheep per acre pay better than grain such a season as this. There is great danger of sheep bloating, if taken from short feed to rank alfalfa, but he avoids this by not allowing them to graze down one pasture too low before he puts them on another. He also keeps large lumps of rock-salt in his pastures, as a partial prevention of bloat.

Tulare county continues to add to

Blooded Stock.

W. W. Foster and S. F. Gilmore have lately shipped to Lemoore, from Gen. Wm. T. Withers' Fairlawn farm, near Lexington, Ky., a dark bay four-year-old, named Altimont. His sire was Almont, the sire of Piedmont, lately brought from the same farm by Gov. Stanford; also of Algona, brought to Lemoore some time since. His dam was Belle Miller, by Blackwood. Altimont weighs about 1,300 lbs., and is 16½ hands high. He was brought here at a cost of about $2,400. His service is $50. The railroad charges on his trip to California are interesting. When he was shipped from Kansas City, the railroad would not ship him to Goshen or Lemoore, but to Stockton, nearly 150 miles farther. Now, he was taken off at Goshen, never passing over the 150 miles to or from Stockton, yet the railroad company made his purchasers pay $33.10 additional fare from Stockton to Goshen, as if the horse had gone to Stockton and returned. What will our Eastern friends think of such railroad freaks? Mr. Gilmore assures me these facts are as stated here. Flora, by Whipple's Hambletonian, has come from Alameda to visit Altimont, and R. B. Blowers, of Yolo county, has sent up to Lemoore a fast pacer, both by rail.

I must close this letter, already longer than usual, by giving

The Season's Rainfall.

By months, to date, at Hanford, Lemoore and Visalia. That at Hanford is measured by the State Engineer's gauge, and at Lemoore by the railroad gauge. For the latter I am indebted to Mr. James Dickson, the accomodating and popular railroad agent there. The Visalia record is from the Signal Service observations, kindly furnished by E. Van Dijk, in charge at Visalia:

	Hanford.	Lemoore.	Visalia.
August	0.05	0.05	0 03
September	0.00	0.20	0.09
October	0 25	0.51	0.31
November	0 30	0 35	0.52
December	0.11	0.10	0.27
January	0.54	0 35	0.87
February	1.68	1.20	1.86
March	1 43	0.70	1.47
April	0 97	0.96	0.95
Total	5.33	4 42	6.37

Visalia, May 1st. J. W. A. W.

NOVEL SURGERY.—An interesting surgical operation was recently performed in Philadelphia, which consisted in the dividing of the tendons of the third finger to give more perfect freedom in piano-playing. This operation is considered of great importance in a scientific point of view. It is well known that musicians have had difficulty in using the third finger with that freedom of force necessary for skillful operation on the piano. This is for the reason that the tendons connecting with the second and fourth fingers form over that of the third, and act as a martingale, restraining it. Professor Zickown, in his researches for a remedy for this difficulty, consulted Dr. Forbes, after having failed of encouragement from other eminent surgeons. Dr. Forbes confidently asserted that the remedy would follow an operation. The musician had in his employ a mulatto who was an expert in music, but who suffered the same difficulties that retarded others. This young man consented to have the operation performed. He was taken to the Jefferson medical college hospital. Two small incisions were made on the back of the left hand, on each side of the extension tendon, and the accessory tendon on each side was divided. The effect was electrical. The finger was at once released from its constraint and given equal facility of stroke with the others, and its strength was increased rather than impaired. It is asserted that the hand will be in no wise deformed by the operation, while the effect is that pupils in music who undergo the process will be in an instant advanced several years in power and facility of operation on the instrument. The colored boy will submit his other hand to the operation in a few days. The success is exciting very marked interest in musical and scientific circles here and elsewhere.

Quarterly Coinage Statement.

The coinage of the four United States mints for the month of March embraced 1,211,400 gold pieces, 2,302,000 silver pieces and 2,815,300 nickel pieces. The total was 7,328,700 pieces of a value of $12,009,024. This is the largest amount of coin turned out by the mints in a long time, if not the largest amount ever made during a single month. The coinage of double eagles last month, though comparatively small, was actually larger than the combined amount for the previous two months. Eagles led last month in the gold coinage. All descriptions of coins now made by the Government, with the exception of the lowest three gold pieces, were executed last month. In February the whole list was represented for the first time in about a year. Following is a statement of the coinage of all the United States mints for March and for the quarter ending March 31, 1882:

	March.	Quarter.
Double eagles	$1,040,000	$1,986,500
Eagles	5,608,000	10,580,750
Half eagles	2,993,000	11,808,925
Quarter eagles	.....	63
Three dollars	.....	75
Dollars	.....	25
Standard dollars	2,300,500	6,900,500
Half dollars	250	350
Quarter dollars	125	175
Dimes	50	70
Five cents	36,155	112,290
Three cents	33	53
Cents	30,911	118,018
Totals	$12,009,024	$31,507,794

This amount is nearly as large as the coinage for 12 months a few years ago. The number of half eagles coined for the past quarter is probably larger than for any previous quarter. For general use this is the most convenient of all the gold coins, though in sections where metallic money is the dominant currency, as in California, bankers show a strong dislike to the multiplication of half eagles.

HOW TO TIGHTEN WAGON TIRES.—Apply some leather rings between the shoulders on the outer ends of the spokes and the corresponding portions of the felloes, which may be done as follows: Procure a number of small pieces of leather, from an inch and a half to two inches in diameter; with a sharp knife and a compass, or a cutting punch, make round holes in the center of these pieces, and make a straight cut from the hook to the outer edge of the pieces, so as to form open rings. The holes must be made of a size that will nicely fit the tenons on the out ends of the spokes. Place a fulcrum on the top of the hub, on which place your lever, with the short end under the felloe, near a spoke; have an assistant bear down on the other end sufficiently to raise the felloe, and expose the shoulder and tenon of the spoke, open your leather and fit it nicely around the tenon, holding it to its place while your assistant relaxes the lever and settles the felloe firmly upon the spoke by a blow or two upon the tire. Having repeated the process with a sufficient number of spokes to make the tire all right, trim off the projecting leather even with the surface of the spokes and your task will be done. If your pieces of leather should be spongy, hammer them down before using.

HOW ODORS ARE PROPAGATED.—According to this view, the ordoriferous bodies, or their molecules, have no more to do (in the sense of physical impact) in producing the sensation of smell, than a luminous body—a candle or the sun—has to do (by impact) with the sensation of light. There is corporeal impact or touch in neither case. Of course, with each melecule as a center of activity, the effect will be more pronounced at the immediate surface (as with all radiant energies) than at any distance. And, undoubtedly, particles of disintegrating, odorous matter are often brought in contact with the Schneiderian membrane; but the sensation of that impact, if there be any, would be of touch, not of smell, as surely as that, from that point of contact to the sensorium, the effect or influence is conveyed by a vibration—a wave-motion in the "fluid" of the nerve-duct—as the undulations of the luminiferous ether are propagated along the course of the optic nerve to the seat of sensation, where they are translated into light and color. But, if, for any portion of the distance between the internal sense and the fragrant body, the odor, like light, is but a motion, it is safe to assume it for all. The analogy of this mode of odors to that of light and sound, is something in its favor.—*Popular Science Monthly.*

A DISPATCH from Bonny, on the west coast of Africa, dated April 23d, reports that there has been heavy fighting between the natives of New Calibar and the followers of Okojumbo. The latter were the aggressors. The slaughter is described as fearful. At least 2,000 persons were killed. It was feared that the Jaga would take part in the fighting, thus causing a war which would become wholesale carnage. There was much alarm among the English inhabitants. It is expected that two gunboats will be ordered to the scene.

BARNUM'S receipts for six weeks at the Madison Square garden, New York, are reported at the enormous sum of $425,000. Rapid transit over the elevated railroads is credited with having made possible this phenomenal business.

MEXICANS are making $4 and $5 a day working the placers in Holcomb valley.

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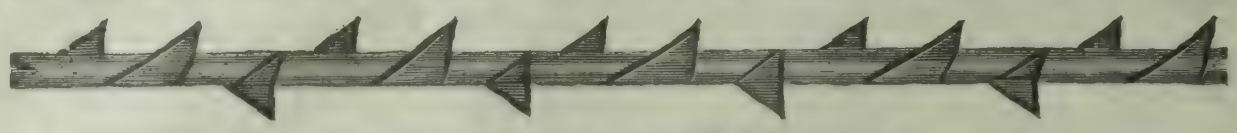

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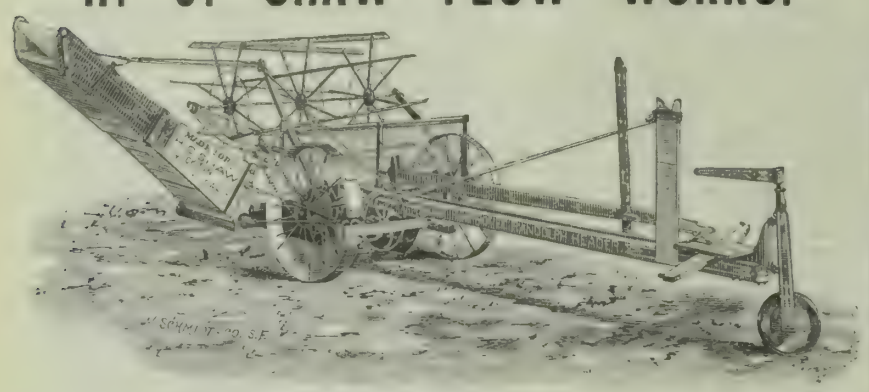

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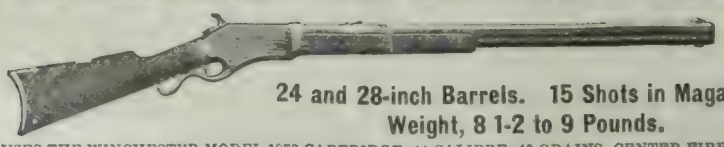

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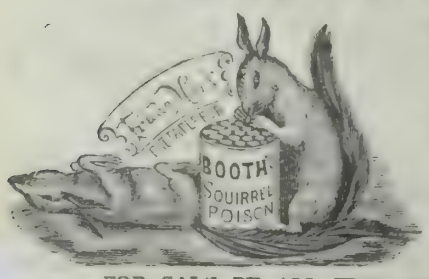

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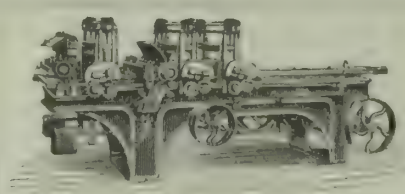

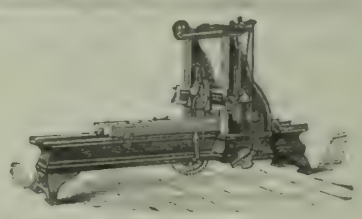

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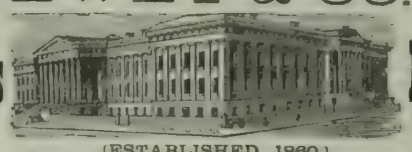
Scientific Press  Patent Agency.

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The Imperial Egg Food is now used in every part of the United States, and its sale on this coast is simply wonderful, our order book showing that every customer continues to order, while every letter received is a testimonial for the Imperial. Numerous preparations have from time to time appeared called "Egg Foods," but as they did not conflict in name or trademark, were perfectly allowable, and, after due time, failing in their purpose, passed out of the market, while the Imperial continued to gain favor everywhere. In purchasing, see that you get THE IMPERIAL and none other, no matter how nearly similar in name and appearance.

PRICES OF IMPERIAL EGG FOOD:

1 Pound Package, 50 Cents. 6 Pound Box, $2 00,
2½ " " $1.00, 25 " Keg, 6.24

Sold by the trade generally, or address,

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IMPORTANT!!!

That the public should know that for the past ELEVEN years our SOLE BUSINESS has been, and now is, importing (OVER 100 CARLOADS) and breeding improved Live Stock Horses, Jacks, Short Horns, Ayrshires and Jerseys (or Alderneys) and their grades; also ALL THE VARIETIES of breeding Sheep and Hogs. We can supply any and all good animals that may be wanted, and at VERY REASONABLE PRICES and on CONVENIENT TERMS. Write or call on us. LICK HOUSE, San Francisco, Cal., October 22, 1881 PETER SAXE & HOMER P. SAXE.

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Oakland Poultry Yards.

Cor. 17th and Castro Sts., Oakland, Cal.

GEORGE B. BAYLEY,

Importer and Breeder of all the best known and most profitable varieties of Land and Water Fowls.

Brahmas, Cochins, Houdans, Langshans, Leghorns, Polish Hamburgs, Bronze Turkeys,

And the new fowl, AMERICAN SEBRIGHT or EUREKA.

AGENT FOR THE PACIFIC INCUBATOR,

WHICH IS MADE IN THREE SIZES,

No. 1,	Capacity,	550	Eggs,	Price,	$90.
No. 2,	"	250	"	"	65.
No. 3,	"	180	"	"	45.

Guaranteed to hatch NINETY PER CENT. of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season For further particulars send stamp for illustrated circular to GEO. B. BAYLEY, Box 1771, San Francisco.

MAKE HENS LAY.

An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

STANDARD POULTRY.

American Sebrights, Langshans, Plymouth Rocks, and Brown Leghorns. Choice birds for sale in pairs, trios, or breeding pens Eggs for hatching in season. Satisfaction guaranteed. Write for prices. Address,

O. J. ALBEE, Santa Clara, Cal

ITALIAN SHEEP WASH.

EXTRACT OF TOBACCO.

Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

SCAB OF THE SHEEP.

The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

For particulars apply to CHAS. DUISENBERG & CO. Sole Agents, 314 Sacramento St., San Francisco.

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Thoroughbred

Spanish Merino SHEEP.

We offer for sale 400 HEAD OF YOUNG EWES AND RAMS. Prices always reasonable and terms liberal. Quality and condition superior to any flock in this State.

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Silos, Reservoirs, Head Gates,

ARTIFICIAL STONE AND CONCRETE.

RANSOME, 402 Montgomery St, S. F. Send for circular.

YOUR NAME on 50 fine Chromos, or 40 Comic transparent cards, 10c. Wise & Co., Clintonville, Ct.

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To Keep Hens Healthy

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1-lb. Boxes, 40 Cts 3-lb. Boxes, $1.
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B. F. WELLINGTON, Prop'r.

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425 Washington St., San Francisco.

SHORT HORNS FOR SALE.

I have for sale at my ranch, near Oroville, Butte county,

12 Young Short Horn Bulls,

From one to two years old. Price from $100 to $200 each.

ALSO

50 Short Horn Cows and Heifers.

All these cattle are red Durham—all thoroughbred. They are offered at private sale to those wishing to secure good stock. MOSES WICK.

Oroville, Butte Co., Cal.

Short Horn Bulls For Sale.

The undersigned now have for sale a few choice Thoroughbred and high grade bulls from the best milk strains Our herd consists of "Young Marys," "Daisies," "Imp Britannias," etc. Prices Reasonable.

HYDE & MOORE, Visalia, Cal.

We have for sale at our farm at Mountain View, thoroughbred

BERKSHIRE PIGS

From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880. Pigs from Imported Boar and Sow, $25 each. From Imported Boar and Thoroughbred Sow, $10 to $20. Our Imported Pigs are as nice Pigs as there are in the State. Address JACKSON & TRUMAN, S. F.

JONESA POLAND CHINA FARM.

ELIAS GALLUP, Hanford, Tulare Co., Cal.

Breeder of pure bred Poland China pigs of the Black Beauty, Black Bess, Bismarck, and other noted families. Imported boars, King of Bonny View, and Gold Dust at head of the herd Stock recorded in A. P. C. R Pigs sold at reasonable rates. Correspondence solicited. Address as above.

LITTLE'S SHEEP DIP.

Price Reduced

TO $1.25 PER GALLON.

Twenty gallons of fluid mixed with cold water will make 1,200 gallons Dip.

Apply to FALKNER, BELL & CO., San Francisco

75 LOVELY FRENCH CHROMO CARDS with name on 10 cents, Chas. Kay, New Haven, Conn.

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Of California,

SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,00

In 10,000 Shares of $100 each.

Capital Paid up in Gold Coin, $531,200.

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LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

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TERM DEPOSITS are received and interest allowed as follows: 4% per annum if left for 6 months; 5% per annum if left for 12 months.

BILLS OF EXCHANGE of the Atlantic States bought and sold.

ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1882.

Lands for Sale and to Let.

FARMING LAND

For sale in large or small tracts, on easy terms, in the best parts of the State

McAFEE BROTHERS,
328 Montgomery Street, S. F.

Good Crops Every Season Without Irrigation.

Free by mail, specimen number of "*The California Real Estate Exchange and Mart*," full of reliable information on climate, productions, etc., of

SANTA CRUZ COUNTY.

Address "*Exchange & Mart*," Santa Cruz, Cal.

Stock Range.

Parties wishing to purchase good stock raising lands, unaffected by severe drouths, will do well to address the undersigned. The lands can be purchased cheap, in lots from 100 to 2,000 acres. It is partly low table and rolling land, partly clear and level. Good for vine and fruit raising. Will raise vegetables and all kinds of grain. Crops certain every year. Near town and a $10,000 public school house. Price, $3 to $5 per acre. Good local market for fruit, vegetables, grain, poultry and dairy produce. Address the proprietor,

EDWARD FRISBIE,
Anderson, Shasta Co., Cal.

Calvert's Carbolic

SHEEP WASH.

$2 per Gallon.

After dipping the Sheep, is useful for preserving wet hides, destroying the vine pest, and for wheat dressings and disinfecting purposes, etc. T. W. JACKSON. S. F., Sole Agent for Pacific Coast.

The American Driven WELL WATER SUPPLY SYSTEM

FOR MINING, IRRIGATION, MECHANICAL DOMESTIC & MUNICIPAL PURPOSES

Send for Circulars.

BABCOCK & CO.,

40 Merchants' Exchange San Francisco, Cal.

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Rare Cabinet of Minerals.

A physician who has long resided in the mines and other parts of California, and gathered a large and valuable collection of minerals and other specimens, offers the same for sale at a bargain. Address "Cabinet," box 2361, San Francisco.

To Fish Raisers.

I am now ready to sell Carp which were imported by me from Germany in 1872, in lots to suit. Address

J. A. POPPE, Sonoma, Cal.

News in Brief.

SEVENTY thousand emigrants arrived in New York during April.

THE estimated reduction in the public debt for April is about $14,000,000.

CARP have been grown in Los Angeles county weighing as high as seven pounds.

ONE hundred thousand immigrants are expected at Castle Garden this month.

THE carpenters of Cincinnati have struck for 50 cents extra a day, and building has stopped.

MARK SHELDON, the well-known Sewing Machine agent, has removed to 9 and 11 First Street.

BERTHS on the first-class transatlantic steamers from New York have nearly all been secured up to the 1st of July.

A GREENSBURG, Ind., mob took a prisoner from jail and hanged him for a crime of which he had just been acquitted.

UTAH furnishes 40,000 head of beef cattle to Eastern markets every year, and cattle raisers have realized about $15 per head.

THE assessment on the broad gauge railway tracks in Colorado amounts to $8,250,000, and the narrow gauge to nearly $7,300 000.

A CHICAGO jury has awarded $3,500 to a tenant whose family was made ill by sewer gas, the landlord having represented that the plumbing was perfect.

BEE men are making preparations to secure a large yield of honey this year. They all say there have never been better prospects for their business than this year.

SUGAR cane cultivation has been developed largely in northern Utah recently, because the sirups which have been brought from the East are often inferior to the home product.

BENJAMIN F. DELANO, formerly United States Naval Constructor, died in Brooklyn on Saturday, aged 75. He had a good deal to do with Perry's expedition to Japan and Kane's expedition.

A REAL estate agent in Chicago says: "There are no cheap houses being built now. Capitalists will not put their money into little cheap cottages while there are no laws for getting possession from non-paying tenants."

THE Board of Trade has adopted and transmitted to Washington a resolution urging Congress to take action towards preserving the navigation of the Sacramento river and the bay of San Francisco.

COINAGE at the United States mint, in Philadelphia, during April, aggregated 4,481,000 pieces, valued at $6 057,300, and made up of 315,000 eagles, 422,000 half eagles, 500,000,000 silver dollars, 433,000 five cent pieces, and 2,500,000 cents.

THE last incoming French steamer brought a numerous party of Frenchmen, who were under contract to proceed to the vine-growing districts of California, where full employment, at good wages, is guaranteed them. Protection gets encouragement from immigration.—*Philadelphia Press, 2nd ult.*

IN the House of Commons, Labouchere complained of the existence of slavery in Hongkong, on the Gold Coast and in the Malay States of North Borneo. He said the slave market at Hongkong supplied women to California, Australia and China.

THE marvelous increase in the growth of New York may be guessed at from the statement that since the 1st of January 900 houses, valued at $10,000,000, have been erected within its municipal limits—enough to make a good-sized town, as the New York *Herald* aptly remarks.

THE bill compelling railroads in the State of Texas to carry passengers at the uniform rate of three cents a mile, passed the Legislature and was signed by Gov. Roberts within fifteen minutes after it was presented to him. It goes into operation 90 days after the close of the present session.

OHIO's new law closing all places of business, saloons included, on Sundays, was very generally observed throughout the State last Sunday, April 27th, Cincinnati alone excepted. In that city the saloonists defied the law by openly violating it. The arrest of several hundred saloon keepers was the consequence.

CAPT. ROUDAIRE'S scheme for making a great inland sea to the south of Algeria and Tunis is attracting a great deal of attention in France. M. Roudaire is of the opinion that $15,000,000 would amply suffice to cover all expenses. In eight years, at most, he thinks that the work might be finished.

A TELEPHONE company met and conquered unforeseen difficulties in laying an underground cable recently between Attleboro and Mansfield, Mass. The wires were to be buried along the line of a railroad, but the farmers of the region refused to loan their horses or oxen for Sunday toil, and the plow was accordingly attached by a beam to a locomotive, which did the work with a rush.

Information on Fruit Growing, Transportation, Marketing, Etc.

The Official Report (by J. H. WHEELER, Secretary), of the CALIFORNIA STATE FRUIT GROWERS' CONVENTION, held at Sacramento, Dec. 6th, 1881, as published in several issues of the PACIFIC RURAL PRESS, has been issued in a pamphlet containing 24 solid reading pages. Besides the transactions of the State body in council, the work reports the ideas and practical experiences stated by individual fruit growers.

Mailed postpaid from the PACIFIC RURAL PRESS office, S. F., on receipt of 10 cents.

ST. JAMES HOTEL. First-class in every respect. When you go to San Jose, take free coach to the St. James. TYLER BEACH, Proprietor.

Our Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

G. W. MCGREW—Santa Clara county.
M. P. OWEN—Santa Cruz county.
J. W. A. WRIGHT—Merced, Tulare and Kern counties.
JARED C. HOAG—California.
B. W. CROWELL—Humboldt and Trinity counties.
H. W. MILLER.

Cylinder Printing Press for Sale.

A large cylinder Hoe printing press, for country newspaper work, can be bought cheap by addressing

Press, Box 2361, S. F.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances. The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

SAMPLE COPIES.—Occasionally we send copies of this paper to persons who we believe would be benefited by subscribing for it, or willing to assist us in extending its circulation. We call the attention of such to our prospectus, terms of subscription, etc., and request that they circulate the copy sent.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.

Orange Culture in California.

With Appendix on Grape Culture.

Table of Contents.

1. Preface and Introductory Remarks on Orange Raising; 2. Selection of Seed, and How to Raise the Plants; 3. Selection of a Site for a Nursery; 4. Transplanting to the Nursery; 5. Selection of Site for an Orange Orchard; 6. Selection and Purchase of Trees; 7. Plan of an Orchard; 8. Transplanting to Orchard; 9. Cultivation; 10. Irrigation; 11. Crops Admissible in Young Orchards; 12. Fertilizing; 13. Pruning an Orange Orchard; 14. Diseases of Orange Trees; 15. Destructive Insects, and Remedies; 16. Enemies—Protection, Prevention and Cure; 17. Age at which an Orange Orchard will Begin to Fruit; 18. Profits of Orange Growing—Ten Acres Enough; 19. Picking and Packing; 20. Cost of Planting an Orange Orchard in California and Conducting it to a Paying Basis; 21. Our Markets, Present and Prospective.—Over Production Considered; 22. Where Can Orange Trees be Successfully Grown in this State? 23. Varieties; 24. Best Varieties to Plant; 25. Seedling Versus Budded Trees; 26. How to Bud; 27. Grafting; 28. Propagating by Cuttings and Layers; 29. Stocks for Budding and Grafting; 30. Lemon Culture; 31. Limes; 32. Citrons; 33. Orange Wine and Brandy; 34. Rules for Ascertaining the Average Number of Trees or Plants that Can be Set on an Acre; 35. Recipes; 36. Appendix on Grape Culture, by L. J. Rose.

Preface of the Author

A residence of 28 years in this State, the last 16 of which have been devoted exclusively and uninterruptedly to semi-tropical orcharding and nursery business, enables me to write from a practical standpoint possessed by few. A lover by nature of the beautiful in horticulture, I have applied myself assiduously to assist in developing the latent interests of the business of citrus culture, by endeavoring to procure the best of the different species, by propagating and experimenting on a large scale, and carefully noting the different varieties. The field has been and still is wide and ample. However much I may have learned, I feel that we are only on the threshold of learning what are the most successful conditions for the profitable citrus culture of the future.

I shall endeavor to present the subject in as brief a form as possible consistent with the many ramifications of the business, using no technical phrases, the object being to adapt the work to the understanding of all that may at any time be engaged in the business.

It is important that all that venture in this business start right. This book is written to enable them to avoid many of the sunken rocks on which hundreds have been wrecked. I do not purpose to present myself vainly and egotistically to the public as one who has learned all there is to know about citrus culture, but as one who is willing to give his long and practical experience conscientiously.

I believe there is yet much to be learned on this subject, and that this may the more speedily be done, I record my views, believing that by comparing them with the experience of others the object may be sooner attained.

Hopeful that this work will fill a niche unoccupied at present, and that it will result very beneficially to this advancing branch of horticulture, I humbly dedicate it to all lovers of the beautiful in nature, and especially to all lovers of this health-giving, profitable industry.

THE AUTHOR.

An Important Work.

This book is written by Thos. A. Garey, of Los Angeles, after many years of practical experience and observation in orange culture. The subject is an interesting as well as important one, containing information which all reading Californians should possess, whether engaged in orange or grape culture or not.

There are few writers in America who could have contributed more richly or abundantly on this subject than has the author.

The book is issued in good style and print, and convenient form. It contains 225 pages, 12mo.

Printed and Sold at the Office of the "Pacific Rural Press," San Francisco.

Mailed (postpaid), in stiff cloth binding, for $1.25; in flexible cloth, $1. Agents wanted for this and other books.

Volunteer Testimonials from Those Who Have Used Booth's Exterminator.

MILES STATION, May 25, 1881.

MR. BOOTH:—I used one pound of your Squirrel Poison and found Seventy-two Dead Squirrels. It is the best I ever used. Send 5-lb can Poison. Yours, E. MILES.

SAN BENITO STORE, June 28, 1881.

A. R. BOOTH, San Luis Obispo, *Dear Sir:*—The can of Squirrel Poison I got from you did all you represented to me, and I shall buy no other squirrel poison after this Booth's Squirrel Poison is King.

Yours respectfully, HUGH RILEY.

ANNUAL STATISTICIAN OF 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 502 Taylor St. Price, $4.

S. F. Market Report.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, May 3, 1882.

There has been rather more business done this week, and Wheat has changed hands more freely, at a slightly improved figure. The latest advices from abroad are favorable, to wit:

LIVERPOOL, May 2.—Wheat: California spot lots are firmer, at 10s 1d@10s 5d. Cargo lots are 47s for just shipped, 50s for nearly due, and 50s@50s 6d for off coast. Cargoes are strong, and there is a good demand all around.

The Foreign Review.

LONDON, May 1.—The *Mark Lane Express*, in its review of the British Grain trade for the past week, says: There has been no general improvement in the Grain trade. The supply of native Wheat in last week's markets was more liberal, but the proportion of fine qualities was very small. Trade in foreign Wheat on the spot in London was quiet. At Liverpool, the trade list during the week for Californians were generally 1d ℔ ctl lower; Maize was weaker; Barley and Four unaltered. Trade in floating Wheat was very much restricted, owing to the small supply. Sales of English Wheat during the week, 41,762 quarters at 46s 11d ℔ quarter, against 29,918 quarters at 44s 9d ℔ quarter for the corresponding week of last year.

Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive according to the latest advices:

In port.	1882.	1881
Engaged, tons	60,400	30,500
Disengaged, tons	15,500	1,200
To arrive, tons	218 600	280,300
Total supply, tons	294,500	312 000
Decrease for 1882, tons		17 500

The amount of tonnage under engagement yesterday to load Wheat was 54,200 tons, against 26,000 tons for the corresponding date last year. The British bark *John Trahey*, 1,147 tons, was chartered prior to arrival to load Wheat to Cork, U. K., Havre or Antwerp at £3. The British steamer *Meath* will return to Hongkong. The asking rate for wooden vessels to Cork, U. K., Havre or Antwerp is 62s 6d, with 60s bid. An offer of 61s 6d was refused for the British iron bark *Bolivia* to Liverpool.

Eastern Grain and Provision Markets.

NEW YORK, April 29. The Breadstuffs markets have been characterized by no little irregularity in values, although the volume of business has not been large. The European cables have furnished reports of lower foreign markets, but the decline in prices has not been extensive. Both public and private reports agree in qualifying the markets abroad as being slow. Provisions have shown no prominent improvement, and prices are about steady.

New York Dried Fruit Markets.

NEW YORK, April 29. In foreign Fruits, Raisins are held firmly, but the movement is slow; Prunes are quiet, at 6¼@6¾c; Currants are barely steady at 5½@5¾c, and other goods are steady.

Eastern Wool Markets.

BOSTON, April 28th.—There is a steady demand for wools, the sales of the week amounting to 1,894,000 of all kinds. Ohio and Pennsylvania fleeces have been sold at 41@42c for XX, with choice selections at 43@44c. Ohio X, comparatively choice, sells quite high, as XX sales having been made at 42@43½c per pound. Michigan X fleeces are very scarce, and good bales of X have been sold at 41½@42c, but other lots, not up in condition, have been sold at 38@40c. Unwashed fleeces remain unchanged, and have been selling principally from 24@30c for fine and medium grades, with some lots of choice medium at 33@34c. Choice old Kentucky combing has been sold at 27@28c, and these are considered extreme prices for this grade. California wools have been quiet, and it is a surprise to the trade here that the new clip can find purchasers at the high prices demanded in San Francisco. Pulled wools have been in demand at 25@48c for common and good supers, the best Eastern and Maine selling at 45@48c. In Australian wools there have been further sales of 103,800 pounds at 42@46c. One hundred and fifty-five thousand pounds of Montevideo wool have been sold at 31c., costing 75c for the scoured brands. Carpet wools, quiet.

NEW YORK, April 29.—On the market for domestic the tone has been slow, and naturally somewhat tame, with careful buyers enabled to pick up comparatively cheap parcels now and then, even allowing for the ruling low rates. There are, however, a few lots left on which owners are as yet unwilling to give way, and reports intending to convey the impression that a strong effort is being made to realize are sheer nonsense. The market, under the natural influence of stock demand, is bad enough, without the aid of extra force from holders; and, besides, this supply is not so large or uncomfortable as to make it necessary that Wool should be converted into cash, except possibly on the part of a few members of the trade. It is not a general collapse, by any means, but more of a slow dry rot, growing out of the cautious, hand-to-mouth policy of consumers, with the possibility that hard wood may be reached at any moment, and matters work into a better shape. The account from California and Texas continues strong, and the rates reported in some instances appear to stand relatively higher than those asked here. Sales included 35 bales Spring California at 22@25c; 22,000 lbs Fall at 14@14½c; 3,500 lbs Scoured at 66c.

BAGS.—Rates are about the same as last week. Sales have been somewhat limited. On 'Change, yesterday, for June Calcuttas $9.07½ was bid and $9.15 asked ⅌ 100.

BARLEY—Brewing Barley is considerably higher than last week, but Brewing and Chevalier are unsought. Sales were: 100 tons No. 2 Feed, September, $1.12½, and 100 tons do, October, $1.12½. Bids and offers were: No. 2 Brewing, August or September, $1.22½ bid; No. 1 dark Brewing, June, $1.75 asked; No. 1 Feed, spot, $1.62½ bid, $1.67½ asked; May, $1.67½ asked; July, $1.35 asked; August and September, $1.17½ bid, $1.20 asked; seller 1882, $1.15 bid; No. 2 Feed, May, $1.65 asked; August, $1 10 bid, $1.12½ asked; September, $1.10 bid, $1.12½ asked; October, $1.10 bid, $1.12½ asked; seller 1882, $1.08½ bid, $1.11 asked; No. 1 Chevalier, May, $1.70 asked.

BEANS—There is no change, except in Limas, which are quotable lower.

CORN—Corn is dull and quiet, and rates are nominal at $1.02½@$1.65 for large Yellow.

DAIRY PRODUCE—Butter rates are still held up, and surplus receipts are being packed. Cheese is quiet and still lower, the best California going at about 13½c.

EGGS—Eggs are improving, selling at 23@25c ⅌ doz.

FEED—Bran is the chief gamble on the call. Strenuous efforts are being made, both to advance and depress prices for June and July, as a large number of heavy contracts will fall due in these months. This naturally produces unusual activity, and sales have been very heavy thus far this week. Yesterday, sales footed up 600 tons, as follows: 30 tons spot, $14.50; 10 tons do, $14; 525 tons June, $15.25, and 25 tons July, $12.50. The spot market was a dollar higher than on Monday, and June sales were also a dollar higher. Other bids and offers were: May, $14.50 bid, $14.62½ asked: December, $15 asked.

FRESH MEAT—Beef prices are unchanged. Pork is higher about ½c ⅌ lb. Mutton and Lamb is in large supply and lower.

FRUIT—The first cherries came in from H. A. Bassford, on Monday, and sold at $1 ⅌ lb. Strawberries are becoming more abundant and sell to-day at $11@$15 ⅌ chest.

HOPS—Hops are unchanged here. By telegraph from New York the market is reported firm with a good inquiry.

OATS—Oats are quiet but firmly held as supplies are small. On 'Change call, bids and offers were: Extra Choice, spot, $2.02½ bid; May, $2 bid; July, $1.55 bid; No 1, spot, $2 asked; July, $1.55 bid; September, $1.30 bid.

ONIONS—The range for good to choice is $1.25@$1.50

POTATOES—Potatoes are again elevated and supplies small, notwithstanding importations from Oregon and Salt Lake. Many of the latter arrive in poor condition. Humboldts and Petalumas have sold up to $2 75 ⅌ ctl

PROVISIONS—Bacon and hams are ½c higher and are firm.

POULTRY AND GAME—There is no change in this list and the trade is quiet

VEGETABLES—Asparagus has arrived in large amounts and the price has fallen to 75c@$1 00 ⅌ box. Green peas are ½c cheaper.

WHEAT—Wheat is held about 5c higher ⅌ ctl, although private sales are going at a little less advance. More is now selling quietly than on call. On Tuesday wheat on call was buoyant, and bids, although few, were high, several shippers evidently wanting stock. Holders, however, were indifferent about letting go, and no sales were recorded. Bids and offers were: Extra Choice, spot, $1.70 asked; May, $1.65 bid, $1 70 asked; No. 1 White, spot, $1.65 bid; September, Port Costa, $1 60 bid; October, $1.65 asked.

WOOL—Supplies of Wool are not yet large. There is a fair trade in choice lots and the low grades are neglected. Prices are the same as last week.

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., May 3, 1882.

FRUIT MARKET.			
Apples, bx	2 00	@ 3 50	
Bananas, bnch	2 50	@ 4 00	
Cocoanuts, 100	6 00	@ 7 00	
Cranberries, bbl	12 50	@14 00	
Limes, Mex	8 00	@10 00	
do, Cal, box	2 00	@ 3 00	
Lemons, Cal, bx	1 75	@ 2 50	
Sicily, box	6 50	@ 7 50	
Australian	—	@—	—
Oranges, Cal, bx	3 00	@ 4 00	
do, Tahiti M	—	@—	—
do, Mexican	15 00	@17 00	
do, Loreto	—	@—	—
Pears, bx	—	@—	—
Pineapples, doz	8 00	@ 9 00	
Strawberries, ch	11 00	@15 00	
DRIED FRUIT.			
Apples, sliced, ℔	7	@—	7½
do, evaporated	—	@—	12½
do, quartered	—	@—	7
Apricots	18	@—	20
Blackberries	14	@—	16
Citron	28	@—	30
Dates	9	@—	10
Figs, pressed	4	@—	6
do, loose	3½	@—	5
Nectarines	14	@—	15
Peaches	11	@—	11½
do pared	14	@—	18

Pears, sliced	9	@—	9½
do whole	7	@—	8
Plums	5	@—	6
Pitted	11	@—	12½
Prunes	9	@—	10
Raisins, Cal, bx	—	@ 2 50	
do, Halves	—	@ 2 75	
do, Quarters	—	@ 3 00	
Eighths	—	@ 3 25	
Zante Currants	8	@—	10
VEGETABLES.			
Artichokes, doz	—	@—	50
Asparagus, box	75	@ 1 00	
Beets, ctl	—	@ 1 00	
Cabbage, 100 lbs	1 25	@ 1 40	
Carrots, sk	15	@—	75
Cauliflower, doz	50	@—	60
Garlic, ℔	—	@—	1½
Lettuce, doz	10	@—	—
Mushrooms, bx	—	@—	—
Okra, dry, ℔	—	@—	50
Peas, green, ℔	2½	@—	2¾
do, sweet	—	@	4
Parsnips, ℔	—	@—	2
Rhubarb, bx	50	@ 1 25	
Squash, Marrow			
fat, ton	18 00	@20 00	
Tomatoes	—	@—	—
Turnips, ctl	75	@ 1 00	

Retail Groceries, Etc.

WEDNESDAY M. May 3, 1882.

Butter, California			
Choice, ℔	45	@	55
Cheese	17	@	25
Eastern	25	@	30
Lard, Cal	—	@	18
Eastern	20	@	25
Flour, ex. fm, bbl	8 00	@9 00	
Corn Meal, ℔	2½	@	3
Sugar, wh crushd	12½	@	13½
Light Brown	8	@	9½
Coffee, Green	23	@	35
Tea, Fine Black	50	@1 00	
Finest Japan	55	@1 00	
Candles, Adm'te	15	@	25
Soap, Cal	7	@	10

Rice	8	@	10
Yeast Powdr, doz	1 50	@2 00	
Can Oysters, doz	2 00	@3 00	
Syrup, S F & old'n	75	@1 10	
Dried Apples, ℔	10	@	15
Ger Prunes	12½	@	20
Figs, Cal	9	@	10
Peaches	15	@	25
Oils, Kerosene	50	@	60
Wines, Old Port	3 50	@6 00	
French Claret	1 00	@2 50	
Cal. doz bot	2 00	@4 50	
Whisky, O K, gal	3 50	@5 00	
French Brandy	4 00	@6 00	

Lumber.

WEDNESDAY M., May 3, 1882

Redwood. CARGOES.			
Rough		@18	00
Surfaced	—	@28	00
Floor and step	—	@27	50
RETAIL.			
Merchantable	—	@22	50
Surfaced, No 1	—	@35	00
Tongued & Groove	—	@35	00
Pickets, rough	—	@20	00
do, fancy	—	@27	50
do, square	—	@17	50

Shingles	—	@ 2	50
Posts, each	—	15 @—	20
Pine. CARGOES.			
Rough	—	@18	00
Surfaced	22	@28	00
RETAIL.			
Rough	—	@22	50
Flooring	32	@35	00
Floor and step	—	@35	00
Laths	—	@ 3	75

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., May 3, 1882

Eng Standrd Wheat	9	@ 9½	
Cal Manufacture			
Hand Sewed, 22x36	9	@ 9½	
20x36	8½	@ 8¾	
23x40	12	@13	
24x40	12½	@13½	
Machine Swd 22x36	8½	@ 9	
Flour Sks, halves	9½	@10½	
Quarters	6	@ 6½	
Eighths	4½	@ 4½	
Hessian, 60 inch	—	@12	

45 inch	9½	@ 9¾	
40 inch	8½	@ 8¾	
Wool Sks Hand Swd			
3¼ ℔	—	@47	
4 lb do	52½	@55	
Machine Sewed	—	@49½	
Standard Gunnies	18½	@19	
Bean Bags	6½	@ 7	
Twine, Detrick's A	32½	@35	
" " AA	35	@37	

Domestic Produce.

WHOLESALE.

WEDNESDAY M., May 3, 1882.

BEANS & PEAS.	
Bayo, ctl	3 00 @3 25
Butter	3 75 @4 25
Castor	3 50 @4 00
Pea	4 50 @4 60
Red	2 50 @3 00
Pink	2 50 @3 00
Large White	3 00 @3 25
Small White	4 50 @4 60
Lima	4 00 @4 50
Field Peas, b'lk eyel	5 @1 75
do, green	2 00 @2 25
BROOM CORN.	
Southern	3 @ 3½
Northern	4 @ 6
CHICCORY.	
California	4 @ 4½
German	6½@ 7
DAIRY PRODUCE, ETC.	
BUTTER.	
Cal. Fresh Roll, lb.	25 @ 26
do Fancy Brands.	27 @ 28
Pickle Roll	— @ —
Firkin, new	26 @ 27
Eastern	18 @ 20
New York	— @ —
CHEESE.	
Cheese, Cal., lb	12 @ 13½
EGGS.	
Cal. Fresh, doz	23 @ 25
Ducks	— @ —
Oregon	— @ —
Eastern, by expr'ss	— @ —
Pickled here	— @ —
Utah	— @ —
FEED.	
Bran, ton	13 50 @14 50
Corn Meal	36 00 @37 00
Hay	10 00 @15 00
Middlings	— — @20 00
Oil Cake Meal	— — @27 50
Straw, bale	— 62½@— 70
FLOUR.	
Extra, City Mills	5 25 @5 50
do, Co'ntry Milis	4 75 @5 00
do, Oregon	4 75 @5 12½
do, Walla Walla	4 50 @5 00
Superfine	3 50 @4 25
FRESH MEAT.	
Beef, 1st qual'y, lb	8½@ 9
Second	5 @ 7
Third	4 @ 4½
Mutton	4 @ 5½
Spring Lamb	6½@ 9
Pork, undressed	6½@ 7½
Dressed	9 @ 9½
Veal	7½@ 8
Milk Calves	7½@ 8
do, choice	— @ 10
GRAIN, ETC.	
Barley, feed, ctl	1 60 @1 67½
do, Brewing	1 70 @1 75
Chevalier	1 60 @1 67½
Buckwheat	1 50 @1 75
Corn, White	— @ —
Yellow	1 62½@1 65
Small Round	— @1 67½
Oats	1 30 @1 67½
Milling	2 00 @2 02½
Rye	2 05 @2 20
Wheat, No. 1	1 62½@1 65
do, No. 2	1 57½@1 60
do, No. 3	1 45 @1 50
Choice Milling	— @1 70
HIDES.	
Hides, dry	19 @ 19½
Wet salted	9½@ 11
HONEY, ETC.	
Beeswax, lb	23 @ 25
Honey in comb	14 @ 18
Extracted, light	9 @ 10
do, dark	7 @ 8
HOPS.	
Oregon	20 @ 21
California, new	22 @ 25
Wash. Ter	19 @ 20
Old Hops	— @ —
NUTS—Jobbing.	
Walnuts, Cal	10 @ 11
do, Chile	7½@ 8
Almonds, bd shl lb	8 @ 10
Soft shell	14 @ 15
Brazil	10 @ 11
Pecans	13 @ 15
Peanuts	6½@ 7
Filberts	14 @ 15
ONIONS.	
Red	— @ —
Silverskin	1 25 @1 80
do, choice	— @ —
Oregon	— @ —
POTATOES.	
New, lb	4 @ 4½
Early Rose	2 20 @2 30
Petaluma, ctl	2 70 @2 75
Tomales	— @ —
Humboldt	2 70 @2 75
" Kidney	— @ —
" Peachblow	— @ —
Jersey Blue	— @ —
Cuffey Cove	— @ —
River, red	1 90 @2 00
Chile	1 50 @1 60
do, Oregon	1 90 @2 10
Oregon Peerless	1 90 @2 10
Salt Lake	1 75 @2 10
Sweet	1 00 @1 25
POULTRY & GAME.	
Hens, doz	5 50 @ 7 00
Roosters	6 00 @10 00
Broilers	5 00 @ 8 00
Ducks, tame, doz	6 50 @ 7 50
Geese, pair	1 25 @1 50
do, young	2 50 @3 00
Wild Gray, doz.	— @3 00
White do	50 @1 00
Turkeys	14 @ 16
do, Dressed	— @ —
Turkey Feathers, tail and wing, lb.	10 @ 20
Snipe, Eng	1 75 @2 00
do, Common	50 @ 75
Quail, doz	75 @ 80
Rabbits	1 00 @1 25
Hare	— @2 00
Venison	5 @ 7
PROVISIONS.	
Cal. Bacon, extra clear, lb	14 @ 14½
Medium	14 @ 14½
Light	15 @ 15½
Lard	13 @ 16
Cal. Smoked Beef	11½@ 12½
Shoulders	9½@ 10½
Hams, Cal	13½@ 14
do, Eastern	16 @ 17
SEEDS.	
Alfalfa	12 @ 13
do Chile	— @ —
Canary	3½@ 4
Clover, Red	14 @ 15
White	45 @ 50
Cotton	— @ 20
Flaxseed	2½@ 3
Hemp	— @ 5
Italian Rye Grass	25 @ —
Perennial	25 @ —
Millet, German	10 @ 12
do, Common	7 @ 10
Mustard, White	1½@ 2
Brown	2½@ 3
Rape	2½@ 2½
Ky Blue Grass	20 @ 25
2d quality	16 @ 18
Sweet V Grass	— @ 75
Orchard	20 @ 25
Red Top	— @ 15
Hungarian	8 @ 10
Lawn	30 @ 40
Mesquit	10 @ 12½
Timothy	9 @ 10
TALLOW.	
Crude, lb	6½@ 7½
Refined	10½@ 11
WOOL, ETC.	
SPRING—1882.	
San Joaquin, free	20 @ 23
do, fair	18 @ 19
do, dusty	15 @ 17
Southern Coast	15 @ 18½
Stanislaus & Tuolumne	23 @ 25

General Merchandise.

WHOLESALE.

WEDNESDAY M., May 3, 1882.

CANDLES.	
Crystal Wax	16 @18
Paraffine	20 @—
Patent Sperm	25 —28
CANNED GOODS.	
Assrtd Pie Fruits.	
2½ lb cans	2 25
Table do	3 50 @ —
Jams and Jellies	3 75 @ —
Pickles, hf gal	3 25 @ —
Sardines, qr box	1 67 @ —
Hf Boxes	2 50½@1 90
Merry, Fault & Co.s Preserved Beef 2lb, doz	3 25 @3 —
do 4 lb doz	6 50 @6 —
Preserved Mutton 2 lb, doz	3 25 @3 50
Beef Tongue	5 75 @6 00
Preserved Ham, 2 lb, doz	5 50 @5 60
Deviled Ham, 1 lb, doz	3 00 @3 50
do Ham ½ lb doz	2 50 @ —
Boneless Pigs Feet 3lbs	3 50 @3 75
2 lbs	2 75 @ —
Spiced Fillets 2 lbs	3 50 @ —
Head Cheese 3 lbs	3 50 @
COAL—Jobbing.	
Australian, ton	— @ 8 50
Coos Bay	— @ 6 50
Bellingham Bay	— @
Seattle	— @ 6 50
Cumberland	— @13 00
Mt Diablo	— @ —
Lehigh	— @
Liverpool	— @ —
West Hartley	— @ 8 50
Scotch	— @ 8 50
Scranton	— @ —
Vancouver Id	— @ —
Wellington	— @ 9 00
Charcoal, sack	— @ —
Coke, bush	— @ —
COFFEE.	
Sandwich Id lb.	— @ —
Costa Rica	12 @ 14
Guatemala	12 @ 14
Java	18 @ 20
Manilla	15 @ —
Ground, in cs	— @ 22½
FISH.	
Sac'to Dry Cod	— — @ 5
do in cases	— — @ — 5½
Eastern Cod	— 7 @ — 7½
Salmon, bbls	7 00 @ 7 50
Hf bbls	3 50 @ 4 00
1 lb cans	1 12½@ 1 22½
Pkld Cod, bbls	— @ — —
Hf bbls	— @ — —
Mackerel, No. 1 Hf bbls	9 50 @ 10 00
In Kits	1 75 @ 1 85
Ex Mess	3 50 @ 4 00
Pickled Herring, box	3 00 @ 3 50
Boston Smoked Herring	65 @ — 70
LIME, etc.	
Plaster, Golden Gate Mills	3 00 @ 3 25
Land Plaster, ton	10 00 @ 12 50
Lime, Santa Cruz bbl	1 25 @ 1 50
Cement, Rosendale	1 75 @ 2 00
Portland	3 75 @ 4 00
NAILS.	
Assrtd sizes, keg	3 75 @ 4 00
OILS.	
Pacific Glue Co's Neatsfoot, No. 1	1 00 @1 00
Castor, No. 1	— @1 05
do, No. 2	— @ 95
Baker's A A	— @1 30
Olive, Plagnoil	5 25 @5 75
Possel	4 75 @5 25
Palm, lb	9 @ —
Linseed, Raw, bbl	— @ 60
Boiled	— @ 65
Cocoanut	60 @ —
China nut, cs	68 @ 69
Sperm	1 40 @ —
Coast Whales	35 @ —
Polar	— @ —
Lard	— @1 00
Petroleum (110°)	18 @ 22
Petroleum (150°)	28 @ 35
PAINTS.	
Pure White Lead	7½@ 8
Whiting	1½@ —
Putty	4 @ 5
Chalk	1½@ —
Paris White	2½@ —
Ochre	3½@ —
Venetian Red	3½@ —
Averil mixd Paint gal White & Tints	2 00 @2 00
Green, Blue and Ch Yellow	3 00 @3 50
Light Red	3 00 @3 50
Metallic Roof	1 30 @1 60
RICE.	
China Mixed, lb	4½@ 5
Hawaiian	4½@ 5
SALT.	
Cal. Bay, ton	14 00 @22 00
Common	6 50 @14 00
Carmen Id	14 00 @22 00
Liverpool fine	14 00 @20 00
SOAP.	
Castile, lb	9 @ 10
Common brands	4½@ 6
Fancy Brands	7 @ 8
SPICES.	
Cloves, lb	37½@ 40
Cassia	19 @ 20
Nutmegs	85 @ 90
Pepper Grain	15 @ 16
Pimento	16 @ 17
Mustard, Cal ½ lb Glass	— @1 25
SUGAR, ETC.	
Cal. Cube lb	@ 12½
Powdered	— @ 13½
Fine Crushed	— @ 12½
Granulated	— @ 12½
Golden C	— @ 11
Cal Syrup, kgs	65 @ —
Hawaiian Mol'sses	25 @ 30
TEA.	
Young Hyson, Moyune, etc	40 @ 65
Country pkd Gunpowder & Imperial	35 @ 75
Hyson	30 @ 35½
Fooo-Chow O	27½@ 32
Japan, medium	35 @ 37½

Leather.

[WHOLESALE.]

WEDNESDAY, M., May 3, 1882.

Sole Leather, heavy, lb	30 @ 32
Light	25 @ 28
Jodot, 9 to 10 Kil., doz	36 00 @46 00
11 to 13 Kil	50 00 @60 00
14 to 16 Kil	65 00 @72 00
Second Choice, 11 to 16 Kil	40 00 @65 00
Simon Ulmo, Females, 12 to 13 Kil	52 00 @56 00
14 to 15 Kil	60 00 @64 00
16 to 17 Kil	66 00 @68 00
Simon, 18 Kil	— — @57 00
20 Kil	— — @60 00
24 Kil	— — @65 00
Kips, French, lb	— 85 @ 1 20
Cal, doz	55 00 @60 00
French Sheep, all colors	12 00 @15 00
Eastern Calf for Backs, lb	1 00 @ 1 25
Sheep Roans for Topping, all colors, doz	9 00 @10 00
For linings	6 50 @10 00
Cal. Russet Sheep Linings	3 00 @ 5 50
Boot Legs, French Calf, pair	— — @ 4 50
Good French Calf	— @ 4 00
Best Jodot Calf	4 75 @ 5 00
Leather, Harness, lb	35 @ 40
Fair Bridle, doz	45 00 @66 00
Skirting, lb	33 @ 37
Welt, doz	30 00 @36 00
Buff, ft	17 @ 20
Wax Side	19 @ 20

Gold, Legal Tenders, Exchange, Etc.

[Corrected Weekly by SUTRO & Co.]

SAN FRANCISCO, May 3, 3 P. M.

SILVER, ¼.

GOLD BARS, 890@910. SILVER BARS, 10@18 ⅌ cent. discount.

EXCHANGE on New York, 5 discount; London, 49½@49⅝; Paris, 5.13 francs ⅌ dollar; Mexican dollars, 91@92.

NEW YORK (4 per cent), 120⅞

Meteorological Summary for the Month of April, 1882.

Station, San Francisco, Cal.

Date	Daily Mean Barom.	Daily Mean Temp.	Daily Mean Humid'y	Prevailing Direction of Wind	Daily Rainfall.
1	30.025	51.5	82.0	SW	....
2	29.932	54 8	84.3	S	.01
3	29.986	53.3	84.3	W	.03
4	30.136	53.7	77.7	W	....
5	30.144	52.0	82.3	SW	.30
6	30.223	48.7	56 7	NW	....
7	30.144	50.3	58.0	W	....
8	29.991	52.7	75.7	SW	.27
9	29.870	50.5	74.0	SW	.44
10	30.017	48.7	73.3	W	....
11	30.123	49.3	73.3	W	....
12	30.128	51.8	77.3	W	....
13	30.107	54.0	78.7	SW	....
14	30.116	53.2	83 3	SW	....
15	30.114	52.7	65 3	W	....
16	30.134	52.0	51.3	W	....
17	30 167	52.3	72.3	W	....
18	30.181	52.5	86.7	W	....
19	30.124	51.3	80.7	W	.06
20	30.173	49.3	54.3	W	....
21	30.228	51.2	69.0	W	....
22	30.109	51.8	74.0	W	.05
23	30.114	48.3	63 0	W	....
24	30.123	52.8	69.7	SW	.06
25	30.255	50.5	66.7	W	....
26	30.149	53.7	72 3	W	....
27	30.099	72 3	72.7	W	....
28	30.030	61.8	65.0	NE	....
29	30.018	55.0	78.3	SW	....
30	29.939	53.7	79.3	W	....
31					
Sums	902.899	1,570.7	2,179.0		1.22
Means	30.097	52.4	72.6	W	....

Pacific Coast Weather for the Week.

[Furnished for publication in the PRESS by NELSON GEROM Sergt. Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending 11:58 A.M. Wednesday, May 3d, at noon, for the stations named:

Date.	Olympia.	Portland.	Roseburg	Red Bluff	Sacram'to	San Francisco	Visalia.	Los Angeles.	San Diego
Thursday.	.00	.00	.00	.00	.00	.00	.00	.00	.00
Friday	.00	.00	.00	.00	.00	.00	.00	.00	.00
Saturday	.00	.00	.00	.00	.00	.00	.00	.00	.00
Sunday	.00	.00	.00	.00	.00	.00	.00	.00	.00
Monday	.00	.00	.00	.00	.00	.02	.00	.00	.00
Tuesday	.43	.15	.—	.00	.	.14	.00	.02	.00
Wed'sday	.46	.62	.20	.01	.00	.01	.00	.00	.00
Totals	.89	.77	.20	.01	.—	.17	.00	.02	.00

Signal Service Meteorological Report.

SAN FRANCISCO.—Week ending May 2, 1882.

	Apr. 26	Apr. 27	Apr. 28	Apr. 29	Apr. 30	May 1	May 2
HIGHEST AND LOWEST BAROMETER.							
	30 217	30.135	30 074	30.059	29.948	30.002	30 109
	30.099	30.063	29.998	29 970	29 912	29.921	29.989
MAXIMUM AND MINIMUM THERMOMETER.							
	62.5	66	74	63	59	64	63
	48	51	53	50.5	51	50	54
MEAN DAILY HUMIDITY.							
	72.3	72.7	65	78.3	79.3	81.3	75.7
PREVAILING WIND.							
	W	W	NE	SW	W	SW	SW
WIND—MILES TRAVELED.							
	189	167	136	259	317	267	215
STATE OF WEATHER.							
	Clear	Clear.	Clear	Clear.	Cloudy	Fair.	Fair.
RAINFALL IN TWENTY-FOUR HOURS.							
						.02	.11

Total rain during the season, from July 1, 1881, 16.05 inches.

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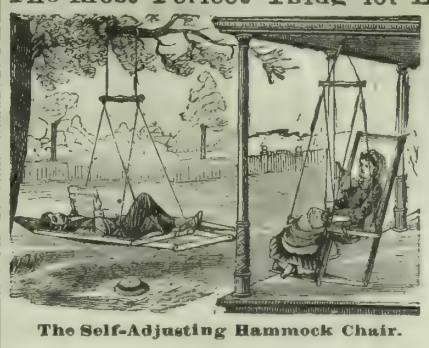

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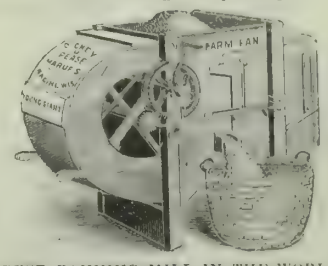

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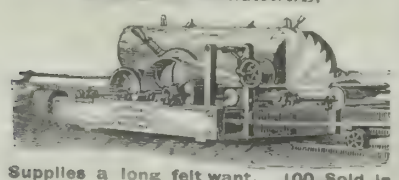

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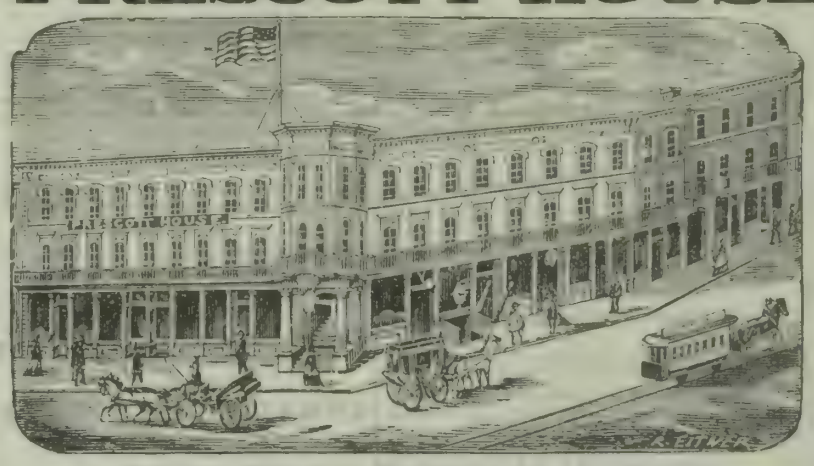

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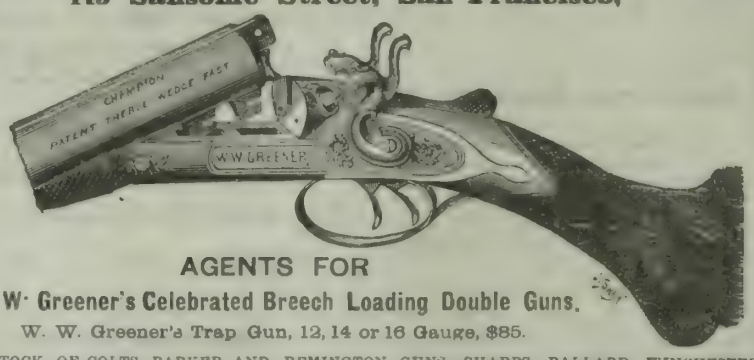

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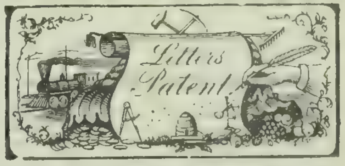

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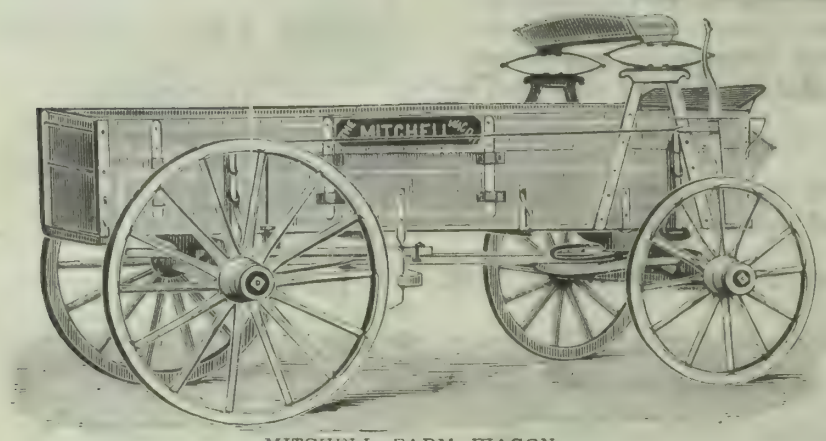

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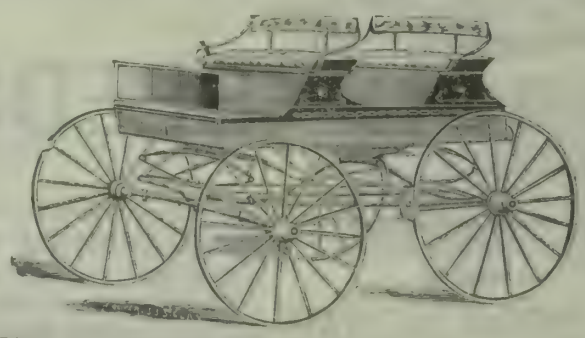

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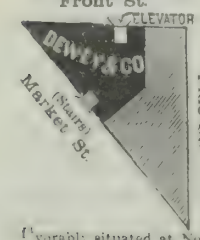

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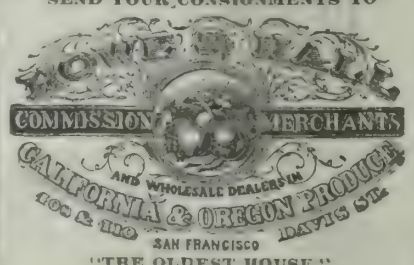

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PACIFIC RURAL PRESS

FRESNO COUNTY EXTRA—TWENTY PAGES.

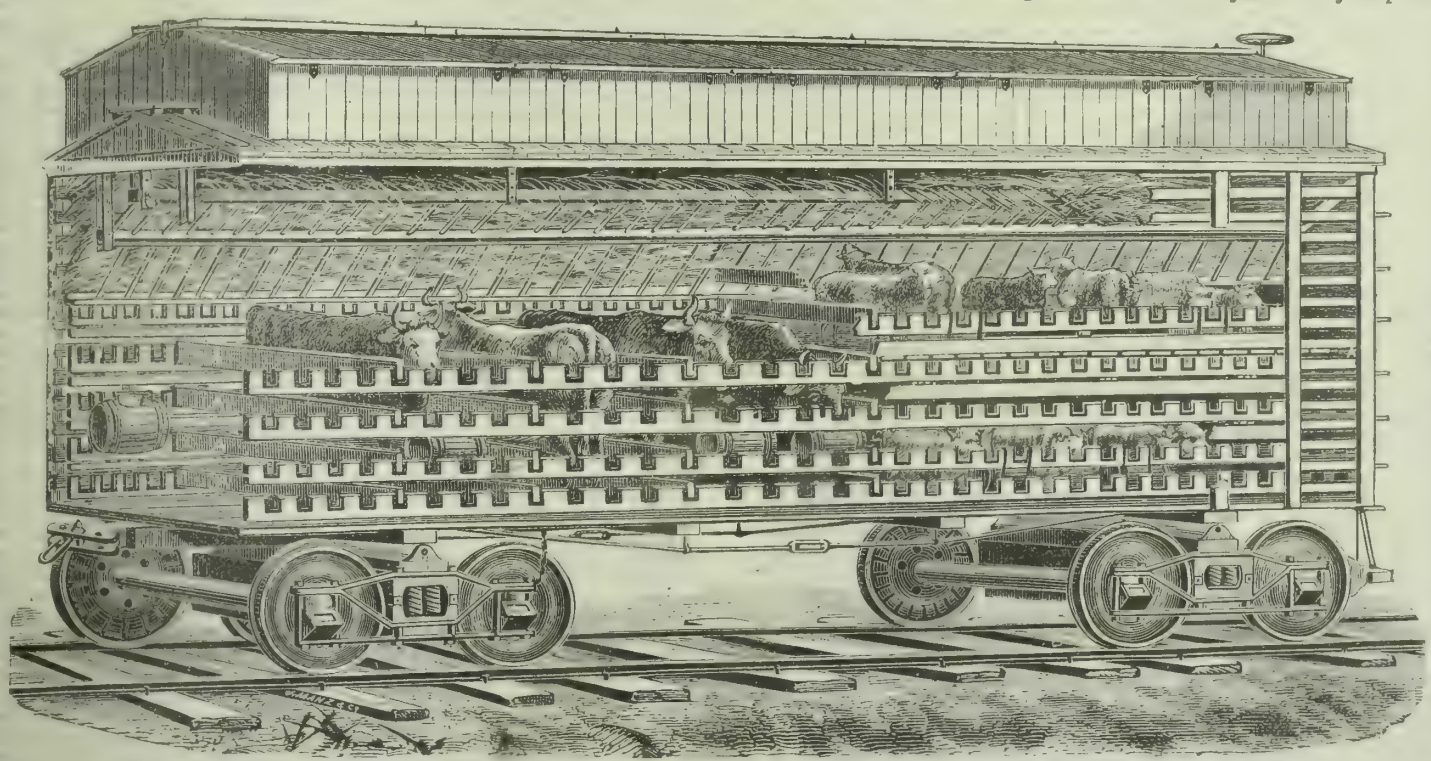
Volume XXIII.] SAN FRANCISCO, SATURDAY, MAY 13, 1882. Number 19

An Improved Cattle Car.

Our readers will remember the accounts we have published of the efforts made by the American Humane Association to secure a car for the carriage of live stock which would free the animals from the cruelty which attends shipment in the cars usually employed for this purpose. The Humane Society, it will be remembered, did not find any car completely filling their demands, which did not trench upon the rights of inventors, and, therefore, they withheld their award. But their inquiry has brought the abuses in the cattle traffic into prominent notice, and must, therefore, be accounted of public service, for it has stimulated invention, and the result will, doubtless, be great reforms where reforms are sadly needed.

In order to show our readers what has been done in the way of securing a comfortable dining-room and sleeping-car for live stock, we have secured an engraving of one of the most famous devices of this kind, patented recently by A. C. Mather, of Chicago. The advantages claimed for this car are chiefly that it avoids the necessity of unloading stock to feed and water; that stock cannot trample upon or otherwise injure each other, or crowd, or be thrown to one end of the car by sudden stops and starts; that the hay-rack occupies space which is not needed for the stock, and can be raised or lowered to suit the kind of stock desired to be shipped, and put up close to the roof, out of the way, when the car is desired to be used for carrying merchandise. that the water-troughs are simple, strong and easily adjusted or cleaned; that these troughs, and also the bars used for separating the stock, are put out of the way of merchandise, being locked in a box on top of the car; that by avoiding the necessity of stopping or unloading repeatedly to feed and water, much time is saved in transportation, and by providing against hunger, thirst and the infliction of injury by stock upon each other, stock will not lose in weight or in quality of the meat when killed; that by loading the cars as ordinary cars are loaded, and placing the bars between stock afterwards, from outside the car, no trouble is experienced, time lost or danger incurred from entering cars with the animals: that these bars have the advantage of being both light and strong, so no car space is lost, and are so fastened as to prevent all possibility of their becoming loose, and that, as will be seen by examining the illustration, different kinds of stock can be safely and comfortably carried in the same car at the same time. That provision is made against the possibility of fire, by having the space between the five upper slats closed; that extra hay and water is carried in a tight box on top of car and fed through the roof to the animals twice a day with regularity during the entire journey. That these improvements can be put on the present stock-cars, and that the car has shown its value by practical tests en route.

An experimental trip with one of these cars from Chicago to Boston is described as follows: The car was loaded with 15 large fat cattle, weighing in Chicago 23,210 lbs., as per certificate signed by two witnesses; that none of these cattle were taken out of the car from the time they left Chicago until they arrived in Boston; that they were fed about 18 lbs. of hay per day each, while the car was running, and given from 8 to 10 gallons of water; that they laid down, got up, and were apparently as comfortable as if in a stable; that they were weighed and sold early the following morning after their arrival in Boston, weighing 22,950 lbs., making a total loss of only 260 lbs. on the entire load, or 16½ lbs. per head, where the average loss is from 40 to 60 lbs.; and one car arrived on the same train which was said to have shrunk nearly 90 lbs. per head, but they were unloaded only once between Chicago and Boston, and then given only a bite of hay, as they had to be there for a certain market.



IMPROVED CAR FOR THE CARRIAGE OF LIVE STOCK, INVENTED BY A. C. MATHER, OF CHICAGO.

The growing cattle shipping interest on this coast should lead public attention to the claims of improved cars, for it is positively necessary in order to secure good meat for the consumer and the highest profit to the stock grower that the present methods and practices in cattle shipment should be superseded by more humane ways and means.

HESSIAN FLY.—The inroads of an insect, said to be the Hessian fly, are reported from Solano county. This troublesome pest has appeared in a few places in Vallejo township in such numbers as to completely destroy whole fields of wheat. Mark Carr, who lives four miles northeast of Petaluma, is now engaged in plowing under what a short time ago was a promising wheat field. He will now plant corn and potatoes, as the land is moist and in excellent order, to all appearances. George D. Greene will also plow up some of his wheat and sow buckwheat, plant corn, etc., in its stead. Robert Brownlee, Jr., whose farm is below Suscol, says the Hessian fly has again commenced its ravages in his vicinity, and he fears for the result.

OVER 200 manufacturing firms of Rochester have formed an Employers' Protection Association against strikers.

AUSTRALIAN INSECTS.—Some of the worst insect pests we have in this State were brought from Australia upon the trees, etc., which were imported some years ago. The same foes have followed Australian trees elsewhere. The Botanical Garden in Cape Town, South Africa, has a bug which was introduced from Australia with a plant procured for the Botanical Garden. The account says: "The progeny of the first arrivals has multiplied exceedingly, and so much mischief has been done by it, that a very general, and evidently too well grounded alarm as to the results of its further increase, has been felt for some time. The Australian bug is apparently a more dangerous neighbor than even the Colorado beetle. It attacks trees—usually those of the finer and more useful species. Some handsome oak trees in the grounds of the Government house at Cape Town—said to be 100 years old—were reduced to such a state that they had to be cut down. It is particularly hostile to fruit trees, and on a single estate it is reported to have destroyed no fewer than 600 orange trees, thereby causing enormous loss to the owner. As yet, no means of stopping the spread of this formidable pest have been found." Ellwood Cooper surmises that this pest is the *Icerya purchasi*, the wretched white scale insect which played havoc with the acacias at San Rafael, Santa Clara, and elsewhere, and has given some of the Santa Barbara people so much trouble on their citrus fruit trees.

THE DEATH OF DE LONG AND HIS COMPANIONS.—Dispatches from Siberia announce the finding of Captain De Long and 13 of his companions, dead in the Siberian wastes. The fate of the adventurous men has called forth the deepest regret throughout the country. There is still another boat load of the men who were in the ill-fated *Jeannette*, who have not yet been found and search is being made for traces of them.

PRAIRIE and wood fires have been raging in southern Arizona and western New Mexico recently. The territory burned is reported to cover 40 miles square, and the damage done is immense. The origin of the fire is attributed to the Indians.

The Value of the Grass Crop.

In our hay edition, two weeks ago, we gave the figures of the value of the hay crop of the country, as reported by the census of 1880, but this was merely of the hay cut and cured as such. It is only a part of the great grass crop, which is one of the grandest resources of the country. It is a pleasing occupation to figure up the resultant products of the pasture, and the aggregate will surprise one who has come to regard the unobtrusive grass as a thing of course, like the air or the sunlight. We have just come across some calculations derived from the census of 1870, which will give one an idea of the real standing of the grass crop of the country. The hay crop for 1870 is reported at over 27,000,000 tons. This, at half the selling price in the large cities, would amount to $405,000,000, and is far greater than the aggregate home value of the cotton crop or any other crop. But the cured hay is but a portion of the grass crop. The other portion is used on the ground, and it requires considerable calculation to get at the value so used, even in the roughest way. In the first place, livestock, including horned cattle, horses, sheep, swine, etc., to the value of $1,525,000,000, were fed from it that year. Averaging the lives of these at five years, we have one-fifth of that sum as representing the grass fed to them in 1870, viz., $305,000,000; next, we find the value of the animals slaughtered for food in that year to be $309,000,000, and as this is an annual product, the whole of it will, for the present, be ored ted to the grass crop; next, we find that the butter crop of 1870 was 514,000,000 lbs., which. at the low average of 25 cents, amounts to $128,000,000, and this goes to the credit of grass; next, we have 235 gallons of milk which, averaged at the low estimate of ten cents per gallon, adds $25,000,000 more to the credit of the grass crop; then we have 100,000,000 pounds of wool at twenty-five cents per pound, adding $25,000,000 more; and finally, 53 000,000 pounds of cheese at ten cents, adding over $5 000,000 to the total credits to the grass crop of 1870, which aggregates $887,000,000. Now, let us add the value of the "hay" crop as given above—viz: $405,000,000—and we have a grand total for "hay" and the products of grass consumed on the ground amounting to $1,292,000,000! This is, of course, subject to deduction, as the meat, butter, milk, cheese and wool-producing animals consume other food besides grass and hay. To make ample allowance for this we deduct the entire value of the corn and oat crops of 1870, estimated at $270 000,000, and this leaves a remainder of $1,082,000,000, to be credited to the hay and grass crop of that year, when the reported aggregate of all farm products was $2,447,528,658. The value of that crop was two-fifths of the aggregate value of all farm products.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS

The Anti-Debris Convention.

EDITORS PRESS:—The recent anti-debris meeting at Sacramento must, at least, carry conviction to the minds of many who before were undecided as to the sentiments held by the people of the Sacramento valley on the slickens question. By their voluntary and united action the people of nine of our interior counties have publicly shown the relation in which they stand to hydraulic mining, and have expressed their intention of forcing at least a respect for their rights as American citizens and Californians.

The humble residents of the "Granger section" have at last decided that they are all interested, and that their rights must be respected as well by hydraulic miners as by other persons. The agriculturists and people of the interested section have been dilatory in securing united action, but it now only remains for them to secure a permanent organization and to push the issue to a final settlement in the courts, for there only can the question be settled. It surely is time that the people at large should wake up and manifest some interest in this matter when the supervisors of nine counties deem it necessary to meet together in order to secure some organized opposition to hydraulic mining.

The meeting lately held at Sacramento was not only a gathering of the supervisors of the several counties but was an immense impromptu mass meeting of citizens, all vitally interested in the absorbing subject of self protection. The people of Yuba, Sutter and Sacramento counties are fully alive to the issues at stake and are well aware of the necessity for immediate, united and determined action against those hydraulic miners who are violating all property rights, and who have declined to submit to the processes of law. They are convinced that another year, or at most two, of hydraulic mining, as at present conducted, will put the finishing touches to their now almost general ruin. Many of the residents of those counties settled there in the time of the Argonauts. They acquired land, built homes and improved their property. In purchasing their land of the Government they acquired the right to the perpetual enjoyment of the rivers in their unpolluted usefulness. They were not aware that the hydraulic miners would be allowed to make their farms a dumping place for the refuse of the mines, and at the same time screen themselves behind the law by asserting that in paying $2 50 per acre for their mineral lands they had secured the privilege of dumping their tailings into the rivers, even if such action did cause the destruction of property below and transcend the rights of other citizens.

Of all of the arguments of the hydraulic miners, these (that they have purchased the right of overriding all rights of property, and that by their uninterrupted practices for a few years they thereafter acquired those rights) are the most flimsy. Suppose the Federal Government had the power to convey such privileges, which she has not, the argument is still as false. If the miners bought the right to destroy other peoples' property, what need was there of acquiring them by future practices? And if they did not buy them, how could they, under any circumstances, acquire them by practicing them

The truth of the matter is, that the hydraulic miners are so palpably guilty, and the offense is so evident, that they are at great pains to present everything attainable to show their irresponsibility of this great wrong. They believe that a poor case is better than none, and that the law can be made to shield the rich easier than to enforce the rights of the poor. The weakness of their case is proved by the numerous concessions and changes they have made in their defense. In 1876 they snapped their fingers at Keyes and his suit, and asserted that he was powerless to help himself. In 1879, after Judge Keyser's decision, their eyes were opened to the equity of the case and to the probable decision the unprejudiced Supreme Court would give. Their every effort was then bent on getting the case thrown out on a technicality of law, in which they succeeded. They came into the next legislature, willing and anxious to help the "valley people," protect their property by taxing the State, and paying a small per cent. of it themselves for the building of brush dams, etc.

They openly acknowledged that they were prosecuting an industry which wrought injury to those below them, yet they were unwilling to be held amenable to the common law, and immediately organized to impede its enforcement.

In Nevada county they recently forcibly resisted the orders of a judge of the Superior Court. They took it upon themselves to say that his rulings were unreasonable, and that they were not bound to respect them. Did this action resemble most the acts of law-abiding citizens or those of a body of "Free Leaguers?"

The hydraulic miners fathered the drainage bill, which was a virtual license to their damaging occupation. When the protective measures instituted under this bill were found to be insufficient and unsatisfactory, they immediately laid the blame at the door of the agriculturists, and even went so far as to accuse them of feloniously setting fire to the brush dams. In the Gold Run suit they had advanced every argument from their acquired right to use the rivers as easements for their tailings to the alleged fertility of the slickens, as shown by a chemical analysis made by a chemist in their employ, and who found, all fact and analyses to the contrary notwithstanding, that slickens was as good soil and as fertile as the original virgin soil. We do not presume to guess how he secured these results, but from the fact that they were so stated, we are at liberty to infer that there was something "crooked" in the method of getting them.

It is useless to deny the fact that the farmers of the Sacramento valley are suffering

Unparalleled Wrongs

At the hands of the hydraulic miners; that 100,000 acres of their most productive lands have been irretrievably ruined, with twice as much more doomed unless the onslaught of slickens is immediately checked; that the value of real estate in Yuba and Sutter counties has decreased 50%, with the prices of all property only nominal, for no purchaser can be found to invest money in a locality where impending destruction is so sure and so apparent; that the time was, before the inauguration of hydraulic mining, when the waters of the rivers were mechanically and chemically pure, and fit for domestic and agricultural uses; that at the present time they are unwholesome and foul in the highest degree, at no time fit for stock to drink, and when used in surface irrigation, practically poison the soil by the deposition of the material they hold in suspension; that for ten years previous to 1862 placer and quartz mining were prosecuted to the fullest extent, and yet no complaints were heard of their fouling the waters; that the ruin and desolation brought upon a large section of the State is due directly to hydraulic mining, and such being the case, hydraulic mining as at present conducted is a nuisance, and must be dealt with accordingly; that as shown by the resolutions adopted at Sacramento the injured people of the valleys have no conflict with quartz or placer mining, nor with those hydraulic mining companies who successfully impound their debris; that they are so well aware of their immediate danger as to subjugate all other interests, political and social, to the one vital question of whether they shall in future be protected in their property and assured of their rights; that they are not asking anything unreasonable when they demand that hydraulic mining shall be conducted in such a manner as not to interfere with the rights of the residents of the valley. They hold that the hydraulic miners are entitled to no favorable discrimination at the hands of the judiciary; that the production of gold does not bring with it immunities which may not be enjoyed by other citizens; that the miner did not pay $2.50 per acre for his land because he thereby acquired privileges which, even though they might overstep the bounds of common law, could not be enjoined by the processes of law; but, instead, they were charged $2.50 per acre for the simple reason that it cost the Government fully twice as much to open up mineral as it did agricultural land.

As to the hydraulic miners being allowed to pursue their calling unmolested, it is well known that for the last ten years the matter has been under protest, and that, from the insecurity of the occupation, the sale of hydraulic property has been rendered difficult in the extreme.

The Outlook.

It is to be hoped that the important steps taken at the meeting at Sacramento will be followed by immediate benefits. In fact such must be the case, for when a grievance is so apparent and so extensive as to call for official notice at the hands of the supervisors of nine of our oldest and wealthiest counties, it is evident that the people of those counties have decided to secure the enforcement of their rights immediately and at all hazards.

Slickens will be an important issue in the coming political campaign; nor does it signify that the prime movers in this matter are trying to gain political capital by the part they take in the agitation of this question. If a person may not work for the security of his property and the integrity of his rights of citizenship and manhood without being guilty of wire pulling and demagogism, then truly we have no need of a government, and political parties are superfluous. The simple fact that all political differences are disregarded in this slickens question is proof alike of the immensity of the wrongs suffered and of the integrity and honorableness of the motives of the parties interested.

It is absolutely certain that the mining interest will endeavor to secure some legislative action which will, under the cover of remedial and State aid, license them to continue their illegitimate business for a time longer. It is the imperative duty of the agriculturists to be prepared to forestall any such action, and at the same time to secure some legislative action which will make it possible to subject the hydraulic miners to the restrictions of common law.

It is to be hoped that the Supervisors who recently met in Sacramento will at once institute more suits against active hydraulic miners. It is folly to say that one suit will state the points at issue as expediently as more would. If only the legal points were at stake, such an argument might be advanced. But it must be remembered that while the suits are being prosecuted, hydraulic mining, with its complement of destruction, continues, and with the activity engendered by the probability that the mines may only have a short time to work, and the owners must therefore make the best use of their time. They can well afford to see a few mines temporarily enjoined if the rest be allowed to continue their work; but if all of the principal mines were shut down until these suits were decided it would not be so difficult to arrive at a final settlement of the case. There would then not be so many delays, and fewer legal quibbles and questions of doubtful bearing would be brought before the judge. The miners would then be the ones mainly interested in securing a final decision, and would conduct themselves accordingly.

It is high time that more adequate and radical measures were taken by the valley people in regard to this question, and an organized and general advance in the way of new suits and temporary injunctions will secure better results than ten times the amount of money thus expended would do if spent in other remedial measures. M. H. D.

Oakland, May 9, 1882.

SHEEP AND WOOL.

The Mohair Industry.

Physics or metaphysics begs defense,
And metaphysics calls on aid from sense. *Pope*

EDITORS PRESS: Of all the productions of California, mohair alone stands at a disadvantage before the world.

After the introduction of the mohair goat into this State there were written formulas given by which any mountaineer of ordinary intelligence could not only gain a competence, but become immensely wealthy, in a period not exceeding 10 years, by crossing the mohair goat on the common goat. In these instructions the caution against using a graded male amounted to an injunction. To insure success the breeder must use only on the side of the sire, the pure, the real, the fashionable thoroughbred. The doctrine looked so plausible that hundreds entered on the occupation. A professional element was engendered that has enriched itself upon the doctrine, and, although the spurious article of mohair produced cannot enter into direct competition with the Asiatic, yet it is sufficiently delusive to induce the manufacturer, in his pardonable zeal to obtain his supplies from an American source, to step clear out of his legitimate sphere, and into the province of the stock breeder. We are now to bear in mind that the standard in the raw fibre must be the product of thoroughbred animals. However, if we emulate the example of the Cape Colony and infuse a further augmentation of the sacred current, we can dispense with our mathematics altogether, and are henceforth more sure of success, than if success herself had been our constand attendant. Fortunately, the experiences in Africa have not been detailed to us with sufficient accuracy to lead us into further delusion in our emergency. And, as for the idea of California playing second fiddle to the Cape Colony, or any where else, it can not be entertained for a second.

The manufacturer of Tingue admits that there is something of a mystery about the production of mohair, for he is unable to comprehend why it would not yield a handsome profit if sold at prices corresponding with the different grades of wool. He did not quote the full strength of his position, for the mohair producer pays nothing for his range—it is literally unlimited; while the wool producer very often has to pay an amount for his pasture that would make the difference between profit and loss. This fact, however, only makes it all the worse for his formula.

Dismal as this hour may appear to some, it is in reality the brightest that the California mohair producer has ever seen; the fact of the goat premiums on the exhibition ground being reduced one-half, to the contrary notwithstanding. The Sultan of Turkey has prohibited the further exportation of the mohair goat, except through the British Consul at Angora. He, in his turn, has entered into negotiations with a magnate in America, that nothing shall hereafter be imported to this country except through his hands. Virginia has relieved California of the professional element, and if she can also be induced to accept his thoroughbred, there is absolutely no impediment to prevent this State from vindicating her position as a mohair-producing country. Not that we have the slightest ide of throwing the harness on our "white elephent," and leading him at once to the front; for, after so many years of persuasion, all the wonder is that there is a vestige of the industry remaining.

It has hitherto been assumed that the failures in this business have been attributable to the taint of the common goat, or to the improvidence of the producer. Now, however, that the standard in the raw fiber must be the product of thoroughbred animals; it behooves us to inquire if your correspondent does not refer to the Asiatic thoroughbred, for the American thoroughbred mohair goat is a myth and has no standard; he has no reality outside the literature of the professional and the circumscribed limits of the exhibition grounds. If it were otherwise, I ask the question, What has become of the produce of them? The goats have been over 30 years in America. They certainly must breed, even if they do not increase, and the produce of them alone ought to keep a factory running for at least a few months of the year, with a fiber void of those features so objectionable to the manufacturer. I ask the question, What has become of them? They are not in the hands of the producer. His failure has been made on "graded bucks." They are not in the corrals of the professional; his whole outfit consists of a pamphlet and 200 thoroughbreds. Among them they have not been able even to make a respectable showing at their "new departure" at the mountain lake, for after informing the Virginians that the Turk has no system of breeding, and entertaining them with the preposterous delusion that they can make their fashionable watering place the headquarters of Angoras, both American and Asiatic," they ask them to purchase $20,000 worth more of his stock, that is bred without system, to sustain their own that, in spite of all the skill and system of an enlightened generation, has been continually tending to degeneracy and perdition. Therefore, I again repeat the question, What has become of the progeny of their vaunted thoroughbred? The fact of the matter is that we are constrained to acknowledge that, in spite of printers' ink and occasional importations, the laws of inheritance and the powers of selection have both been overmatched, and in the short space of a little over a quarter of a century, they swell the ranks of the Noahs. Are bronco, as far as profit is concerned; have tumbled to the abject level of the musky monarch of the Guadaloupe. But what is a quarter of a century in the history of a nation?

Again, if the manufacturer of Tingue will consult the goat literature of Virginia, he cannot fail to recognize the fact that the professionals are in ecstasies over a recent importation —Mahomet and companions. The quality and weight are to be doubled. So where is your thoroughbred standard? If the unfortunate animal were endowed with articulation, he would ejaculate such an expression as is attributed to the captive Cassivelaunus, when they toted him through the streets of Rome: "How could you, who are possessed of so much splendor at home, envy me my humble home in Geredeh?"

As a chapter of experience must certainly be worth a volume of theory, I will cite a few illustrations of the manner in which their doctrines for the production of merchantable mohair have operated here. Some time back a merchant of Mariposa showed me the returns of 800 lbs. of mohair that he had forwarded for a producer to the Farr Alpaca Co. The returns stated that they had called to their assistance an outside professional grader. It was classified thus: 500 lbs. at 8 cts., the remainder divided between 20 cts. and 40 cts. per lb. The producer was notified that there was a small lot, worth in reality 80 cts. a lb., but not enough to make a grade of.

Another merchant informed me that he had forwarded mohair to the same company for a producer, that was actually refused altogether. The very fact of these persons shearing and forwarding their mohair is sufficient assurance that they expected a reasonably profitable return.

Again, a few miles south of me, is a flock of goats that have been bred for fleece for 18 years—one year to graded bucks and 17 to the thoroughbred—the present owner expending as much as $700 in one season for pedigreed sires, yet the mohair has never returned more than 30 cents a pound; and for the last two seasons, owing to the depression, has not been put upon the market at all.

Yet another: While visiting a friend of mine who had been in the mohair business for 10 years, breeding for two years from grade bucks and seven years from the thoroughbred, I observed the hide of a very showy animal nailed against the side of his barn, and asked: "What is that?" "Oh! that is the hide of one of our thoroughbred bucks." "Did he die?" I asked. "No, we slaughtered him and threw him to the hogs." This animal had been the subject of a special correspondence. The highest price this gentleman had ever realized for his mohair was 50 cents a pound on a flush market, while since the depression, some of it lay in Boston for two years, paying storage, without finding a purchaser. Three of the instances cited are persons of families, but I will purposely refrain from expatiation. In relating my own experience, I can be more accurate, and will give you names and dates, weights and values hereafter.

MARTIN KIRBY (73).

Darrah, Mariposa Co., Cal.

SUCCESSFUL ELECTRIC LIGHTS.—Cleveland is now illuminated by electric lights on two tall masts, one of them 250 ft. and the other 200 ft. high, and it is demonstrated that at half a mile distant ordinary newspaper print can be clearly read. It is also said, says an exchange, that the higher the electric light the more distinct, the more penetrating and the more valuable will be its effects.

A USE FOR LIQUID CARBONIC ACID.—Krupp, the great gun manufacturer, is said to be employing at his works a very ingenious way of recovering the coils of guns which have become useless. He heats the barrel to redness and then introduces liquid carbonic acid. The cold thus produced causes shrinkage and allows the coils to be removed.

SERICULTURE.

Silk Culture in California.*

(Continued from last week.)

FEEDING THE WORMS.

The larger portion of the worms come out between five and seven o'clock in the morning. A few very tender leaves should be scattered upon the netting placed to receive them, not immediately, but very soon after they appear, else they will wander away. They will never leave if food is placed near them. As already intimated, young and tender leaves only should be fed to the young worms, and the more mature leaves to the older ones, as the latter contain a larger proportion of the solid and nutritious food which is needed for forming the silk-producing material, which is gradually stored up in the body of the worm until the time arrives for spinning the cocoon. The first leaves fed should be carefully cut up into small pieces about the size of a ten-cent piece—they may be cut in bunches with a sharp knife. This is, in part, to enable the tiny worms to better get hold of their food, and also to enable the feeder to scatter the food more evenly among the worms.

Special care should be taken not to feed the worms upon the red-colored leaves taken from the very young shoots, as the nutriment in such leaves is not sufficiently matured, and, if eaten, will often cause the worms to sicken and sometimes die.

The feeding for the first five days should be very frequent—as often as every two hours the first and second day. The intervals between feeding may then be gradually lengthened to three and four hours. In all cases, however, judgment should be used. The worms should at all times have a plenty of food before them, and it should not be allowed to get too dry. The worms are not usually fed between ten at night and broad daylight in the morning.

It may be remarked, in this connection, that the time of feeding occupies from twenty-five to thirty-five days. This variation is due to the care which the worms receive, and particularly to the temperature at which they have been kept.

If they are well cared for, and kept in a warm, healthy condition and fed often, they will eat all the more within a given time, and arrive so much the quicker to the season for spinning their cocoons. The period for spinning does not depend so much upon the age of the worm as upon the amount of food which it has eaten, and that in turn depends upon its appetite, and that, again, upon its health. It is claimed by most silk culturists that the quicker the worm is brought to maturity the better the silk, the larger the cocoon, and the longer the thread. In order to reach this end, some give one or two feedings during the night. Very healthy and active worms will feed at night—requiring but little or no rest. Sickly or feeble worms require a short interval of rest at night. It is simply in accordance with common sense, that the more healthy the worm the better will be the quality and greater the quantity of silk produced, and *vice versa*.

CONVENIENCES FOR FEEDING THE WORMS.

As already intimated, for merely experimental purposes, but little preparation is needed; but, when it is proposed to fit up a cocoonery where a large amount of labor is involved, it will be found a matter of economy to have a proper series of feeding frames provided, which may be made substantially as follows: Nail together four strips of wood so as to form a frame, of convenient size for handling. Take four of these frames and bore holes in each of the sides, so that the holes in the first shall be one-fifth of an inch apart; in the second, one-third; in the third, two-thirds, and in the fourth, one inch apart. Take stout cotton cord and put it through these holes, and you will have a series of network frames, with four different-sized meshes with which to work. In making the frame some prefer split cane, such as is used for chairs, or fine basket willow instead of cord. If twine is used it should be very coarse.

Common laths firmly nailed together, with tacks driven into the upper surface, at the same intervals as given in the directions for boring the holes, so as to allow the cord to be passed across the frame and held in place by the tacks, is a simpler and, perhaps, equally as good a way in which to construct the feeding frames. The mosquito netting, already alluded to, should also be put in frames. After the worms have become too large to get through the mosquito netting, use the frame with smallest meshes, and so on to the largest.

*The California Silk Growers' Manual, By W. B. Ewer, A. M. Published, under the direction of the California Silk Culture Association, by Dewey & Co., office of PACIFIC RURAL PRESS, San Francisco.

CLEANING OFF THE SHELVES.

Before placing the worms upon the shelves for feeding, each shelf should be covered with paper—common newspapers will answer. By this arrangement when the frames on which the worms are feeding are lifted up the paper may be drawn out by an assistant, with all the litter, which may be readily shaken off and the paper replaced upon the shelf. By this means the worms will not be seriously disturbed, while the shelves may be kept clean and sweet. The shelves should be cleaned off twice between each molting. This is very essential.

Some prefer to dispense altogether with the frames. In this process, when the worms are first placed on the netting or paper to feed, a few tender leaves are scattered about for the first two days' feeding. After that the leaves, without being stripped from the branches, are carefully placed over the worms. They may be longer and heavier as the worms increase in size. The worms will immediately leave the old and crawl up to the new leaves. The branches should be laid on, carefully crossing each other, so as not to pack. When it is desirable to clean off the litter, the branches on which worms are feeding should be carefully lifted up, while an assistant removes the litter as directed in the use of the frames.

THINNING OUT.

As the worms increase in age and size they will gradually require more and more space for feeding. This will be readily inferred when the reader reflects that the feeding process continues about thirty days, and that at the end of the fourth day the worm is only one-quarter of an inch long, while at the thirtieth, or when it is ready to spin its cocoon, it is fully four and a half inches long, and proportionally large of body.

The worms will require increased space the second day, and so on. To secure this, when a new frame with fresh leaves has been placed over the worms, as soon as, say, half the worms have come through, remove that frame to a new place and immediately place another frame, with fresh leaves, to receive the balance of the worms as they come up. If necessary, three frames may thus be used in succession.

CARELESS FEEDING AND CLEANLINESS IMPORTANT.

It has already been observed that the length and perfection of the thread of the cocoon depends largely on the care in feeding and the cleanliness observed. The frequency of feeding should be made largely a matter of judgment and experience. Care should be taken in placing the frames that they do not press down so as to confine the worms, or keep from them a free circulation of air. The frames should lay up lightly while the worms are transferring themselves from an under to an upper one. It would be well to have four or eight legs attached to each frame. Wooden pegs or long nails driven into the under side answer the purpose very well. When fed on branches the worms very quickly mount the twigs to feed and enjoy fresh air. If there should be any considerable number of ill-fed ones, or those who from any cause lag behind, the cocoons produced by them will be imperfect, and the entire lot will be reduced by the buyer to the grade of the imperfect ones.

Especial care should be observed during the last three ages, or from the tenth to the thirtieth day of feeding. The consumption of food at that time is enormous, as will be seen under the head of "Facts and Figures," given at the close of this discussion. The worms usually consume about their own weight in leaves daily, except when molting.

THE MOLTING SEASON.

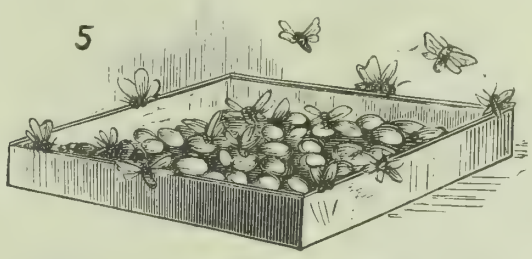
The silkworm's life is divided into five ages; at the close of the first, second, third and fourth ages it molts, or casts its skin. At the the close of the fifth age it forms its cocoon.

The first molting season comes on the fourth or fifth day after hatching. The worms at that time cease to eat, generally retire under a leaf or some litter, attach their hind legs to a branch or leaf by means of a gummy matter which they exude, and apparently fall to sleep. This is called their molting sleep, and during its continuance they must not be disturbed. At this time, and at each successive molting, also when the worms are ready to spin the cocoon great care should be taken to prevent any cold draft of air from striking the worms. It is at this time especially that thunder is apt to injure them. One great advantage which California possesses in the rearing of the silkworm is the absence of electrical discharges, which cannot be avoided in other silk-growing regions. The worm should never be disturbed in any way, not even by cleaning or feeding during the molting season. After each period of molting the worms feed with increased greediness.

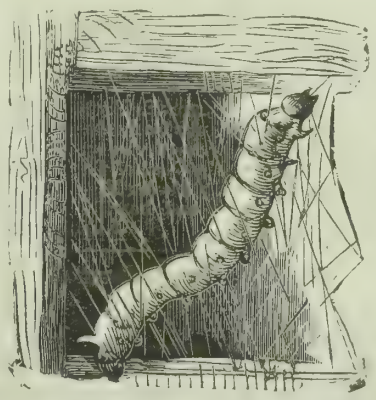
The approach of the molting sleep may always be known from the fact that some of the worms begin to cease feeding and raise their heads, swinging them to and fro with a waving, uneasy motion. When this is noticed, fresh leaves should be immediately placed before the tardy ones to hurry them up, in order that the entire hatching may cast their skins as near together as possible.

This will explain the necessity alluded to previously of always keeping each day's hatching by itself. No food should be given to any of the hatch until all are about through their season, in order that they may have an even start on the next age. After each molting the space required for feeding will generally need to be largely increased, as will be noticed elsewhere. If the young worms appear feeble or with little appetite, feed them for a while with very tender leaves, as when first hatched. If the worms are troubled in molting it is generally because improper food has been given them, or because the temperature of the cocoonery has not been properly attended to. When the feeder has the time to spare he may often save many worms during the two last stages by assisting them, as experience will teach. More or less worms always die in molting. All who die at any time should be carefully picked off and thrown out of the room.

5



MOTHS EMERGING FROM THEIR COCOONS.



Worm Commencing to Form its Cocoon.

The temperature of the cocoonery should always be maintained, as evenly as possible, at from seventy-eight to eighty-two degrees, F. If it falls below seventy-five degrees it must be raised by artificial means. If it exceed eighty-four or eighty-five degrees it should be reduced by increased ventilation, by sprinkling water on the floor, on the outside of the building, or upon the ground around the cocoonery. No cocoonery can be successfully managed without a reliable thermometer.

Living worms should never be handled with the fingers; when necessary to handle them always use a small twig or straw, upon which they will quickly crawl.

FORMING THE COCOON.

When ready to spin, or form the cocoon, which is the eighth or ninth day after its fourth molt, the worms cease to eat, become restless, empty themselves more freely, become more transparent, and slightly diminish in size. They also begin to give out their silk. When these indications are noticed, conveniences must be furnished for the process, and, if placed convenient, the worms will very soon find them. Various devices may be used for this purpose, which the ingenuity and skill of the intelligent feeder, with a little experience, will readily discover. If feeding frames, as before described, have been employed, two of these frames, with spaces between sufficient to accommodate the worms, may be set up endways near the feeding space. The worms will soon find them, climb up between them, and there form their cocoons. Small bunches of straw eighteen inches or two feet long may be tied together near one end and the other spread loosely apart. The worms will find their way into the open heads of the bunches and there spin. Bundles of small twigs may be used in the same way. It may be mentioned here that all boards and other wood work used about a cocoonery should be thoroughly seasoned and free from dampness, pitch or any unpleasant smell.

The cocoon is usually formed in about four days, and three more are required for the worm to pass into its chrysalis state. But the cocoon must not be removed from its place short of eight days for reeling or killing; while, if required for eggs, it must remain for ten or twelve days after the worm has gone up to spin. Care should also be taken that no two worms should form their cocoons too near each other, else they might become interwoven, which would render it impossible to reel them.

The loose floss silk by which the twigs, straw, etc., may be covered, and which also loosely envelops the cocoon, is no part of the cocoon proper. Within this structure, and easily separated from it, is the real silk cocoon, which consists of a continuous thread, generally about twelve hundred feet long.

TREATMENT OF COCOONS FOR EGGS.

At the proper time, as given above, after the cocoons have been completed, if wanted for eggs, they must be separated from the material to which they are attached, and stowed away in shallow boxes in a cool place, of even temperature, where the chrysalis may be allowed to change into the moth. That process will occupy from fifteen to twenty days—according to the temperature—from the time the worms began to spin. The very best cocoons should be carefully selected for eggs—those, generally, which are of light color and firm consistency—feeling hard to the touch. Before being packed away they should be carefully stripped of all the light floss with which they are loosely enveloped.

Care should also be taken to select an equal number of each sex. A male cocoon may be readily known by its being slightly constricted about the central region, something like a peanut. Its extremities are also more pointed than those of the female. The female cocoon is somewhat egg-shaped and quite symmetrical in form, without any constriction whatever about the center.

As the time for the appearance of the miller approaches, the selected cocoons should be brought out and placed on tables or shelves in a somewhat darkened room, warm but well ventilated, where they should be carefully watched until the millers begin to appear. Although they have wings, neither sex flies; but the male is more active than the female, and is readily known by its smaller size and continual flutter of wings. The female moves but little either body or wings.

(TO BE CONTINUED).]

SWEET GUM TIMBER.—The diminishing supply of black walnut for cabinet work and carbuilding purposes, makes it highly desirable that its place should be made good by other kinds of hard wood not hitherto used. Many inquiries are made as to the capabilities of sweet gum for this purpose—a kind of timber which is quite abundant in some of the Southern States. It is strong, close-grained, has a handsome color, is easily worked and holds a nail well, but has an inveterate tendency to spring and warp, so much so, in fact, that if used for coffins, it would, to borrow the expression of a dealer, "twist itself right out of the ground, corpse and all." It is said to give good satisfaction, however, where it has been worked narrow and well fastened. Any one who can discover a method of preparatory treatment that will overcome this difficulty, has a fortune within his grasp. There is an immense waiting market for the timber, in case it can be made available for the same general uses as black walnut. A writer in the *Northwestern Lumberman*, who has been in the lumber business for many years, says he has used it both for framing and finishing and finds that it does well in a twelve year's test, although it is only the old, well-matured trees that turn out good finishing lumber. These trees can be distinguished by their scaly bark. The older the tree the less is the liability to warp, and the better the color; but lumber cut from young smooth-barked trees will warp and spring badly.

IRON or steel immersed in a solution of carbonate of potash or soda for a few minutes will not rust for years; not even when exposed to a damp atmosphere.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully solicited for this department.

Grange Picnics.

Written for the Rural Press by Clara Deming.

The words alone seem to suggest green fields, wild flowers, ferns, a cloudless sky, merry, laughing faces of kind friends, and a lunch spread under the "greenwood tree."

Nature never was more lovely than in these joyous spring days of 1882. Wild flowers bloom in profusion and numberless variety; if only we would cease our daily worries long enough to notice these dainty little denizens of our fields and way-sides.

Sun, earth and air, all contribute to make life "one grand sweet song." Where is there a soul so depraved, but it must feel the gentle influence of this spring weather, and pausing lifts a prayer to the Creator of this beauty, that his daily deeds may not be the only blemish on this fair scene.

Others are having May-day festivities in the wooded dells of nature, why may not Grangers spend just one day with families and friends in innocent pleasure, enriching their inner lives by close communion with nature, and through this medium with her God.

It is an advantage to thus teach the children that farm life is not all hard work. If you would have them to love farm and Grange you must give them rest and pleasure, showing them that Patrons can be merry and have as good, if not better, times than those in other walks of life.

Some of you, I know, have remained at home so long and carried such heavy burdens, that you have come to think pleasure useless and not to be afforded in your busy lives. Is a broken constitution at forty desirable? A little change, which is rest, and a few pleasures which chase away dull care and the worn look, are not mis-spent moments.

"All work and no play makes Jack a dull boy," is an old adage, showing us that our ancestors were not unmindful of the need of occasional "merry makings." So I would say to all, put away trouble and spend a social day in the woods; each trying to make the other perfectly happy and thus making yourselves happy. Selfishness is the great sand-bar upon which we are most liable to wreck our happiness.

All have some grain of sociability in their constitutions and they will benefit each other by letting it shine upon their fellow beings. It is really "hard cash" in the end. The man who is sociable and courteous to those around him is the one who succeeds best and enjoys life as man should.

Let each Grange either have a picnic or join with a neighboring Grange and invite others than members, and let the world know what good times we Patrons have. And perhaps other farmers in your neighborhood may be induced to join the Order. Your children will grow up desiring to become members.

Vallejo, May 2nd.

The Grangers' Bank.

The Bank Commissioners, whose term of office expires May 15th, have just completed an examination of the city banks previous to the closing up of their work as a commission. Mr. Montpellier, cashier and manager of the Grangers' bank, furnishes us the following, which is a copy of the fifth annual examination made of the condition of his institution:

ASSETS.	
Bank premises	$ 77,000.00
Other real estate	14,890.95
Loans on stock and bonds	58,204.03
Loans on real estate	196,474.43
Loans on personal security	106,871.88
Call loans on grain, etc	506,262.72
Furniture, fixtures, etc	3,000.00
Interest accrued	18,350.46
Expenses, Taxes, etc	9,528.65
Money on hand	108,315.95
Total	$1,148,279.07
LIABILITIES.	
Capital paid up	$ 537,200.00
Surplus	21,535.76
Due depositors	275,044.35
Due banks and bankers	172,008.65
Bills payable (mortg. assumed on real estate)	40,000.00
Other liabilities (dividends)	5,422.60
Interest collected	17,067.71
Total	$1,148,279.07

This statement shows that the course of the bank has been steadily forward. The showing is exceedingly creditable, considering the fact that the bank is but eight years old, and that it started under unfavorable conditions. It had a struggle for a time, but it has triumphed by zeal and careful management, and is now upon a sound basis and doing a paying business for the stockholders, as is attested by the fact that the stock is at from two and a half to five per cent. premium. At a meeting of the directors held May 9th, it was decided to proceed at once to erect a brick addition, three stories high, upon the Davis street side, in the place of a wooden structure which is unproductive. The new brick part will be rented before it is finished, as space is in great demand in that section of the city.

Contra Costa County Business Association.

Editors Press:—The annual meeting of the stockholders of the Grangers' Warehousing and Business Association of Contra Costa county, at Grangers' hall to-day, elicited a great deal of interest, hightened by the presence of the Worthy Master of the State Grange, and other leading members of the Order of Patrons of Husbandry.

The exhibit of the business transactions of the association during the past year was satisfactory to the stockholders, and approved by them in the unanimous re-election of the present Board of Directors. The voluminous report of the President is significant, showing the great falling off in the crop of 1881—the deficiency being nearly 60% compared with that of 1880—but conveys the favorable assurance that the present indebtedness incurred for building purposes will be cancelled during the year, contingent upon fair crops and the usual patronage of the public. The hope is a reasonable one, that at the next annual meeting this valuable property will be handed over to the present stockholders free of all incumbrances. The following remarks of the President were pertinent to the occasion:

"Since the day it was my privilege to scatter the golden grain in dedicating our structures to the uses of commerce to carry food to distant nations, only one deep-water vessel, the *St. Charles*, left our shore. We were the first to call attention to the Straits of Carquinez as a central grain shipping point, and the activity on the wharves in sight of us, at Port Costa and Benicia, fully corroborates our prediction. When the exhibit before you should be convincing that the Directors were working hard to secure to you a full recompense for the original outlay, the pusillanimity of many of the farmers kept them from supporting us adequately, nor were they willing to engage in an enterprise having a tendency to benefit them by reducing the cost of transportation and commissions, and securing to our location its inherent advantages. Active co-operation would insure the loading of all the grain raised in the county for foreign export before our door, instead of paying 50 to 80 cents per ton for transhipment, that our neighbors may attend to that job, besides the serious loss by wastage.

"With the expanse of diversified industry and shifting centers of trade, our crops of grain will be from year to year more contracted; to raise wheat in our county, often at a loss and at best at an insignificant profit, cannot last long. Our natural advantages secured by the proximity to a metropolis, favorable climate, richness of the soil, varied topography over mountain, vale and nook; the grain raised in the county will be consumed at home by being converted into more profitable products—orchards and vineyards, covering all available spots. In their disposal and shipment your spacious warehouses and roomy wharves are just the things needed to be utilized in concentrating the trade of the county at this central point, and to secure to you a full reward of your foresight.

"It is admitted that owing to changed conditions our charter of incorporation should be amended to enable us to carry out further business requirements."

A sumptuous lunch, provided by the members of Alhambra Grange, was freely shared with all present; then the afternoon was spent in discussion of topics for the Good of the Order, and the remarks of Worthy Master Flint were most attentively listened to and heartily applauded.

Martinez, May 3d. J. Strentzel.

Alhambra Grange Reunion.

Editors Press:—The third of May dawned rather cloudy and threatened a shower; but, regardless of consequences, we took the cars for Martinez. Arriving at Alhambra Grange hall, we found eight Granges were there represented besides Alhambra, viz: Antelope, Stockton, Sacramento, Temescal, Danville, Walnut Creek, Vallejo and Montezuma. The morning was devoted to the discussion of the propriety of disorganizing and reorganizing the Warehousing and Business Association of Contra Costa county.

A vote of thanks was given the former President and Board of Directors, and a committee appointed to arrange matters for a meeting of the stockholders in two weeks. After discussing many other matters in detail, they adjourned to partake of lunch, which was spread in the warehouse, and not in the lower room, as heretofore. The lower floor is now occupied by a fish cannery. Your humble correspondent was taken to task for saying, in a former communication, that the lunch would be served there; I can only plead ignorance as my excuse. I did not know a fish cannery had been established there and spoke from my recollections of former times.

The walk from the hall to the warehouse rested us and gave us a keener appetite, and the tables looked as well as when placed in the other building. There are two warehouses. One side of one of them had been cleared and swept perfectly clean. We sat down at one long table nearly the whole length of the warehouse, and still there were some to come to the second table. Everything was of the best that culinary art can produce, and we heard many say that the sisters of Alhambra Grange certainly understand this art to perfection. All true Grangers do.

One sister, who has been ill, was welcomed with open arms and rejoicing hearts.

Returning to the hall the Grange was opened in due form and the W. M. of the State Grange introduced, who made a short speech, saying that he advocated short speeches and liked to hear something from every member present. He told of visits among the various Granges and of his visit to the National Grange. He also spoke of co-operation.

Bros. Overhiser and Marsh, of Stockton, with Sister Lander, of Alhambra, and some others, favored us with a few remarks. Bro. Wood, of Danville, District Lecturer, read a paper, encouraging mental and physical industry.

We remained just as long as we dared, and then regretfully had to hurry to catch the ferry boat, thus, undoubtedly, missing many good things that were said afterward. We carried the W. M. away with us, amid the expostulations of Alhambra members; but there were attractions on this side—a daughter at the Seminary—which proved stronger than the good-will of Contra Costa people.

We were all sorry to leave so soon; the day was not long enough, and the ferry time was 15 minutes of 5 P. M. Ferry boats are like "time and tide," they "wait for no man." The shower which threatened in the morning became a reality, and caught us on our way home.

We were cordially invited to be present with the members of Danville Grange on May 20th, where I hope there will be a full attendance of Patrons, as the entertainment will probably repay them for their pains in getting there.

Vallejo. Clara Deming.

Temescal Grange.—On Saturday evening last the meeting was quite a busy one, so much so that Bro. W. G. Klee's paper on Dates was postponed until Saturday P. M., May 20th, when a recess will be held at 2 o'clock, giving opportunity to all friends to come and listen to his interesting essay. The regular session of the Grange will open at 1 o'clock for business. The delegates to the League of Deliverance reported information. The Wheatland Grange anti-debris resolutions were briefly discussed and adopted as published in the Rural Press of April 22d. Bro. Webster offered a résolution looking to the establishment of a life beneficiary in connection with the Grange in this State, which will hereafter be discussed. Sister S. T. Coulter and daughter, of Santa Rosa, were present, with a hearty good will for the Order.

Santa Cruz Grange.—Pursuant to notice, the Santa Cruz Grange, No. 68, met on the 30th inst., at G. C. Wardwell's, at 10 A. M., and among other important business, elected the following officers for the year 1882: G. C. Wardwell (re-elected), W. M.; Mr. C. Van Luven, O.; B. Pilkington, L.; Mr. Kirkpatrick, C.; Mrs. Bell Kooser (re-elected), Sec'y; Thos. Crooks (re-elected), Treas.; Mr. Francis, S.; P. Peters, A. S.; Mrs. Alice Smith, L. A. S.; John Morgan, G. K.; Mrs. Cahoon, Ceres; Mrs. Noble, Pomona; Mrs. Wardwell, Flora. After the business meeting all adjourned to Camp Capitola, and enjoyed a basket picnic and a good social time with many visiting friends.—*Bell Kooser, Sec'y, in Courier-Item.*

El Dorado Grangers.—Our Grangers congregated in a small multitude, from all the surrounding country, last Saturday, to listen to their District Lecturer, Mr. A. A. Bayley, and I am told he held that great assemblage spellbound for at least two hours. The big potato, fat hog, and the best breeds, and how to procure them, were fully discussed to the entire satisfaction of all present.—*Clarksville Cor. El Dorado Republican.*

Shasta County.—We met, the other day, Mr. Edward Frisbie, of Reading ranch, Anderson, Shasta county, who gives a good account of the agricultural outlook of the county. Crops promise well, and a good increase in amount of land cultivated has been made this year. The number of settlers is constantly increasing, and though grain is the chief crop, there is quite an orchard and vineyard area newly set. The people of the county are looking with interest to the approach of the railway by extension, from Winters to Tehama, which will bring the county much nearer to the metropolis than by the elbow route which is now the outlet. We understand that work is now in progress upon this extension.

Agricultural Implements.—The new ware house lately built for Geo. Bull & Co., 31 Market street, is now finished and stocked with a selected line of agricultural implements. The J. I. Case threshers and engines are becoming more popular each year, and, in connection with the straw-burning engine, make one of the best outfits for harvesting, both in point of economy and good work. Farmers would do well to call and examine their stock of reapers, mowers, etc.

Orange Trees.—Oranges find a good market this year, and the disposition is to plant to meet the widening demand for the fruit. Those in need of trees will do well to confer with the Los Angeles County Bank, Los Angeles, as we are informed that they have a fine stock of well-grown trees, both seedling and budded, which they will sell at reasonable rates.

Agricultural Notes.

CALIFORNIA.

EL DORADO.

Agricultural Society.—Placerville *Democrat*, May 6: A meeting of the El Dorado District Agricultural Society was held at the Cary house, Placerville, April 19, 1882, present, G. G. Blanchard, Thos. Fraser, L. G. Norris, Jas. Askew, Chas. McCuen and C. H. Weatherwax. Sundry communications were read and placed on file. Report of Finance Committee read and placed on file. Ordered that season tickets for one person during fair be $2, and membership tickets $2.50, as heretofore. Directors Isbell and Fraser appointed a committee to examine report on Fifth Department of last fair, in regard to premium of Chas. McCuen, which he claims to have been allowed and no order drawn therefor. John Blair was re-elected Treasurer, and C. H. Weatherwax, Secretary, P. J. Isbell, Jas. Askew and Geo. C. Blanchard, Finance Committee; A. P. Hall, J. W. Dench and Chas. McCuen, Library Committee; H. S. Morey, C. H. Weatherwax and Isaac Eddy, Water Committee; Dana Perkins, John Blair and Geo. C. Blanchard, Printing Committee; Jas. Askew, Chas. McCuen, Thos. Hardie and Thos. Fraser, Committee on Premium List; Dana Perkins, L. G. Norris, H. Barton, W. H. Brown, J. H. Kniseley, Geo. C. Blanchard and Isaac Eddy, Committee on Speed Programme; John Blair, J. W. Dench, P. J. Isbell, J. G. O'Brien and J. H. Miller, Committee on Pavilion; C. E. Merrill, Thos. Fraser, J. Askew, J. W. Dench, Committee on Music for Fair Grounds; Fred Collins, Mollie Reynolds, Mollie Carpenter, Lizzie Wichmann, Mrs. D. J. Knighton, Eva Nugent and Carrie Easton, Committee on Music for Pavilion; C. H. Weatherwax, W. A. Selkirk and A. P. Hall, Committee on Diplomas. Superintendents of Track, Thos. Fraser and J. H. Miller. Moved and carried, that the fair this year commence on the 5th and end on the 8th of September. Jas. Askew, C. H. McCuen and Jacob Lyon, a committee appointed for that purpose, reported that they had examined the books of the Secretary and Treasurer, and found them correct and well kept.

Apples.—*Republican:* An immense apple crop is now on the stocks, the maturing of which now only depends upon the extent to which the codlin moth and other insect enemies are permitted to carry sway. From all that we can learn, little or nothing is being done in this section to protect the fruit from the ravages of these pests, which is greatly to be deplored, and the only assurance we have of even a partial crop of sound apples, is that the crop will be so large that there will not be worms enough to go round, or the forlorn hope that they may prove less destructive than formerly. A fight should be made against the fruit pests along the whole line. It will pay to do it. In fact, it has either got to be done, or fruit raising, as a business, abandoned.

LOS ANGELES.

Irrigation Water.—*Commercial*, May 5: The melting of the snows in the mountains causes the streams to run with more than usual strength. The Santa Ana and San Gabriel are especially flush for this season of the year, and will supply the farmers with a large amount of water to be used in the raising of alfalfa, corn and potatoes. An increase of all these products is assured. Supervisor Hannon informs us that the current of the San Gabriel is exceptionally heavy. By wise forethought he connected his fine farm with the Fryer ditch, and now has abundance of water so that he can make hay all the year. Others can do the same, and double their products at a slight expense. Now is the time to use the surplus water of our streams. Our orchards, vineyards, meadows and cornfields can be supplied with abundant water and be independent of a rainfall. A large quantity of hay can be produced from alfalfa, and in that way prevent a speculative rise in the market. The grain that was sown on irrigated land is now ready to be cut for hay, and the haying season will soon be in full blast, with a crop of fine quality.

MENDOCINO.

Hops.—*Dispatch:* The hop raisers of this valley have succeeded in putting their hop fields in splendid condition and are now busily engaged in setting the polls and arranging the strings. The warm weather of the past week has caused the vines to fairly spring out of the ground. The increased acreage of hops for this year, in this valley, is considerable, which will necessitate the securing of a large number of pickers from the outside when the hop-picking season rolls around.

SAN BERNARDINO.

Red Scale in Quarantine.—*Riverside Press.* The Committee of Safety have purchased the orange trees, 500 in number, brought by Dr. Whittier from Orange, and the same are being removed to the Temescal valley for quarantine. The spot selected is isolated to such an extent that if red scale should become developed on the trees the valley proper would not become infected. All parties who had bought or who expected to buy trees from the infected district have now signed the pledge not to bring any such trees to this settlement, and many others have also signed the pledge. This business is now well in hand, and the danger, however small it might have been, has been averted.

Fair at San Bernardino.—In pursuance of a published call, a mass meeting of citizens was

held at San Bernardino on Saturday last to consider the project of holding the third annual fair of the Sixth District State Agricultural Association at San Bernardino. W. G. Morse was chosen Chairman, and C. F. Roe Secretary. The meeting was unanimously in favor of doing all in their power to secure the holding of this fair in San Bernardino this fall, and appointed the following committee of 15 to act as a committee of arrangements: J. W. Waters, Jr., I. R. Brunn, J. Lawshe, R. F. Cunningham, F. E. Brown, John Andreson, H. J. Rudisill, Dan Rathburn, A. Van Leuven, A. M. Kenniston, E. A. Nisbet, S. E. A. Palmer, Louis Cram, Airam Barton, and John S. Ward.

SANTA BARBARA.

BEES.—Lompoc *Record*, May 6.—All the bee men in our valley are very busy making hives, hiving bees, and in the bee business generally, as they are swarming rapidly.

SAN BENITO.

HAY CROP.—Hollister *Democrat:* The farmers are preparing to cut the hay crop, which, by the way, so it is said, will be exceedingly short. The volunteer barley and wild oat hay will be ready for the reaper in a very short time. In some localities the crop will fall short, while in others it will be the opposite.

SANTA CLARA.

SULPHURING VINES.—*Mercury*, May 4: The Santa Clara County Viticultural Society met in regular monthly session Saturday. J. B. J. Portal, delivered a very interesting and instructive address on "Sulphuring." He said that sulphur is to the earth and vines what salt is to the sea. It keeps impurity and corruption away. In the 17th century it was discovered that sulphur would keep vines from mildewing. It is best to sulphur twice a year, or if the vines are diseased they may be sulphured three times. The best time for the first sulphuring is when the buds have from four to six leaves. The young bud will receive the sulphur and absorb it into its pores. This sulphuring will last about six weeks. The next sulphuring should be made after the vines have bloomed, say the 15th of May. The second sulphuring will do for healthy vines. If they are shaded and sickly, they should be sulphured a third time, but the third sulphuring will be detrimental to the vines. The third time should be about the middle of July. The best time of the day in which to apply the sulphur is in the early morning, when the dew is on the vines. If there is no dew, the winds will take away much of the sulphur. Mr. Portal explained the various methods of sulphuring, and said that he used an instrument similar to a watering pot, one man sulphuring about three acres in two or three hours. The best kind of sulphur is the French, as it is finer and purer than the English or American.

SANTA CRUZ.

ROSE SHOW.—*Courier-Item:* The Farmer's club contemplates making arrangements for a rose fair in Santa Cruz about the middle of May. It will probably be held for two days, and is intended mainly to bring together from our city and county specimens of our roses (and perhaps other flowers) that everybody may see whether we have a climate well adapted to the successful growth of this queen of the flowers.

SIERRA.

THE LUMBER BUSINESS.—Truckee *Republican:* In another week nearly all the mills on the Truckee river will be in operation. The Pacific Wood and Lumber company has shoveled out its railroad track, and will commence sawing about the middle of next week. Richardson Bros. start up next Monday morning, and will cut up the 600,000 feet now in their pond, by which time they hope to get in logs on their tramway. Elle Ellen expects to commence cutting in a short time. The Boca mill, which has been shut down for the past ten days on account of a broken shaft, started up again Thursday. They have but a few logs in their pond, but have 3,000,000 feet banked on the Little Truckee, about three miles from Boca, and there will probably be enough water to make a drive by the middle of next week. Geo. Schaffer is ready for business and will commence sawing the first of next week, and will not shut down until next fall. The Truckee Lumber company's mill has been in operation for the past two weeks and will be run to its fullest capacity till snow flies. The Banner mill and Lonkey & Smith's mill, on Prosser creek, will probably be the last along the line to start up. As they have no logs in it is thought they will not be able to do much before the middle of June or the first of July.

SONOMA.

FARM NOTES.—Petaluma *Courier*, May 3: The farm outlook here is still promising. The Hessian fly has injured the wheat on two or three farms in Vallejo township. It has only appeared in late-sown grain or grain planted on impoverished land. Owing to the lateness of the season, grass and volunteer hay crops, it is said, will be short in this section, and good hay will this fall command a fair price. The old hay crop has about been worked off. We are informed that there is no first-class and but little second-class hay now in the warehouses of Petaluma. Recently a schooner-load of good hay was shipped from some point on the bay below Frisco through this city to a point up the railroad. Farmers are preparing their lands for the potato crop. About the same area will be planted this season as last. There will be about the usual quantity of other vegetable crops. Stock of all kinds is doing well. The dairy season, however, promises to be much shorter than usual, and the yield of butter and cheese is estimated at from a quarter to a third less. Fruits of all kinds promise to be abundant. Trees of all kinds, except plums, are loaded down. Sheep raisers are now busy shearing their sheep. The fleeces are said to be very fine, and the yield of lambs fully up to their most sanguine expectations. Upon the whole, the farmers of southern Sonoma have real cause for rejoicing.

VENTURA.

OJAI.—*Signal*, May 6: The prospect for a good crop of grain still continues favorable. Reports of damage to the crop by dry weather in the southern part of the county are a little discouraging, but up to the present time there has been no perceptible damage to the grain in the Ojai. The yield of hay will be good and an average crop of grain may be expected. The bee men expect to commence extracting honey about the first of June. They look for a full crop. Along the roads, over the hills and through the valleys the ground is carpeted with a rich foliage of green, interspersed with millions of wild flowers. The weather is all that we could ask, clear and toning, with a light fog occasionally at night. Invalids and tourists can bask in the sunshine from sun-up to sun-down if they choose.

Solano County Notes.

EDITORS PRESS:—Visiting Suisun and its vicinity, we saw many fields of grain of "great promise." Here, at Elmira, Vacaville and Batavia, all the farmers have "great expectations." And they should have, if appearances mean anything. Mr. Dorsey Cooper, a man of intelligence, whose farm lies about midway between Elmira and Vacaville, said he had harvested 90 bushels of barley with no better prospect than he has this year, and felt confident he would get at least 60 bushels. There are others in the same neighborhood who are equally confident, and though far north, in Colusa county, the prospect is rather discouraging, yet hereabouts they expect 35 bushels of wheat from their "summer-fallow." There have been many notable sales of property in the neighborhood of Vacaville and Elmira during the past year, and, as a consequence, lands adapted to fruits have advanced materially, advancing more than 25% during the past few months. It is the opinion that they will continue to advance for some time to come. Some Riverside fruit growers have recently visited this section, and were not only highly pleased with it, but stated that such lands in their neighborhood would bring double the price. The most notable sale recently made was that of the "Wilson tract," numbering over 400 acres, which changed hands at $125 per acre. This was purchased to be divided and sold in small parcels, and, of course, at an advance. Much improvement is being made in and about Elmira. Mr. Chandler, a lumber merchant and successful farmer, is now putting the finishing touches on a very handsome cottage of modern construction and convenience. He farms his own and others' land as far as he gets the opportunity. R. J. Trumbull, the San Francisco seedsman, has planted a very fine orchard of selected trees, of about 20 acres, and his manager, Mr. J. A. Provines, who, by the way, "they say," is about to make an Oakland lady happier, has about 60 acres under fine cultivation, much of which is planted for seeds. He is also rooting several thousand vines, to be planted out next season. This gentleman now wants your paper regularly, thinking it may make him a better farmer and his wife, possibly, a better cook. Mr. McGlashan, recently from Livermore, has established himself here, and has displayed ability in planting an orchard of about 40 acres. This work has been well done—"no weeds for him." Mr. Groves has also planted out a number of fruit trees, and intends setting out more, and many vines next season. Mr. Frey planted all the apricots he could get, and will, he says, be in time for a supply next season. Mr. Poindexter, a San Francisco gentleman, recently purchased about 80 acres. He secured the services of Mr. Fraser, the oldest orchardist near Elmira, to do his planting. His trees are doing well. Mr. Fraser's orchard is looking well, and we doubt whether there is one in the State that, for its size, pays its owner any better. Mr. Duke, near Batavia, has increased his vineyard by the addition of 40 more acres of vines. He has several times taken the prize for table grapes at the Sacramento fair. Dr. Alexander, whose place is a gem already, has added, the past season, a number of Bartlett pear trees. And so on, and so on. In every direction improvements are being made, and, as a Massachusetts lady, who has spent several months in the State, remarked, "What a State you now have, but what a grand State it will be 10 years hence." When these tens of thousands of fruit trees and vines will have become freighted with their luscious burdens, may it not be that we will willingly convey them to the remote East, and bring back some of that gold, that, 30 years ago, was (shall we say it) abstracted from our "placers," the only then known source of wealth our fair State possessed? TRAVELER.

Elmira, Cal.

ALFALFA.—Alfalfa seed has experienced a sharp rise in value, and is now quoted as high as 17½c, selling price, for A No. 1 seed. For a long time this winter alfalfa was dull, and holders despaired of unloading, but of late the demand has quickened and the rate advanced.

Dropping Fruit.

EDITORS PRESS:—There is a homely old saying, and, unfortunately, too true a one, that we should not crow before we are out of the woods or count our chickens before they are hatched. We fear now that the fruit crop is not going to be near so abundant as at first supposed. The long, cold winter was favorable to the trees, and when the spring finally opened with warm, invigorating summer showers, it gave the trees a strong, vigorous growth of wood, which is evidently the cause of their shedding their fruit. The cherry crop is not going to be as heavy as earlier indications warranted, as some varieties are dropping badly, and it is reported that the trees in some orchards are almost bare, especially so with the light colored. As a rule, the black varieties hold well and bear full. Pears have dropped badly. The Bartlett crop will be light in this section, judging from the complaints; in fact, some say they will have none, or but few. Winter Nelis are nearly all gone; Seckels also nearly all dropped, as well as other varieties, which if general over the State, together with the depredations of the codlin moth in some sections, will have a tendency to relieve the canners of an over supply of Bartletts, as the trade will bid high for them in consequence of a short supply of other varieties, especially in the later part of the season. The early part of the season will undoubtedly be well supplied, as those owning orchards infested with the codlin moth will hasten the fruit to market to save it before it is utterly destroyed, if they are permitted to do so by the quarantine officers.

Some are also complaining that their plums are dropping, at least some varieties. Peaches are very full and hold well, but are badly affected with the curled-leaf, which may affect the perfect development and ripening of the fruit. Even the highly recommended curl-proof varieties are badly affected, but in this there is one favorable feature, and that is, that the leaves commenced to curl very early when the leaves were very young and tender, and I have observed that when this occurs, the diseased leaves soon drop off and the trees put out a new set of leaves, strong and healthy, which rarely curl; but, on the other hand, when the leaves commence to curl late in the season, it materially affects the fruit, tree, and tender young branches; causing an enlargement of the latter, which, if it does not kill it, unfits it for bearing fruit next year, and is often the cause of a decline in the tree. The man who could discover the cause and a remedy for this destructive and perplexing disease would truly be a benefactor to his race.

The almond crop is also very light, although early indications were encouraging. Apples do not look as well as I should like. Some varieties are very full and hang on well, but do not seem to grow fast, although the weather is very favorable; and other varieties are very light, in fact, some have none at all to speak of. Gooseberries look well, but with a light load to carry. Currants look fine and heavily laden. The apricots have outdone themselves in every locality I have seen or heard from so far. I never saw trees look better or hang fuller than they do this year in Alameda county. It is hard to tell which outnumber, the fruit or the leaves. It would be far better for the trees and the owner if they would shed half their load.

The above statement is true of my orchard, with but one exception, and the exception is the plums. I never saw plums so full. Were I to sell them by the dozen, I would feel inclined to let them hang on (and, like Col. Sellers, say there is millions in it), but as I expect to sell by the pound, I think I could get more pounds in half the number, and so will have to thin the trees that refuse to thin themselves.

WM. H. JESSUP.

Haywards, May 9, 1882.

THE FRESNO EXPOSITOR.—Our representative on the recent Fresno excursion was as surprised as pleased to find Mr. Ferguson, the proprietor of the daily and weekly *Expositor*, so nicely fixed with a good newspaper and job-printing establishment in a substantial brick building, built by himself specially for his publishing purposes. It is fitting that the pioneer newspaper of so rapidly built and thrifty a town should have so perfect a home of its own.

SANTA CRUZ REAL ESTATE.—The second number of the *Land Journal*, published by Mr. Henry Meyrick, of the Santa Cruz *Real Estate Exchange and Mart*, is received. It is an interesting sheet and has announcements of many desirable properties.

THE Fresno *Republican* is looked upon as one of our real enterprising and successful southern country local journals. Mr. Miller, the proprietor, who seems to have many friends, has certainly evinced a good share of ability in establishing such a paper, and seems determined to improve the same with the advance of the times.

THE Chico *Record* says there will be almost a total failure of crops in Colusa county this year. On the Glenn ranch they will not have use for one-half the machinery employed last year. Dr. Glenn had hoped to raise 1,000,000 bushels of wheat this year, and had offered his foreman, Pike Gupton, a bonus of $10,000 if that quantity of grain was harvested on the ranch this season.

News in Brief.

THE public schools of Gold Hill have closed for want of funds to pay expenses. The district is in debt nearly $4,000.

GEN. ROSECRANS has presented another petition in the House on the question of taxing imitation sparkling wines.

MARK SHELDON, the well-known Sewing Machine agent, has removed to 9 and 11 First Street.

THE Boston Board of Aldermen have authorized the borrowing of $1,500,000 for the construction of a new system of sewerage in that city.

REAR ADMIRAL JOHN ROGERS died last week. The Admiral was 70 years of age, and for a number of years Supt. of the Naval Observatory.

NEWS of the President's action on the Chinese bill is received with jubilation by the people in the interior, and by the firing of cannon.

A COURIER from the Yellowstone country reports that the Crows are exasperated, and are ordering settlers to leave. However, they do this regularly every spring.

IT now looks as if the national debt reduction for the present fiscal year, ending with next month would amount to the magnificent sum of $150,000,000.

THE proprietors of the iron works at Greenville, Plumas county, have constructed a steam launch, to be run on Feather river, at Big Meadows, for pleasure excursions.

NAVAL officers are almost unanimous in the opinion that it is time now for the Government to stop requiring naval officers to go on expeditions to the north pole.

H. H. WARNER, of Rochester, N. Y., announces three scientific prizes—one for the discovery of comets in Great Britain and America, and two for meteoric stones seen to fall the present year.

A COAL mine has been discovered on the San Jose river, 43 miles from Albuquerque, N. M., on the Atlantic and Pacific road. It shows a vein of eight ft. or more. The mine is only one-quarter of a mile from the railroad.

THE Philadelphia *Times* voices the thoughts of a great many other people when it says: "It should be understood henceforward that people who wish to fool around in the Arctic ocean, must do so not only at their own expense, but at their own risk."

AS a result of the boycotting of G. L. Rist, a business man of Turner's Falls, Mass., by the Irish population, on account of his having served on the McMillan grand jury, the Protestants have withdrawn their patronage from all Irish dealers, of which there are a number.

THE Louisiana House of Representatives have adopted a memorial to Congress asking the Federal Government to take charge of the levees. Resolutions of thanks to the President, Congress and Secretary of War, for assistance to the sufferers by the flood, were passed.

ABOUT 3,000,000 Jews live under the government of the Czar, and it is said that "America" is the word oftenest on their tongues. This is the Promised Land to which they look forward, and a plan is on foot to bring 10,000 more of them to this country this year.

Volunteer Testimonials from Those Who Have Used Booth's Exterminator.

PORT HARFORD, June 7, 1881.

MR A. R. BOOTH, San Luis Obispo, *Dear Sir*—The Squirrel Poison sent to me I have received. I have tried three pounds with perfect success, and think it the best preparation ever discovered for killing squirrels. It should, by all means, be used by everybody that is troubled with rats or squirrels. Following is the number of squirrels found dead after the use of each one-lb can. 1st, 27; 2d, 40; 3d, 24. Total, 91.

Respectfully yours, F. G. HARFORD.

SAN LUIS OBISPO, CAL., January 2, 1881.

The effect of A. R. Booth's Squirrel Poison was thoroughly tested by me last week, and I would not be without it for any money. I used it for two days only, and every squirrel disappeared. Curiosity induced me to open one of the holes, where I found thirteen dead squirrels. I can recommend to all farmers.

FELIX MATTEY.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDOUT & Co., 10 Barclay St., N. Y.

ANNUAL STATISTICIAN OF 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call* Address L. P. McCarty, 502 Taylor St. Price, $4.

MAY 10, 1882.

D. W. KELLEHER, is requested to address this office.

A Handful of Earth.

Here is a problem, a wonder for all to see.
Look at this marvelous thing I hold in my hand!
This is a magic surprising, a mystery
Strange as a miracle, harder to understand.

What is it? only a handful of earth; to your touch
A dry-rough powder you trample beneath your feet,
Dark and lifeless; but think, for a moment, how much
It hides and holds that is beautiful, bitter or sweet

Think of the glory of color! The red of the rose,
Green of the myriad leaves and the fields of grass.
Yellow as bright as the sun where the daffodil blows,
Purple where violets nod as the breezes pass.

Think of the manifold form of the oak and the vine,
Nut, and fruit, and cluster, and ears of corn;
Of the anchored water-lily, a thing divine,
Unfolding its dazzling snow to the kiss of morn.

Think of the delicate perfumes borne on the gale,
Of the golden willow catkin's odor of spring,
Of the breath of the rich narcissus waxen-pale,
Of the sweet pea's flight of flowers, of the nettle's sting

Strange that this lifeless thing gives vine, flower, tree
Color and shape and character, fragrance too,
That the timber that builds the house, the ship for the sea,
Out of this powder its strength and its toughness drew

That the cocoa among the palms should suck its milk
From this dry dust, while dates from the self-same soil
Summon their sweet, rich fruit; that our shining silk
The mulberry leaves should yield to the worm's slow toil.

How should the poppy steal sleep from the very source
That grants to the grape-vine juice that can madden or cheer
How does the weed find food for its fabric coarse
Where the lilies proud their blossoms pure uprear

Who shall compass or fathom God's thought profound?
We can but praise, for we may not understand;
But there's no more beautiful riddle the whole world round
Than is hid in this heap of dust I hold in my hand

—*Celia Thaxter.*

Principal and Interest.

"Oh, mother, mother, I am so tired!"

"Cheer up, my child, we have not very far to go. Come closer; let me brush the dew from your curls. Now take my hand."

But the child hung back, sobbing with weariness and exhaustion, and the pale young mother, bending over her in the vain attempt to soothe the hysterical excitement, did not hear the rumble of advancing wheels until they passed close to her, and a rough, hearty voice exclaimed:

"What ails the little girl? Ain't sick, is she?"

Mary Ellsworth had never seen Farmer Raynesford before; yet the moment her eyes rested on his wrinkled, sun-burned face, with the shaggy brows overshadowing kind eyes, she felt that he was a friend, and made answer promptly:

"Not sick, sir, but very tired. We have walked a long way."

"Got much farther to go?" asked the farmer, ticking the horse's ear with the end of his whip.

"To Breckton."

Mr. Raynesford gave a low whistle.

"That's four miles off, and the little gal is pretty nigh used up already."

"I know it," said the woman, with a sigh, "but I have no money to hire a lodging nearer. In Breckton I hope to obtain work in the factory."

Farmer Raynesford gave the seat of his wagon a thump with his whip-handle that made old Bonney drop the mouthful of clover he was nibbling from the roadside, and prick up his ears in astonishment.

"I won't hear to no such thing!" said he, energetically. "Why, that child can't go 20 rods farther! Here, get in along with me. You won't be none the worse for a bit of supper and a good night's rest. I know Hannah'll scold," he muttered, as he lifted the little girl to his side, and extended his hand to the mother; "but I can't see folks perishin' by the wayside, and never offer to help 'em. Don't care if she scolds the roof of the house off."

He drove rapidly along, making occasional interjectional remarks to his horse, while Mrs. Ellsworth drew her thin shawl around the little golden head that already dropped drowsily upon her shoulder, and thought with a deep sensation of gratitude upon the shelter Heaven had provided her in her sorest strait.

It was an odd-shaped old farm-house, gray with the storms of nearly half a century, with a broad door in one end, overhung by giant lilac bushes, and a kitchen where, even in the bloomy month of June, a great fire roared up the wide-throated chimney, and shining rows of tins winked and glittered at every upward leap of the flames.

Mr. Raynesford jumped out of the wagon, threw the reins over a post, and went in to conciliate his domestic despot.

"Look here, Hannah," said he, to a tall, angular-looking female who emerged from a pantry near by, her face nearly or quite as sour as the saucer of pickles she was carrying. "Jest set a couple more plates on the table, will you? I've brought home a woman and a little gal I found a piece below, e'en almost tired to death. They was calculatin' to walk on to Breckton, but I thought it wouldn't hurt us to keep 'em over night."

"I'm astonished at you, Job Raynesford," said his better half, in a tone of indignant remonstrance. "We might just as well hang out a tavern sign at once, and done with it; you're always bringing home some poor, miserable creetur or other, and"—

"There, there, Hannah," interrupted Mr. Raynesford, "I'm always willin' to hear to you when you're anyway reasonable, but it goes clear agin my grain to see poor folks a sufferin' and never stretch out a helpin' hand. 'Taint Scriptur', nor 'taint human natur'."

"Well, go your own gait, Job Raynesford," responded his wife, tartly. "Only mark my words, if you don't end your days in the poor-house, 'twont be through no fault o' yourn!"

She shut the pantry door with a bang that made all the jelly cups and milk pans rattle, while Job, with an odd grimace, went out to help his guests to alight.

"Don't mind my old woman," said he, apologetically, as Mrs. Ellsworth sprang to the ground "She's kind o' sharp spoken, but she means well after all. We ain't all just alike in our notions, you know."

"If all the world were like you, sir," said the young widow, with tears in her eyes, "there would be less want and suffering, by far."

Farmer Raynesford pretended not to hear; he was busy lifting little Mary out.

"Set on them blackberries, Hannah," said he, toward the close of their evening meal; "the little gal's so tired she can't eat nothin' solid."

"I was calculating to keep the blackberries for the donation party to-morrow," said Mrs. Raynesford, rising with rather an unwilling air.

"Nonsense," quoth the farmer, with a broad laugh, "I'm having a donation party of my own to-night. Here, little one, see if those berries don't put some color into your cheeks."

All the evening little Mary sat by the hearth, with her hand in her mother's and her large blue eyes fixed earnestly upon the kind farmer's face.

"What are you thinking about, dearest?" asked Mrs. Ellsworth once. She drew a long sigh and whispered:

"Oh, mamma, he is so kind to us!"

When Mary Ellsworth and her little girl set out next morning upon their long walk to Breckton, Job Raynesford went with them to the gate, fumbling uneasily in his pocket and glancing guitily around to make sure that Hannah was not within seeing distance. When Mary extended her hand to say good-by, to her astonishment a bank bill was thrust into it.

"Don't say nothin'," muttered Job, with a sheepish air. "Ten dollars ain't much to me, and if you don't chance to get work in the factory right away it may be a good deal of use to you. Needn't thank me—you're as welcome as the flowers in May."

He bent over to kiss the child's fair forehead, and stood watching them until the two slight figures disappeared, and only the golden sky and moving crests of summer woods remained.

"Ten dollars!" ejaculated Mrs. Raynesford, who had witnessed this little episode from behind the curtains of her milk-room window. "Is Job Raynesford crazy? To give $10 to a poor, strolling vagrant! If he don't get a piece of my mind—"

And she hastened out, her cap border fairly standing on end with horror. Job awaited the coming tempest with philosophic coolness, his hands in his pockets, and his lips parted in a good-natured smile. It was not the first piece of Mrs. Hannah's "mind" that had been bestowed upon him, nor did he suppose it was likely to be the last.

"She means well," he said to himself, when the volley of wrath had been discharged on his luckless head, and Mrs. Raynesford had returned to her butter-making, "but she's got the greatest faculties for scolding of any woman I ever saw!"

The years flitted by, sprinkling the steep old farmhouse with crystal drops of April showers, and thatching it with the dazzling ermine of January snows, many and many a time. Gray hairs crept in among the raven locks of Farmer Raynesford, the careworn wrinkles began to gather around his mouth and brow. Alas! those swift-footed years brought troubles innumerable to the kind old man.

"Twenty years!" mused he, one bright June morning. "It don't seem possible, Hannah, that it was 20 years ago this very day that I caught that ugly fall from the hay-rack, and got lame for life."

He looked down at the crutches by his side as he spoke, and sighed from the very bottom of his heart.

Hannah stood in the doorway, tossing corn to a forlorn little colony of chickens. Twenty years had not improved her in any respect—she was gauntier, bonier and more vinegar-faced than ever.

"Yes," said she, slowly, "and perhaps you don't remember that it was just 20 years ago to-day that you threw $10 away on that woman and her child. I told you that you'd end your days in the poor-house, and I don't see but what my prediction is likely to come true. Didn't I say you would live to repent it?"

"I won't deny, Hannah, said the old man," "but that I've done a good many things I've been sorry for—we ain't none of us perfect, you know, wife—but that is not one of them. No, I never for a moment repented being kind to the widow and fatherless."

Hannah shrugged her shoulders, but made no reply.

"Didn't you say you were going up to see the rich lawyer about the $5,000 to-day?" she asked, presently.

"Yes, but I don't suppose it'll be much use. If he'd wait a little, I'd do my best to please him. Jones says he'll be sure to sell the old place from over our heads, however; they tell me he's a hard man. I mean to explain to him just how the matter stands—"

"I told you how it would be long ago!" ejaculated Hannah, unable to restrain her vexation. "What on earth ever possessed you to sign for Jesse Fairweather?"

"I s'posed he was an honest man, and I wouldn't see an old friend wronged."

"Fiddlesticks!" exclaimed Mrs. Raynesford. "That's just your calculation, Job! There—Zeke has brought the wagon; do start off or you'll be late for the York train."

And Job meekly obeyed, only too happy to escape from the endless discord of his wife's rolling tongue.

The rays of the noonday sun streamed brightly through the stained glass casements of Mr. Everleigh's Gothic library. The room was decorated with appurtenances of wealth and taste. Velvet chairs, with tall backs of daintily carved rosewood, were scattered here and there; marble vases occupied niches beside the doorway, and the rarest pictures hung on the paneled and gilded wall. But the prettiest object of all—the one which the rich lawyer oftenest raised his eyes from the writing to contemplate with an involuntary smile of pride and affection—was a lovely woman in a white cashmere morning robe, trimmed with velvet, who stood opposite arranging flowers in a bouquet. She wore a spray of berries, carved of pink Neapolitan coral, at her throat, and tiny pendants of the same rare stone in her shell-like ears, and the slender waist was tied around with a pink ribbon.

"There, Walter, isn't that pretty?" she asked, holding up her completed bouquet.

"Very pretty," he answered, looking not at the roses or geraniums, but directly at the blue eyes and golden curls of his beautiful young wife.

"You are not even noticing it," she pouted.

"Because I see something so much better worth looking at," he said, playfully.

"Do you really love me so very much?" she asked, throwing down the flowers and coming around to his side.

He rose and drew her caressingly toward him.

"My dearest, you are more precious to me than the whole world besides!"

She let her head rest for a moment on his shoulder, and when she raised it there was a tear on her eyelashes.

"Oh, Walter, if mamma could only see how happy we are!"

There was a knock at the door. Mrs. Everleigh slipped from her husband's arm with the prettiest blush in the world, and was very busy with her flowers when the rich lawyer's "right hand man" put his grizzled head into the room.

"The old man wants to see you about that Fairweather business."

"Show him in. Don't look so disappointed love," he said, as the grizzled head disappeared. "I shall not be detained three minutes, and the horses are at the door."

Mary Everleigh never troubled her pretty little head about business matters, so she never looked up as the halting sound of old Mr. Raynesford's crutch echoed on the carpet. But the instant he spoke she started as if an arrow had smitten her, and her slender hands clasped together, listening as intently as though her life depended on hearing every word. The old man was pleading, and sorrowful—her husband politely inflexible. At length Job Raynesford turned to go.

"Well, sir," he said, in a subdued tone, "I don't know much about law and law books, but it does seem hard that an old man should be turned out of the home that has sheltered him for 60 years, and all for no fault of his own. They say that you are a very rich gent'leman, sir; five thousand dollars may seem a small sum to you, but it is my all."

Mrs. Everleigh's soft voice broke the momentary silence that succeeded this appeal.

"Walter, come here one minute—I want to speak to you."

He obeyed, somewhat surprised; she drew him into a deep recess of stained glass window, and standing there with the rosy and amber shadows playing about her lovely brow, like some fair pictured saint, she told him how 20 years ago a weary child and its mother were fed and sheltered by a kind-hearted stranger; how he had given them money and kind wishes, when they were utterly alone and desolate in the wide world.

"But, my love, what has this to do with my business matters?"

"Much, Walter! I am that little child!"

"You, my dearest?"

"I, my husband, and the noble man who, I am persuaded, saved my life that night, stands yonder, with gray, bowed head and sinking heart!"

"Mary, you must surely be mistaken."

"I cannot be mistaken, Walter. I should know him among a thousand. You said you loved me this morning—now grant me one little boon?"

"What is it dearest?"

"Give me that note he spoke of."

Mr. Everleigh silently went to a small ebony cabinet, unlocked it, and drew out a folded paper, which he placed in her hands. She glided up to the old man, who had been gazing out of a window in a sort of reverie, and laid her soft hand on his arm.

"Do you remember that little golden-haired Mary whom you found with her mother, wearied out on the roadside, 20 years ago?"

"Do I remember her, lady? It was but this very morning I was recalling the whole scene."

"And don't you recognize me?" she said, smiling up into his face, as she drew back the drooping curls. "I am little Mary!"

He stood in bewildered silence. All of a sudden the truth seemed to break upon him, and he laid his hand upon her head with a tearful blessing.

"And your mother, my child?"

"She has been dead for years; but it is my dearest task to be the instrument of her gratitude. Here is the note you indorsed; my husband has given it to me. See!"

A small lamp was burning in one of the niches; she held the bit of paper over the flame until it fell a cloud of light ashes upon the floor.

"Well!"

Mrs. Raynesford met her husband at the door the instant his crutches sounded on the little graveled path.

"Why don't you speak? Of course I know you've nothing but bad news to tell, but I may as well hear it at once. Have you seen the gentleman? What did he say?"

"Hannah," said old Job Raynesford, slowly folding up his gloves, "do you remember the $10 I gave that poor young wanderer a score years ago to-day?"

"Why, of course I do. Didn't I remind you of it not 12 hours ago? What has that to do with our troubles, pray?"

"Just this—to-day I received payment, principal and interest!"

"What do you mean, Job Raynesford?"

"The little golden-haired child that sat beside our hearthstone that June evening is Lawyer Everleigh's wife, and I have seen her burn the note that has hung like a mill-stone around my neck for many years. She said it was but paying a sacred debt of gratitude; but heaven knows I looked for no such reward."

There was a moment's silence. The old man was pondering over the past, and Mrs. Raynesford was so taken by surprise that she really could not say anything.

"And now, wife, what have you to say about my financial mistakes?" said Job, archly.

Mrs. Raynesford had no argument suited to the emergencies of the case, and she wisely said—nothing.

American Daylight or Egyptian Darkness.

EDITORS PRESS:—One of our most gifted professors, Oliver Wendell Holmes, affirms that—

"A woman's wit
Lets daylight through you ere you know you're hit."

If to such a literary giant such a fate has be' fallen, surely so humble a worker-scribe as myself may honorably admit that the African daylight, reflected by Mrs. Nichols, did not quite "go through" him, but, at least, penetrated some of the cobwebby coils of his brain. What Mrs. Nichols writes always entertains and usually informs me. Daily am I convinced that there are two sides to, or at least two ways of looking at, every fact. Daily do I find an increasing difficulty in knowing just what is fact. Like Lowell:

"I'm one o'them thet finds it rather hard
To manufacture wisdom by the yard,
An' mayesure off, accordin' to demand,
The piece-good el'kence thet I keep on hand.
The same ole pattern runnin' thru' an' thru',
An' nothin' but the customer thet's new.
I sometimes think the furder on I go,
Thet it *gits harder to feel sure I know.*"

I find myself a bundle of prejudice repeating as truths things that I have been taught are truths. My standard of fitness and propriety—yes, even of *right*—is my father's standard somewhat modified. I find woman occupying a certain position in our political, social and family life, and I accept it as one of life's axioms that such is the proper, fit and right position for woman. I had not give much thought heretofore as to how she came to be just there. I had not sent any information back to those rudimentary relations of man to his fellow when the prime idea was, as Carlyle tells us: "Can I kill thee, or canst thou kill me?" Woman's low place then in humanity's scale is but too easily accounted for. Nor had I pondered how that prime idea has so largely remained the prime idea of humanity, to its eternal shame and disgrace; how to rob magnificently and slaughter ruthlessly has been—nay, is—the world's title to honor; how that lords spiritual joined lords temporal to place the imperial diadem on the head of the boldest plunderer, crowning him "emperor by the grace of God," and committing to his tender care the lives and consciences of hapless myriads of subject humanity. Woman's position, again, is obvious; just so long as might makes right.

A little American daylight is sadly needed, and a little more daylight still needed in America! Of late years the world's tremendous ignorance has much troubled and astounded me. Studying the world's history my wonder ceases. Only as true Christianity, the religion of love, replaces the pseudo-Christianity of the past, the religion of hate, can there be real enlightenment and advancement. We have endured long enough the religion of priestly quibbles and squabbles as to opinions; we want, and must have, the religion of Godlike conduct.

Do justly, love mercy and walk humbly! That's the "more daylight" America needs!

The legal status of woman would then solve itself. But Mrs. Nichols will tell me this is begging the question. So once more to confession of ignorance. My knowledge of the law is, like the law itself, "gloriously uncertain." Those cases of the widows being refused burial in the family grave-lots, because they had only life interests in the property, certainly seems execrably hard. May be, Mrs. Nichols, they were execrable widows. But it looks to me that, on similar grounds, a man might be refused burial in his own grave-lot, unless he has provided, by will, that his funeral expenses be defrayed before his estate is parted among his heirs. I think a clause providing for the payment of just debts and burial charges is usually inserted in wills.

The hardships of the living, however, are of more concern to us; though I might, perhaps, retort on Mrs. N. as to how those widows had raised those heirs. It is the kind of argument she has used effectively, once or more, in her "Light from Africa." We want to become familiar with all the laws that oppress living womankind. Would it be asking too much of Mrs. Nichols if I suggest that, provided her time and strength permit, she would kindly enumerate for the RURAL PRESS those laws she considers most galling and obnoxious, that we may urge their repeal and purge ourselves from the charge of being "slothful and cowardly."

The idea of my being fearful or anxious for the continuance of the "masculine prerogative" I utterly repudiate. Those "smirking bipeds" will well beware that the fair sex "usurp" (*peccavi* once more, dear madam,) no prerogative of theirs—not even the "masculine prerogative" of tobacco and whisky; though it must be admitted the girls are acquiring some rights in the cigarette question.

My anxiety in life is to dissipate, if possible, somewhat of the Egyptian darkness—a day-time darkness, a darkness of ignorance "that may be felt," barring the way at every turn and corner—that still obscures our vaunted 19th century daylight, and all too frequently "smirches the sunshine out of the sky." The pursuit of knowledge has been, and is, neglected for the pursuit of glory, of "the bubble, reputation," or of gold; and thus it happens that our blindness remains with us, although we say that we see. The politician is ignorant of the proper political status of the larger half of humanity; the doctor has not quite decided whether cold water or hot water is best to cure a sprained ankle; the preacher lives by anathematizing his fellow-preacher; and the farmer does not know which breed of hogs or chickens is most profitable, or even whether manure benefits his soil.

What we contemptuously turn from as the "dark ages," may yet have valuable lessons for us—lessons of fuller faith and tenderer trust in mother, sister, wife; lessons, at least, of a more respectful consideration for them and an ampler and more perfect justice to them, as Mrs. Nichols so ably points out.

EDWD. BERWICK.

Carmel Valley, Monterey.

A Wife's Portemonnaie.

When Pat was asked why he was thinking of getting married, he answered: He could almost support himself, and it would be a poor woman that could not do a little toward it. Many a man besides Pat has been married for the same reason, but has not been honest enough to own it. No doubt Kathleen will be much happier with her honest husband than she would if he had made her believe he was worth his weight in money. What if she does have to go out to work, doing other people's drudgery? She will have the pleasure of receiving pay for it, and that will be more than some of her more favored sisters do. I have known a woman to do the same amount of work in a year that her neighbor across the way hired done at $3 per week, besides caring for a large family of children. And what wages did she get? Just enough to keep her from freezing, and not a glove or collar ever found its way to her wardrobe. And yet her husband was just as well off as her neighbor's; "but," said he, "I never allow my money to slip through my fingers without knowing what it goes for." When there was anything needed in the house he got it, and if his wife was not suited, whose fault was it? He said that Cheap Johnny was his patron saint, and he was too short-sighted to see that the best was the cheapest, too bigoted to believe that his wife's judgement was better than his in any such matters. I never knew her to have a dollar she could call her own.

Talk to him about letting his wife handle a share of the profits of the farm, he would tell you that women don't know how to use money. If they don't, it's for the same reason that the slaves did not know how to use their freedom when first emancipated. It was because they never had had it to use.

I have no doubt but that many farmers who read this have been in the habit of dividing the money received from the proceeds of their united labor, but there are hundreds who cram the well-filled pocketbook down into the deepest pocket, with a well-satisfied air that seems to say plainer than words: "It's all mine," and long before all the plans he has been forming for its use are carried out the poor pocketbook looks as though an elephant had stepped on it.

Brother, try a new plan; let your wife help invest that money.—*Kansas Agriculturist.*

YOUNG FOLKS' COLUMN.

A Pillow of Thorns.

There was a great scarcity of good servant girls in Elmdale, and Mrs. Warren awoke one morning after a disturbed night's rest, with the thought that a heavy day's work awaited her one pair of hands.

"I hardly know where to begin, John," she confessed to her husband as she hurriedly dressed herself. "I have some canning that must be done, and the ironing is not anywhere near finished, and there's no denying that the baby is very troublesome—can't wonder that he is, though, dear little thing!" she added, as she bent over the cradle where the baby lay sleeping; "he's cutting teeth, and they probably pain him more than we have any idea of."

"You must keep Katy out of school to help you; she is 12 years old, and surely ought to be able to save you a great many steps."

"Oh, I couldn't think of keeping her out of school just now, she'd get behind in her classes. She can help me before school and at noon—yes, and after school, and perhaps I can get through the day all right, although I do feel a severe headache coming on."

After breakfast Mr. Warren hurried to the store, kissing his wife first, however, and saying, "I'm very sorry for you, dear," then looking at Katy, who sat by the window with her history, he added, pleasantly, "Come Katy, child put up your book and help mother—willing little hands can do big work."

But the trouble with Katy just then was that her hands were not willing. As the door closed after her father, she said without rising from her chair, "You don't need me very much—do you, mamma? I haven't learned my history lesson, and we recite it the first thing."

"Why didn't you learn it last evening? You had a long, quiet evening, with nothing else to do."

"Yes, I know I did, but I had an interesting library book to finish, and after that it was too late."

"Another time you must learn your lessons first, before you amuse yourself with story-books. You can study your lesson now; I will get along without you," Mrs. Warren said.

Noon came. There was a nice dinner upon the table. Upon the bars the smoothly ironed clothes hung, and on the kitchen table there was a row of glass jars, filled with delicious hot fruit. But it was a very flushed and wearied face that looked over the coffee-urn. It was only half-past 12 when the family finished their dinner, and Mrs. Warren said, "Katy, dear, you have half an hour before school; supposing you tie on a big apron and help me get some of these dishes out of the way?"

"Oh! dear! I don't see how I can, mamma, I missed my practice hour this morning, and you know I have to take my music lesson to-morrow. But I'll let it go if you say so," Katy said, fretfully.

"Go and practice." That was all Katy's tired mother said, as she gathered up the many dishes preparatory to removing them to the hot kitchen. Katy's conscience troubled her some as she practiced her scales in the pleasant parlor. Two or three times, in place of the musical notes, she saw a tired mother's face, but she did not close her instruction book and go to that mother's relief, only struck the notes more vehemently. It was 4 o'clock when Katy returned from school. Looking into the sitting-room she found the baby asleep in his cradle, and her mother, with bandaged head, lying upon the couch.

"All quiet along the Potomac?" Katy questioned, as she bent to kiss her mother's hot cheek.

"Quiet just now; but the baby's nap is nearly out, and I dread his wakening. My head is much worse. I think you'll have to get tea to-night, dear; I don't think I possibly can."

"All right, mamma; but it is not near time yet, and can I go over to the slope after wild clematis? The girls are waiting at the gate, and we'll not be gone long."

"You can go if you'll be here at five promptly."

"Yes, ma'am, I'll be here," Katy answered as she danced from the room, unmindful of her mother's pain. The door closed after her with a bang which woke the baby, and he began crying. It was some moments before Mrs. Warren's dizzy head would allow her to get up and lift the screaming child from its cradle. She put him on the floor and gave him his box of playthings, which he threw all over the room—even into the dining room beyond. Mrs. Warren did not seem to care where he threw his playthings so long as he was amused. She laid down again and held her throbbing head, watching the clock as the hands crept closer to five, hoping that thoughtless little Katy would keep her promise. The clock struck one—two—three—four—five. Oh, how the little hammer beat her weary head! But, notwithstanding her pain, she arose, built the fire, prepared the supper—a pain in her heart worse than that in her head. "Can it be that my little Katy does not love her mother," she thought.

Supper was all ready when Katy made her appearance at the same time with her father and brothers.

"I am so sorry, mamma. I meant to come sooner, but I was having such a nice time," began Katy apologetically; but her father stopped her.

"Hush! Where have you been?" he said, sternly. "Your mother all alone with the baby? Look at her tired, red face." But his reproof stopped just here, for the tired red face suddenly grew ashy white, and Katy's weary mother was unconscious.

Months have passed since then, but Katy's heart is still sore. Her mother is a patient invalid without the ability to walk a step. Every night as Katy's head falls upon her pillow, she looks about her room's pretty belongings—mother's love and taste breathing through them all—and thinks of what that gray-haired doctor said months ago, as he looked pityingly at her dear mother. Looking at her thoughtless little Katy he had said, "Mother has had to work too hard this hot, close day; she's too delicate for such prostrating work. I suppose you help her all you can?"

"Ah, but that's the trouble! I didn't help mother all I could; that's why my pillow pricks so."

Poor Katy, don't you all pity her?

GOOD HEALTH.

Pin Worms and How to Get Rid of Them.

Like all the myraid parasites which afflict humanity, the pin worm probably came to man by migration from some of his poorer relations of the strictly animal world; it is not reasonable to suppose that Adam had them all.

It is commonly held that transmission is now made by the mouth, the eggs being taken in water or on infected food handled by persons afflicted with worms.

The eggs have been found under the finger nails of children and others troubled with pin worms. It is also on record that the worms have been found in the intestines of infants dead *in utero*, indicating either spontaneous generation or the circulation of the eggs in the blood of the mother.

The period of incubation is uncertain, probably three or four days, as it takes about a week for the intestinal tract to become infested after a thorough evacuation of its contents.

The belief that the worms inhabit the rectum only is a mistake. The breeding place of the pest is the cæcum, whence the worms descend or are involuntarily carried to the lower bowels and rectum. For this reason ordinary injections and medicines taken by the mouth afford only temporary relief. To exterminate the pest they must be reached (and the females killed) in the cæcum, particularly in that portion not purged when the intestinal tract is cleared in the ordinary way.

The simplest means of killing the worms the writer discovered by experiment to be by their immersion in *pure water*. Used to the denser secretions of the intestinal tract, the worms absorb water by endosmosis until they burst. Hence the rational and effective remedy by drowning the pests with copious injections of tepid water after the intestinal tract has been thoroughly washed out, the injections being ample enough to surely flood the cæcum.

The injection should be made while the patient is lying on the back; perhaps most comfortable and effectively while lying in the bath. It is best not to depend upon a single irrigation of the cæcum, or some worms may escape in folds of the lining, or eggs enough may be left to perpetuate the pest. A second flooding should be resorted to in three or four days, and to make assurance doubly sure, the flooding may be repeated once a week for several weeks. With patience and care a perfect and permanent cure can be effected. If your correspondent's physician finds nothing to render the treatment suggested inadvisable in his case, he can count on certain and immediate relief.—*Experience in Sci. Am.*

BALDNESS.—There are several varieties of baldness which are not equally curable. The baldness which results from a fever or other acute malady usually disappears in a few weeks or months. Baldness resulting from dyspepsia is usually curable after recovery of the general health. Patchy baldness, a baldness which appears in spots, is a nervous disease, and usually incurable. When the bald spot is smooth and shiny, with an entire absence of hair, or nearly so, recovery may not be looked for from any remedy or plan of treatment known. Improvement of the general health, with daily friction of the scalp with cold water and a soft brush, will accomplish as much in the line of permanent benefit as can be done in any case. Hair restoratives are nearly all poisonous and dangerous.—*Good Health.*

THE EYE IN INSANITY.—The London *Lancet* states that there are "no appearances of the eyes worthy of a moment's notice in the diagnosis of insanity. The "wildness," "unnatural brightness," "dullness," "vacancy," etc., so frequently mentioned in certificates of insanity, are utterly groundless as evidences of mental "unsoundness." The writer adds that "there is incomparably more restlessness, vacuity and the like in the eyes of the sane than in those of the insane."

THE most unhealthy city in the world is St. Petersburg, in which one-twentieth of all the inhabitants die annually.

DOMESTIC ECONOMY.

METHOD OF COOKING OLD FOWLS.—Let the birds be kept as long as possible hung up where there is a free circulation of air; and, when picked and prepared for dressing, cover the bottom of a saucepan with slices of good, fresh, English bacon, upon which lay the bird, then add a pint of good, strong, well-seasoned gravy; place the saucepan upon a slow fire, the cover being on, and let the contents simmer for an hour and a half or two hours, turning the bird occasionally and supplying more gravy, if necessary; when done, let the contents be put away in a dish to cool. Birds dressed in this manner are good hot, but they are far better when cold. For preparing poultry for the table, M. Syon invented a plan; by cutting the sinews of a bird it not only appears plumper and fuller when cooked, as the heat is liable to contract the sinews, but it also affords facilities for carving when the sinews are divided; they are trussed in the usual way, only using strings instead of skewers.

CHICKEN CROQUETS.—Chop the white meat of a cold broiled chicken very fine; chop an onion very small and fry it with an ounce of butter; then add half a tablespoonful of flour; stir for half a minute; then add the chopped meat and a teacupful of good broth, salt, pepper, a pinch of nutmeg; stir for about two minutes; remove from the fire and stir in the yelks of two eggs; then replace it over the fire for one moment, stirring it well; add few chopped mushrooms or two truffles, and turn the whole on tea dish to cool; when thoroughly cold (not before) mix well together and portion it out on the pasteboard, about a tablespoonful to each portion; roll up each portion to the shape of an egg; have bread crumbs ready and dip each croquet first into beaten egg and then into the bread crumbs, rolling so that every part may be covered; fry in plenty of boiling fat, and drain carefully upon paper before serving.

LOBSTER SALAD.—Lobsters require to be boiled from 15 to 20 minutes, and when taken out of the kettle should be broken in two, that is, the body should be separated from the tail before it is placed in a colander to drain. When perfectly cold cut all the flesh into dice, and put it in a salad bowl with the soft portion of the inside, and mix with it some lettuce cut very small, salt, pepper, vinegar, mustard and a very little oil. Place it when well mixed in the center of a glass dish like a mound, and spread a mayonnaise sauce over it. Decorate it with the center leaves of the lettuce, hard boiled eggs cut in halves or slices, or in fancy shapes, capers, beets and slices of lemon. As the center dish on the table it may be further decorated by two or three flowers placed on the summit.

DELICIOUS LIGHT TEA BISCUIT.—Two quarts of best sifted flour, one pint of sweet milk, in which melt one-quarter of a pound of butter, one teaspoon of salt in the milk, one teacup of fresh yeast. Make a hole in the center, pour in the yeast (well shaken), stir diligently with a fork. Let the milk, etc., be just blood-warm (no more), then knead as bread. Cut it across, through and through, with a knife. Let it rise six or seven hours, as it may require. Take from the pan, knead it well, cut in small cakes and put to rise in pan an hour or more before baking.

FRENCH ROLLS.—One pint of milk, one small cup of home-made yeast (you can try bakers') flour enough to make a stiff batter; raise over night; in the morning add one egg, one tablespoonful of butter, and flour enough to make it stiff to roll. Mix it well and let it rise, then knead it again (to make it fine and white), roll out, cut with a round tin and fold over, put them in a pan quickly, and cover very closely. Set them in a warm place until they are very light, cook quickly, and you will have delicious rolls.

FRIED FOWL.—When you have cut the pieces, put them into a basin with a little salt and pepper, a spoonful of oil and two of vinegar, and a little chopped eschalot; stir them well in it and let them remain for half an hour; have ready a quantity of butter, and take a fork and dip each piece, one after the other, into it, and then let it drop into the frying-pan, in which is sufficient hot fat to cover them; fry a nice color and serve in the form of a pyramid, with fried parsley over, or any sauce you like under.

BAKED INDIAN PUDDING.—Three quarts of milk, six heaping iron-spoonfuls of meal, three eggs, one coffee-cup of molasses, one of sugar, butter size of an egg, one teaspoonful each of flavoring extract of nutmeg, ginger, cloves and cinnamon, salt, one coffee-cup seeded raisins. Boil half the milk, wet the meal to thin batter with the balance of the milk, and stir into the boiling milk; when cool, add the other articles and bake slowly three or more hours.

HOMINY MUFFINS.—Take two cups of fine hominy, boiled and cold; beat it smooth; stir in three cups of sour milk, half a cup of melted butter, two teaspoonfuls of salt and two tablespoonfuls of white sugar; then add three eggs well beaten, one teaspoonful of soda dissolved in hot water, and one large cup of flour; bake quickly.

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SAN FRANCISCO:

Saturday, May 13, 1882.

TABLE OF CONTENTS.

EDITORIALS.—An Improved Cattle Car; The Value of Fine Stock; 369. The Week; The Spring Wool Trade in Boston; Government Aid to Agriculture; The State Fair, 370

ILLUSTRATIONS.—Improved Car for the Carriage of Live Stock, invented by A. C. Mather, of Chicago, 369; Scene of Fresno County, 377

CORRESPONDENCE.—The Anti-Debris Convention, 370

SHEEP AND WOOL.—The Mohair Industry, 370

SERICULTURE.—Silk Culture in California, 371.

PATRONS OF HUSBANDRY.—Grange Picnics; The Grangers' Bank; Contra Costa County Business Association; Santa Cruz Grange; El Dorado Grangers; Alameda Grange Return to Temescal Grange, 372.

AGRICULTURAL NOTES, from the various counties of California, 372-3.

HOME CIRCLE.—A Handful of Earth, (Poetry); Practical and Impractical, American Daylight or Egyptian Darkness, A Wife's Portmanteau, 374-375.

YOUNG FOLKS' COLUMN.—A Pillow of Thorns, 375.

GOOD HEALTH.—Pin Worms and How to Get Rid of Them; Baldness; The Eye in Insanity, 375.

DOMESTIC ECONOMY.—Method of Cooking Old Fowls; Chicken Croquets; Lobster Salad; Delicious Tea Biscuit; French Rolls; Fried Fowl; Baked Indian Pudding; Hominy Muffins, 375.

Business Announcements.

Fruit and Fish Canneries—Whittier, Fuller & Co.
Oxnard Cottages, Mission St.—John Pommal, Proprietor.
Wine Cooperage Co., Fulda Bros., S. F.
E. Detrick & Co., Dealers in Bags, Burlaps, Tents, etc.
Powell's Electric Elevator, Stockton, Cal.
New Store, Austin Brothers, Stockton, Cal.
Bailey, Badgley & Co., Agricultural Implements.
Matterson & Williamson, Farm Implements, Stockton
Fred Cross, Farm Implements, Stockton, Cal
S. M. Cory, Real Estate Insurance, Fresno, Cal.
Thos. E. Hughes & Sons, Land Agents, Fresno, Cal.
Central Pacific Association Colony, Fresno, Cal.
Cook & Mathews, Real Estate Agents, Fresno, Cal.
Champion Mills, Fresno, M. J. Church, Proprietor.
Fresno Republican Book and Job Printing Office
Vineyard Fruit Lands—Welters Rancho, Fresno, Cal.
Daily and Weekly Expositor Newspaper, Fresno, Cal.
Real Estate and Mining Broker, J. M. Braly, Fresno.
Blacksmith and Wagonmaker, Wm. Robertson, Fresno.
Fresno Co. Bank, Fresno, Cal
The Farmers' Bank, Fresno, Cal.
Baker & Hamilton, Agricultural Implements, S. F., Cal.
Young Ladies Home School, Oakland, Cal.
Something New—Matterson & Williamson—Stockton, Cal.
Geo. Bull & Co., Agricultural Implements, S. F.

The Week.

The scanty supply of water from this winter's storms is now becoming apparent in most parts of the State. Only the especially favored districts, which always have enough rain, will make their best show this year. Although the result of the season will be much better on the average than was feared early in the winter, there will still be rather small crops in considerable districts of the State. There have been drying winds which have robbed the growing grain and pasture, and the result will be a quick maturity with short growth. It bids fair, however, to be a year of good prices which will compensate the producer somewhat for lack of quantity. We look for a high range of values in grain, dairy produce, all kinds of livestock, and in such fruit as the canners demand. It is reported from the fruit district of Alameda county that the fruit is dropping off badly. We should like to hear if such experience is general, for growers should know early if anything occurs to reduce the visible supply, as the effect upon values will be marked.

The President has signed the "new Chinese bill," which restricts the landing of Chinese during the next 10 years. This will give time to experiment with drawing in more desirable population, and we trust the European may prove his title to the land.

Government Aid to Agriculture.

One of the most notable contributions to the agricultural literature of the day is a discussion of "Progress in Agriculture by Education and Government Aid," by Prof. E. W. Hilgard, of the University of California, which appeared in the *Atlantic Monthly* for April and May, 1882. The essay has since been republished in pamphlet form, and should be widely circulated. It will enable the reader to better understand the attempts to solve the problem of agricultural education and Government encouragement to agriculture, than any other review of the subject of which we have any knowledge. It also gives a clearer analysis of the conditions affecting the effort to build up institutions for agricultural education, than has heretofore been brought forward. For many years Prof. Hilgard has been practically engaged in this work in several States, and writes of it as only an actual participant can write. The anticipations, the quick growth of plans which struck the popular fancy and their subsequent virtual abandoment as impractical, though advocated upon the most "practical" grounds; the later adoption of different plans and their steady, though slow gain in popularity—all these are reviewed with great care and circumspection—and, as we have said, will give the reader the best knowledge attainable concerning the present standing of agricultural education in this country.

It is not within our limits even to outline the argument or to cite the evidence presented in support thereof. We can, however, present the conclusions legitimately deducible from the experience had in the establishment and working of agricultural colleges in the United States, as to the wants of the agricultural population in respect to education, and we do so in the hope that all who are interested will obtain Prof. Hilgard's essay, and see for themselves upon what data the conclusions are based. The deductions are as follows:

1. Education corresponding to that given in the peasant schools of Europe, impressing upon the pupil the rules and practice of agricultural operations by means of constantly repeated manual exercise, and at the same time giving him a merely elementary general education, proves unsatisfactory and unacceptable here, where there is no peasant class, whose pursuit, as a rule, passes hereditarily from father to son. Those who care for education at all desire something more than mere routine training.

2. Neither is there a considerable demand, at least consciously, for high scientific training in agriculture, apart from the need for teachers for the agricultural colleges, as is proved by the insignificant attendance on the schools of agricultural science unprovided with model or experimental farms.

3. The colleges of an intermediate character, combining more or less of actual farm labor with a fair amount of higher instruction in the sciences, are more or less numerously attended. A large proportion of their pupils, however, fail to pursue farming as a calling after leaving college, having resorted to the latter as a cheap and convenient high school, rather than for professional study. On the whole, their influence in improving the methods of agriculture in their respective States has not been marked, except in the case of those which have assumed, to some extent, the functions of experiment stations, and as such have rendered assistance in the solution of practical agricultural problems.

Upon this quality of direct and immediate benefit to the agricultural industry Prof. Hilgard rests his claim for success and usefulness in the agricultural colleges, which are properly conducted, and he describes their value and work as follows:

The fruitful idea of the agricultural experiment station, where questions of local or general importance are systematically and thoroughly investigated under all the lights that science can give, and whence reliable results are directly and promptly communicated to those interested, touches the quick of the whole problem of the agricultural colleges in the United States. Their importance and usefulness in Europe in the elaboration and investigation of details is thrown in the shade by that which they should possess in a new country, where new and untouched problems of the most vital importance confront the farmer at every turn, problems whose solution, even if covered by the general teachings of agricultural science, lie far beyond the reach of any but the trained investigator, provided with all the means and appliances that modern science can furnish. No agricultural college in the new states will need to bid for a cheap but hollow popularity by lowering its functions to that of a peasant school to secure attendance of pupils, if it will but undertake to prove the value of the knowledge that may be acquired within its halls, by taking up and determining (not *ex cathedra* and dogmatically, but by patient, conscientious and practical research) some of the many unsolved questions that the farmers of the State will bring before its instructors, so soon as it is known that such things will be attended to by them. The colleges will thus be performing the most important function within their power, under the circumstances; that of educating the fathers of the rising generation to a proper estimate of the value of the knowledge which is offered to their sons. Instead of the ceaseless wrangling as to the value and merits of any particular system of agricultural education, they will find themselves accomplishing that of whose value no one will raise a question, and securing that respect and appreciation of the use of intelligence and science in agriculture which is not only the expressed intent of the Morrill act to foster, but also the most efficacious remedy for the indisposition of our youth to engage in farming, and for the prevention of the disastrous results threatened by exhaustive culture.

This argument will commend itself especially to California agriculturists, for here Prof. Hilgard has given a demonstration of the value which can be returned to the farmer by a careful investigation of the materials and manifestations which advance or thwart his efforts. With the limited means he has had at command he has done wonderfully in securing and disseminating valuable information concerning many local agricultural problems, and has gained for himself the co-operation and approval of our farmers, and has largely increased the number of students at the College of Agriculture. It would not be modest in him as a writer to adduce this most important evidence in support of his argument, hence we bring it forward. It is well known here, but at the East this item of recent California experience may not be so generally understood.

The second branch of Prof. Hilgard's theme is the scope and operation of the United States Department of Agriculture. He reviews the history of the department, giving it credit for much good accomplished and criticising some of its policies and management. He does not approve of the movement to make the Commissioner of Agriculture a Cabinet officer, because of the political character which such a position would demand, and which would render the officer liable to removal whenever elections should change the political complexion of the Government. He would prefer "the Commissioner to become a technical expert, responsible not only officially to the Government, but amenable to that rigorous and incorruptible tribunal constituted of his scientific and technical compeers, and under the standing menace of a loss of his professional reputation, which no whitewashing committees, in or out of Congress, could in any manner condone or undo. The substitution of the opinion and judgment of the republic of letters and science for that of the political one would constitute a self-executing measure of civil service reform which would quickly sweep away the clogs and barnacles that have heretofore beset the progress of the department toward its highest usefulness. It would at once place it in a position of active and necessary reciprocal sympathy and co-operation with the agricultural colleges and experiment stations, and, through these, with the real wants of every portion of the agricultural domain. It would thus naturally and legitimately become the leading center of agricultural information and progress, gathering up all the disconnected threads, now scattered from the Atlantic to the Pacific, into a radiating net-work, conveying back and forth messages of mutual information and encouragement, by deed as well as by word."

Thus Prof. Hilgard has placed upon record a forcible plea for the unification of the several public agencies at work under Government sanction in the aid of agriculture. Most assuredly there should be the fullest co-operation. We can conceive of no scheme which could be better to show forth varied local needs of so great and diversified a country, and to minister to them. It would cost something to carry out such a plan, it is true, but this claim the Professor meets with these forcible words:

If it should be contended that the carrying into effect of the system outlined in the preceding pages would necessitate too great an increase of expenditure, the answer is that if the present appropriation were to be tripled or quadrupled, it would yet bear but an insignificant proportion to the magnitude and commanding importance of the interests involved, and would be but a fraction of the millions annually wasted upon expenditures of at least doubtful general utility. The country can far better afford to do without a large proportion of the expensive party maneuvers, investigating committees, and "jobs" designed for the manufacture of political capital, than to neglect any longer to foster the fundamental industry, by giving those who exercise it the fullest benefit of the lights that education and science can bestow.

The Spring Wool Trade in Boston.

Walter Brown & Co.'s monthly wool circular for April gives the following sketch of the spring wool trade: The month of April opened with a continuation of the depressed state of trade previously noted; manufacturers were not disposed to pay quoted prices, except as their necessities forced them to buy a little wool, and dealers being anxious to clear up their lofts before making arrangements to take on the new clip, were profuse in their expressions of dissatisfaction at the situation. The disposition on their part, however, was to move stocks at whatever cost; hence concessions were the "order of the day," particularly on fine washed fleeces, until a point was touched which satisfied manufacturers that liberal purchases showed a good opportunity for a speculative profit. This position was reached during the week ending April 20th, and resulted in transactions of fine Ohio, Pennsylvania and Michigan fleeces for that time, amounting to over 600,000 lbs. This large aggregate for one week is more than double the amount of sales for any similar period since January 1st, and naturally gave more stability to the market, on this class of wool. The assortment of washed fleeces at present in the seaboard markets has become much reduced, and desirable parcels are not easy to find. This depletion of the stock has had a tendency to stiffen prices a little from the lowest point of the first 10 days of the month; but any step in this direction has thus far restricted operations and caused buyers to retire from the field.

As the new washed clip of Ohio can hardly be offered on the Eastern markets before the middle of June, and as the supplies of old fleeces are somewhat limited, it is not impossible that those manufacturers who confine themselves to this class of wool may be obliged to pay a slight advance for such purchases as they make during the ensuing month; there are, however, no present indications that any material rise can be sustained after the new wools begin to accumulate at the seaboard.

Fine unwashed wools have shown no important change since our last monthly issue; in fact the market has been almost practically bare of all unwashed and Territory wools of this grade for several weeks past, hence there has been no occasion to change quotations. The prospects for the coming clip of these wools look very favorable; reports from the interior promise a condition fully equal to that of last year, and the satisfaction expressed by such manufacturers who have been using these wools indicate a preference over washed fleeces, and undoubtedly an active demand for the wools as they come on the market.

The State Fair.

The Board of Directors of the State Agricultural Society met in Sacramento last week, there being present President Larue and Directors Shafter, Hancock, Coleman, Green, Shippee, Finigan, Chase, Newton, Carr and the Secretary, Ed. F. Smith. The principal object of the meeting was the consideration of a speed programme for the State fair of 1882, which opens in Sacramento on September 11th. After a long session the Board adopted the following

Speed Programme:

FIRST DAY.—Monday, September 11, 1882.

No. 1—Running stake, free for all. Three-quarter mile dash; $50 entrance, $15 forfeit; $200 added. Second to save stake.

No. 2—Running stake for foals of 1879; $50 entrance p. p.; $300 added; 1½ mile dash. Closed March 1, 1881, with 19 nominations.

No. 3—Selling—Purse $250, free for all, one mile and repeat. Second horse to receive $75; entrance 5% to third horse. Horses entered to be sold for $1,500 to carry entitled weight, 1 lb. off for each $100 under fixed valuation.

No. 4—Trotting—Purse $1,000—2:40 class.

SECOND DAY.—Tuesday, September 12, 1882.

No. 5—Trotting—Purse $1,200—2:25 class.

No. 6—Trotting—Purse $600—Three-year-olds and under.

No. 7—Trotting—Purse $500—Two-year-olds, mile heats.

THIRD DAY.—Wednesday, September 13, 1882.

No. 8—Running stake for two-year-old fillies, ⅞ of a mile; $50 entrance, $15 forfeit; $200 added. Second filly $75, third $25.

No. 9—California Derby stake for three-year-olds, one and one-half mile dash; $100 entrance, $25 forfeit, $250 added; second horse $100, third $50.

No. 10—Running stake, free for all, dash of one mile; $50 entrance, $15 forfeit, $200 added; second horse $75, third $25.

No. 11—Selling—Purse $250, 1⅛ miles, second horse to receive $100, entrance 5% to third horse; horses entered to be sold for $1,000, to carry entitled weight, 2 lbs. off for each $100 under fixed valuation.

No. 12—Trotting—Purse $1,200; 2:30 class.

FOURTH DAY—Thursday, September 14, 1882.

No. 13—Trotting—Purse $1,200; 2:23 class.

No. 14—Pacing—Purse $600; 2:25 class.

No. 15—Trotting—Purse $800; two miles and repeat; 2:40 class.

FIFTH DAY.—Friday, September 15, 1882.

No. 16—Running stake for two-year-old colts and fillies, dash of one mile; $50 entrance, $15 forfeit, $200 added; second horse $50, third $25.

No. 17—Selling—Purse $300, free for all, dash of one and one-quarter miles; $100 to second horse, entrance 5% to third; horses entered to be sold for $1,200 to carry entitled weight, for $1,200, three pounds off, for $1,000, five pounds off, for $750, seven pounds off; for $500, 10 pounds off.

No. 18—Post stake, $100 entrance, $500 added. Dash of three miles, free for all. Weight 100 lbs., three-year-olds 90. Second horse to receive $150; third, $100. Starters to be named Wednesday evening, September 13th, at 8 P. M.

No. 19—Running purse $250 for beaten horses one mile and repeat, entrance free, second horse $50.

SIXTH DAY—Saturday, September 16, 1882.

No. 20—Trotting—Purse $1,200, 2:19 class.

No. 21—Trotting—Purse $1,000 for double teams of 2:30 class.

No. 22—Occident stake for 1882 closed with 12 nominations.

Entries to all of the foregoing races to close with the secretary, Edwin F. Smith, Sacramento, on Tuesday, August 1, 1882.

The following events for 1883-4 were ordered to be closed at the same time.

California Derby stake, for foals of 1880, to be run at State fair of 1883; one and one half mile dash; $50 entrance, p. p.; $300 added.

Same stake for foals of 1881, to be run at State fair of 1884; same conditions.

Maturity stake, three-mile dash for four-year-olds in 1883; $100 entrance; $25 forfeit; $500 added; to be run at California State fair of 1883.

California annual stake, for foals of 1881, to be run at the State fair of 1883; dash of one mile; $100 entrance; $25 forfeit; $250 added.

Trotting purses divided at the rate of 60, 30, and 10% to first, second and third horses, respectively.

The Shafter Premiums.

Judge J. McM. Shafter offered the following premiums, which were accepted: $50 in plate to the girl under 18 years of age for the best loaf of wheat and Boston brown bread made by herself alone; an equal premium to the young man under 21 years of age for the exhibit of any product of mechanical, agricultural or other industrial occupation.

Premiums for Best Milch Cow.

The society voted a premium of $40 to be awarded to the owner of the best milch cow. The terms of this contest are to be as follows: The cows contesting shall be openly exhibited from the first day of the fair until allowed to be removed; they shall be milked in the presence of a judge on the morning and evening of Wednesday; the milk of each cow shall be kept securely by said judge or trustee until Thursday at noon; it shall be measured and weighed upon being first drawn; on Friday morning at 10 o'clock the milk shall be skimmed and the cream churned; the butter shall be well worked and weighed; the milk shall be likewise tested by a lactometer; upon this data three judges, one of whom shall be the one above assigned to duty, shall decide upon the merits of the cows exhibited.

The board adjourned to meet August 4th.

SALE OF WILLOW DALE.—Mr. N. C. Carter has sold Willow Dale, his beautiful place in San Gabriel valley. The price, we understand, was $13,500.

THE town of Luning, on the Carson and Colorado railroad, between Hawthorne and Belleville, is growing rapidly, and is already being talked of as the future county seat of Esmeralda county.

Fresno and Surroundings.

[Written for the RURAL PRESS by H. P. C.]

In the recent excursion to this town we had the opportunity of seeing something of this notable portion of the great San Joaquin valley, which just now is attracting the attention of so many settlers searching for homes, and drawing so much capital and energy into this its busiest center. For several years we had heard the stories of its poetic climate, the possibilities of the water sprites when lovingly drawn away from their river home, how like the genii of the Arabian tales, they could bring wealth and splendor in a night, making gardens of roses out of these dry plains of sand, and waving forests of living green where before not a tree or shrub could be seen. We had read these things as we had read the Eastern tales, and we believed them as much as we believed those, and no more. We had heard with the ear, but now we have seen with the eye, and we are converted. We propose to give some account of what we have seen, which will give the reasons for the faith that is in us.

Fresno City and suburbs is but a small item in the level portion of Fresno county, which, in itself, is a plain 60 miles square and contains nearly a million and a quarter acres; but it is the most active point, at this time, of the whole immense San Joaquin valley. The report has gone abroad through the State and over the mountains, of the marvelous effects of water applied in careful cultivation of the genial soil, and hundreds of home seekers are turning in this direction, so that not a day passes without some new adventurer coming to try his skill or his luck in this new field. The town itself contains, perhaps, 2,000 people; and around it, in a semi-circle north, east and south, are the colonies and the great vineyards. To show the activity of this locality, we will give an abstract of the real estate business done within a radius of 8 miles, since Jan. 1, 1882, or a period of less than four months, which real estate men in San Francisco and Oakland can read and compare with the business done in these cities in the same time. Whole number of transactions, 871. Unirrigated lands, 130 sales, 60 501 acres; irrigated lands, 38 sales, about 7,000 acres; town lots, 587; colony lots, 116.

One sale was a tract of nearly 11 000 acres. One tract of 7,080 acres sold for $54 460; less than $8 an acre. A gentleman recently from Riverside said to a resident here, if this land was in San Bernardino county, it would be worth $200 an acre.

To show on what a scale the energy and enterprise concentrating here is working, we will give the acreage of a few of the purchases made since the advent of the movement here.

LIST OF VINEYARD LANDS IN FRESNO, AND NUMBER OF ACRES IN EACH TRACT.

	Sections.	Acres.
Mr. Eggers of S. F. owns 11 sections....	11	7,040
Mr. Holms has 12 sections in one tract and 3 in another.....	15	9,600
N. E. Col., owned by Mr. Haggin of S. F.	10½	6,720
The Washington Colony has 11 sections	11	7,040
The Central Colony has 6 sections.....	6	3,840
The American Colony has 5 sections....	5	3 200
The Kirby tract has 5 sections.....	5	3,200
The Fresno Colony, Hughes & Sons, 4½..	4½	2,880
The Nevada Colony has 3 sections.....	3	1,920
The Henrietta Colony has 2½ sections..	2½	1,600
One section by Mr. Jarboe, of S. F.....	1	640
The Wolters Colony has 2 sections....	2	1,280
The McNeil Colony has 1 section.....	1	640
The Barton Colony has 1 section.....	1	640
The Eisen Colony has 1 section.....	1	640
The Temperance Colony has 1 section..	1	640
Two and a quar. sec. by Hughes & Sons.	2¼	1,440
The Olive Hill Vineyard.....		400
The Fresno Vineyard Co.....		450
The Theodore Kearny tract.....		340
The Scandinavian tract.....		320
The Malter tract		320
The Butler tract.....		2 5
The Goodman tract		1 0
		55,175

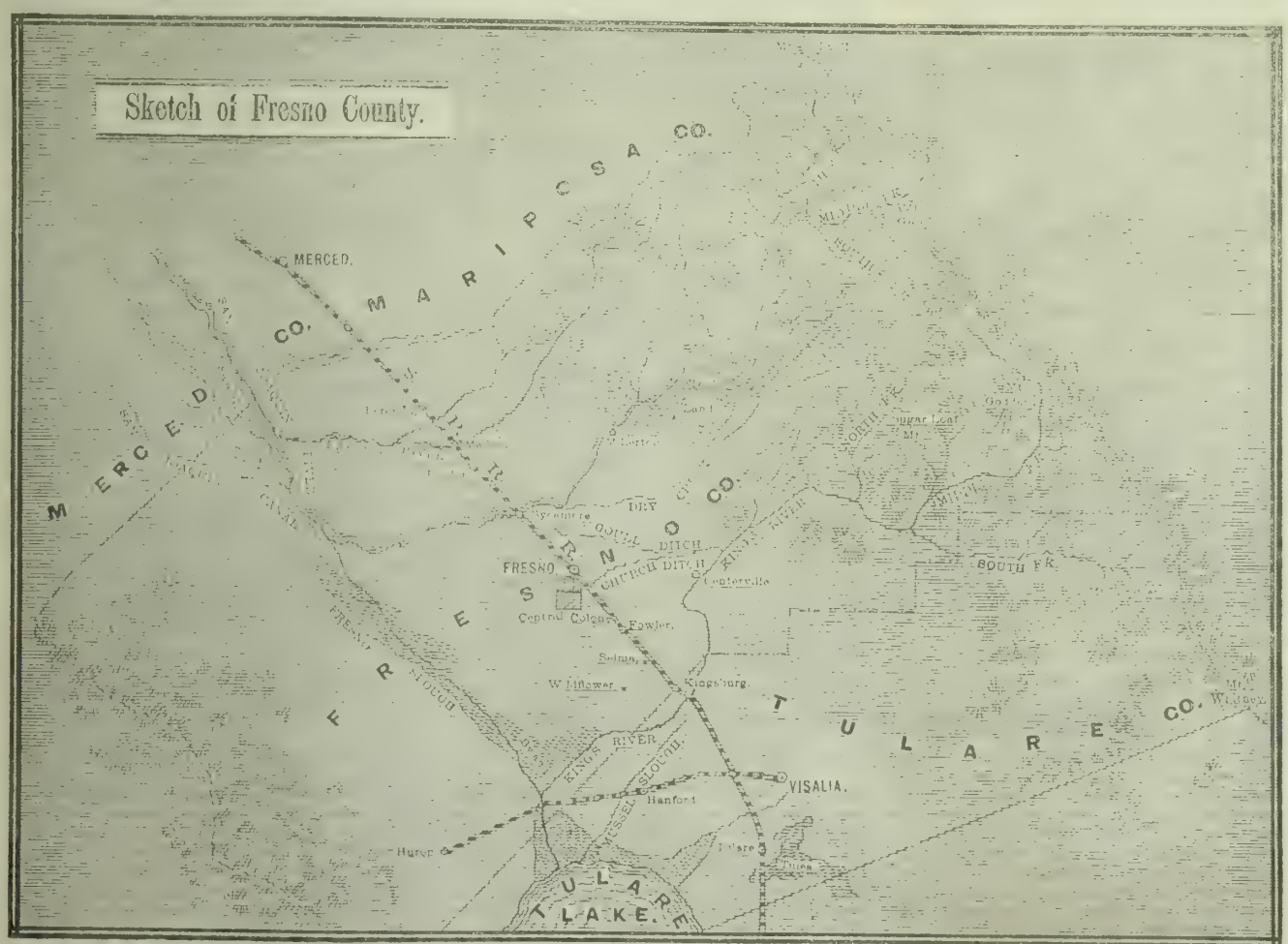
To appreciate what is being done, it must be remembered that a section of land is a tract just one mile square and contains 640 acres. Now, there are, just here, where this little town sits upon the vast sand plain of the great San Joaquin valley, over 50,000 acres already marked off into squares, by ridges and little streams of clear water, and being made ready for the vine and the fruit tree. Eighty sections—each one mile square! Arrange these squares into a line one after the other (one mile wide and 80 miles long). Look at it, when irrigated, settled down, made level as a floor, sown to grain or to the deeper colored alfalfa—one magnificent green plain, just slightly inclined to the west, waving in its bright emerald beauty! Eighty miles long! Or, change that form into a parallelogram 4 miles wide and 20 miles long. See it planted with vines and orchards—as it will be—20 varieties of grape, 40 varieties of pear, the peach, the apricot, nectarine, the cherry, the plum, the fig and the olive, the orange, lemon and banana, all growing as in their native clime; besides all these, every variety of berry known to our gardeners, and melons of many kinds, and around all, as a protection from the north wind, thousands of shade trees—20 varieties or more. Go up on the Sierra tables—grander than Lebanon—and look down on this enchanting picture; another Damascus, with Pharpar and Abana on either side, snow everlasting on that eastern ridge, 14,000 ft. high, but long reaches of the Damascene plums purpling under this Syrian sun below.

If it should chance to be in the month of April or of May, outside of all this rich new growth of recent culture you will look down also upon myriads of gaily colored wild flowers, spread out by the square mile, as did Col. Fremont's party in that first fearful journey of exploration through the desert and mountains. Coming at last over the final ridge and looking down into the glowing valleys of California, they stood and shouted with all their might for very joy. Nothing but explosions of noise could express their delight, for they had come out of desolation, distress, hunger and the shadow of death, to look down upon fields radiant and glowing with acres upon acres of the golden eschoslzia, the purple larkspur and the crimson potulaca. Who can wonder that they lifted up their voices in hallelujahs. And over these carpets of gay patterns there will roam from one to two millions of simple sheep and thirty to forty thousand head of cattle, in blissful ignorance of the slaughter-pens of San Francisco and the flesh-pots of this modern Egypt. Besides, there are bands of horses, happy swine by the thousand, and the cheerful indigenous squirrel, with his bosom friends, the owl and the rattlesnake. Will your Eastern subscriber to the PRESS think this is talking large for one county of our State? I suggest to him that this Fresno plain is 60 miles square, or contains over 3,000,000 square acres of surface for this happy family to play upon.

That would be a mighty pasture in Rhode Island or even Massachusetts. Is the Eastern reader aware of the dignity of this county? The Sierra range of mountains is rather an important ridge on this side of the continent. It would be on any continent in the world. It is the most elevated mountain range in the United States. But the highest portion of it is in this county—a stretch 100 miles long with peak after peak climbing up 14,000 ft. into the blue sky. Up there on those grand altitudes have originated 40 living glaciers, and Kings river and the San Joaquin were born in this cool spot. This is a mountain home for the coming poet to sing about. The English poets of the Lake school thought they had some high places where the gods dwelt. But here are 5,000 square miles of country piled up, with but few places that man can scale less than 9,000 ft. high. The heaviest body of timber in the State is here. The *sequoia gigantea*—monarch of all forest—lifts its majestic head here 400 ft. to the north wind, its robust body being 120 ft. in girth. This timber belt is over 30 miles wide and stretches through the whole county. The canyons and waterfalls and lakes are on a scale similar to Yosemite, making this region one of the wildest and most interesting in the State. Gold and copper are found in sufficient quantities to work at a profit. But the county is to be noted for its stock, its agriculture and its fruit, especially the last. The valley land slopes gently to the south and southwest, and the drainage will be toward Tulare lake. The soil of this plain is varied wonderfully—a dozen varieties. There is no gravel to speak of, only in what is termed the "hog wallows," near the foothills. In the vicinity of the foothills and the San Joaquin river the land is solid and rich, much of it being a red clay mixed with a white quartz silt and sand. Farther south and east the soil is what is termed "white ash," and appears to be volcanic in nature. It is white sand and loam, a little clay and vegetable matter, and is very easy to work. Nothing could apparently be better suited to the grape and other fruits than the soil of this whole region. In it every variety of grape flourishes as if at home, and we believe the dried fruits of this vicinity are soon to rival those of the Mediterranean. Alkali is found in spots, but so far has not interfered very materially with crops. Irrigation seems to bring it to the surface where before it was unknown. Some crops will flourish in it, the beet, for example; and when that can be made profitable, alkali land will be utilized. Wheat can be grown in it, if it is not on the surface in too great quantities to kill the germ. Alkali increases toward the west, and on the extreme border, next to the coast range, the land is not suitable for fruits or any crop. Where irrigation is not practicable wells can be sunk. Toward the northern part of the west side, however, Miller and Lux have, by irrigation, worked wonders and changed large sections of dry plains into green fields.

But there is something besides poetry in this so favored locality. Believe this if you are tired of the city and wish to try farming. The climate is not an unhealthy one, but the summer sun is very hot to a person accustomed to the bay atmosphere. The soil is very easy to work—but that does not mean that any clerk, or school-teacher, or broken-down merchant and politician can work it. It requires much care and real work to manage even twenty acres, if you do it yourself. It needs money, too, in spite of the constantly published circulars of land agents, that a man can buy his twenty-acre lot and clear it in two years by work only. Men of large means, who can put on teams and twenty to fifty men, can work wonders in a short time; but the laborer, who gets his twenty-acre lot, and hopes to have a home of comfort in two or three years, has a problem before him that will not be solved at first sight. It is not quite an ideal Eden, where no evil thing ever comes. They *do* come, in spite of dreams to the contrary. The north wind will blow here; the sand-storm runs mad here; frost settles here, suddenly, sometimes; the season does not begin when it ought to always; it closes abruptly sometimes; the red spider may strip your vines; the lively grasshopper may eat the leaves—yes, the very bark of the vines; the vine hopper may nip them, and the grape moth may stock them with her progeny—she has already done this once, and twenty tons of the fat worms are said to have been gathered in one year from these vineyards, but they can be subdued, and have been. The vines also suffer from cancer, as it is called; but that, as in human disease, is, so far, we think, beyond human skill. If you ever discover it, you may as well dig up the vine at once, and settle it on the spot. Five crops of the magical alfalfa will grow in a season sometimes, it is true, but it will not be in the first year. Don't you believe it. It will bring you $20 a ton sometimes; but you cannot bet your bottom dollar on it. It will grow three tons to the acre; but it won't be on *your* land every time. You can settle down on that truth and rest. Every kind of grape I ever heard of, and many I never dreamed of, will grow here to perfection. But, my friend, don't try to get them all on to your twenty-acre lot because the agent said you could. This land will produce eight tons to the acre when four years old, perhaps. A respectable gentleman told me that, and I said I did not believe a word of it—but I do now. But *you* will not get eight tons to the acre every time on your little spot, doing your own work. The bright visions of fairy-land are all well enough. These stories told at twilight make a fairy-land. But they are the exceptions—possibilities only. It may be so, but the solid ground is better to stand on than gossamer webs in air. Get some money first. Assure yourself of payments. Get the means to live on for two years at least, before buying anything. Make haste very slowly when you do start. Get the best, most reliable information possible, and use your own judgment. Settle in advance what work you can do yourself and what you must pay cash for doing. Settle also, as near as you can, when your first cash returns are coming in, and make your present cash meet that time. This means work, prudence, economy, care—sometimes disappointment. But when everything has been carefully discussed and settled come to Fresno county, to raise cattle, or sheep, or hogs, or wheat, or grapes, or mixed fruits. You can do these things here if you can do them anywhere. You can live on 20 acres, or on 10 acres, here, if you can anywhere on earth, and you can be independent. You need not work any longer for other men. If you can only buy 10 acres of this land and work it, you and your children need not be made to feel every 24 hours that you are slaves of somebody else. You and they need not be made to feel in school, in church, in society, in business circles, that you hold an inferior position, and are therefore neglected and humiliated. There are schools here, churches here, lyceums here, books here, cultivated people here. If you can break from your bondage in the city, do so and come to Fresno, and be free, be independent, be noble, and cringe no longer to caste.

We will now give some statistics in detail of the special localities in the vicinity of Fresno city. We do not give all these facts from the lips of the residents—some of whom it was impossible to see—but all are, we believe, mainly correct and reliable.



The Barton Vineyard.

Mr. Robert Barton is well known as a mining expert and member of the San Francisco Stock Exchange Board. He resides here now with his family, and is making his home a paradise of beauty and comfort. He has a section, 640 acres; 500 acres are set with the choicest varieties of wine grapes. We rode over the ranch in company with Mr. B., and its special features were pointed out to us. He has 80 acres in alfalfa, and 20 acres in the best varieties of apricots; the whole closely fenced, rabbit proof. We counted on one apricot tree, less than two years old, over 100 well-formed apricots, an indication of what may be expected from the acres in a short time. The house—an elegant mansion—is beautifully located, standing on a slight elevation overlooking the whole grounds. An avenue leads up to it, shaded with poplar, cypress and oleander trees. Avenues lead round the four sides, each a mile long; also through the center each way, all shaded with Lombardy poplar and Italian cypress, and other trees. We saw no residence here equal to Mr. Barton's. It would be beautiful anywhere, and an ornament to any city. The fitting up inside and outside and all the surroundings are first-class.

It is lighted with gas. A green-house and croquet ground and flower garden make it cheerful and attractive. He is not obliged to use surface water for the house, as a well 270 ft. deep furnishes 20,000 gallons to a tank, and is distributed as needed. It is raised to the tank by steam power. The barns, stables, separate houses for white men and Chinamen, tool-houses, are all substantial and in good taste, and built regardless of cost. Mr. B. informed us that he had already spent over $100,000, and will soon put up a winery and distillery. Every foot of this 640 acres is cultivated and irrigated. Mr. B. does not believe in using as much water as do some of the smaller cultivators. He showed us spots frequently in our ride over the grounds that had been irrigated but once, and some not at all, where the soil was quite moist to within three inches of the surface. He irrigates his trees and vines by simply plowing a furrow on each side and running the water along that furrow. The whole ground then becomes moist enough by seepage. We regard this as an eminently wise act, and think the wholesale flooding of the land as often as some do it a very bad plan, and one that will soon work much mischief, causing malaria. In some places it has already been manifest. I saw one lady who is suffering from chills, residing in the town of Fresno, five miles from these vineyards on the east, where the water was first used. Mr. B. cultivates the surface constantly, which tends to keep the ground below moist, and to introduce the sun and air to the roots of the vines. Thorough surface culture and less irrigation will be the future law in all these vineyards, if health and prosperity are regarded. Mr. B. is here to stay, returning here from New York, where he had gone with some other capitalists several years since, when high taxes and communism threatened San Francisco. He traveled over the State with Mr. Lacratel, Commissioner from the French government, sent to inspect our vineyards, and he chose this spot by advice of the French professor, after visiting all the noted vineyards in the State. It is safe to say that it is a good place to settle in. Mr. B. is certainly making it an Eden of beauty. Mrs. B. makes the home charming to all visitors by her hospitality and gracious manners, and three bouncing boys give evidence of the healthful surroundings.

The Nevada Colony, owned by Mr. Roeding, of the German Loan and Savings Society, lies to the east of Mr. Robert Barton's vineyard. It contained originally three sections, 1,920 acres. One section, 640 acres, has been sold in 20 acre lots and settled. The balance is being gradually sold in larger tracts and no small lots are now offered. Mr. Goodman, formerly of Virginia City, tired of serving the public in the sanctum of a daily journal, has bought a fine tract of 320 acres here, and a good portion of it is already green with vines of choice selection. Four or five other tracts, of 160 acres each, have been sold to gentlemen of means from San Francisco, and all this vicinity is rapidly improving; and, under the influence of money, is being transformed from ugliness to beauty. And what was only three or four years ago one broad sea of desolation as far as the eye could reach, is now fast becoming a panorama of living beauty.

The Fresno Vineyard Co. is made up of some of the leading wine manufacturers of San Francisco, with Mr. L. P. Drexler as President and Mr. D. D. Hudson, Manager, who has succeeded Mr. Theo. Kearney. The company has 450 acres, a part of the Easterby ranch, near the Eisen vineyard. The tract is all under cultivation, and is enclosed by a fence, rabbit proof. The vines are only one year old but will produce considerable fruit this year. Most of these vines are of choice wine varieties. There are nearly 10,000 fruit trees, 10 acres of elderberries and 60 acres of alfalfa. There is a fine two-story house for the Superintendent and offices fitted up with all conveniences—hot and cold water throughout; and a wine-house is soon to be built. Its future is flattering.

The Wolters ranch contains about two sections—1,280 acres—and is on the market, for sale in lots to suit.

The Olive Hill tract has 400 acres. This lies to the west of the Eisen vineyard, and corners on Mr. Barton's property. It is not yet improved. Between the Olive Hill land and the Eisen vineyard lies Mr. Malter's fine ground of 320 acres. One hundred has been planted in grapes of choice varieties. They are but one year old, but promise well. Mr. Malter also owns the Henrietta rancho, one mile to the south.

The Henrietta rancho contains 1,636 acres of as good land as, perhaps, can be found here. It lies next to the Fresno vineyard on the south, and is of the same general character as that of the Eisen tract, and the whole Easterby rancho. It is distinctly different from the soil of the Washington colony, having more of the red clay and less of the light ash soil. It is good wheat land, and, by good cultivation, is capable of producing large crops of grapes and fruit—as the Eisen vineyard has proven, three-year old vines yielding eight tons to the acre. Seven hundred acres of this tract is in alfalfa. As this grass can be cut five times in the year, and, under careful cultivation, will produce one ton and upwards to the acre, we can see what the product of a 700 acre field like this will be. It was sold last winter in the market for $15 to $20 per ton. Take it at $8, and see the income of one year's growth of grass, while waiting for the vines and fruit to mature—3,500 tons, $28,000! There are also 150 acres of the best raisin grapes set on this vineyard, and a wine cellar is soon to be built. The future of this fine property is very hopeful.

Blooded stock is to be raised on this alfalfa. A sheep owner said here, recently, that he proposes soon to put 960 acres of his sheep range into alfalfa. An acre will keep 10 sheep through the dry season, so he can thus reduce his sheep range from 13,000 acres—about its present limits—to 1,000. Great is alfalfa, under the manipulation of the genius of the river!

Mr. Butler, of San Francisco, has 255 acres adjoining the Fresno Vineyard Co. tract on the west. He began work only a year ago, but he has nearly 200 acres already set with the White Muscat raisin grape, which is probably the largest raisin vineyard in the county.

As the vines were all planted at the same time the fruit will all ripen at the same time; and when 200 acres of fruit, eight tons to the acre, (which I am assured on good authority is not an exaggeration) is ready for gathering, there will be a lively scene at Mr. Butler's. Raisins, to be of first quality, need careful and wise handling, and when 1,600 tons in one vineyard are to be picked, carefully selected, separated, the best from inferior, laid on trays, dried and turned, carried to the packing house, packed for sweating, taken out and repacked in 5, 10 and 20-pound boxes, paper lined, marked and shipped, the gentle and innocent reader in San Francisco that never saw a vineyard or a raisin made in California can wake up to the fact that this is a scene of wonderful activity. When he further realizes, if he is capable of the effort, that this scene will be multiplied one hundred or one thousand-fold in the near future, he will be likely to exclaim, with eyes wide open, Great is the magician of the rivers!

The Eisen Vineyard

The Eisen vineyard is one of the earliest in this valley. He has 640 acres. Two hundred and fifty acres are under cultivation, but did not show as careful painstaking, we thought, as did Mr. Barton's. He has most of the choice wine grapes, and some of the best wine in the State is made here—such wine as cannot be made in Sonoma or Napa. We think that, for bouquet and exquisite flavor, it can be scarcely excelled anywhere. Mr. Eisen showed us some that is valued at $6 per gallon. It is a wine not for common people—the peasantry—but only for the king and the maker, said an expert; in fact, it is a wine that, in Greece, in its glory, would have been a wine for the gods. If not ambrosia, we do not know anything of that article. He shipped last year a large quantity, and this year, he told me, probably 100,000 gallons would be made. He has, on his grounds, several acres of Egyptian corn, which yields abundantly. His three-year-old vines produced eight tons to the acre last year. They are worth three cents a pound for wine, or $60 a ton, giving the value per acre of $480. One may easily estimate from this the value of 500 acres of vines, and compare with the wheat or any other crop. It may sound like fiction to persons not familiar with the vine, but we are assured that 250 varieties of grapes are now growing in this vineyard.

The Scandinavian Colony was organized three years ago. Originally, there were 320 acres; afterwards a section was added, making 960 acres. It was sold in 20 acre lots, mostly to men from Norway, Sweden and Denmark; hence its name. These men are all workers, thrifty and economical, and the colony has been a success from the first. There are over 40 families in this colony, and generally they have come to stay. This is shown by the facts that they have a school, a church organization, and a regular lyceum for discussions.

The Fresno Colony is a new enterprise, organized by Messrs. Thos. E. Hughes & Sons, whose energy has done much to advance the interests of Fresno and vicinity. There are 4½ sections in this colony, and it is offered in 20-acre lots. The land is well suited to the vine and orchard fruits, easily irrigated, and lies close to the town. These circumstances make it favorable for homes. Several excursions to Fresno have been organized by the Messrs. Hughes, and thus many hundreds of people have been made familiar with the vineyards and other attractions of the place. The hospitality and generosity of this firm in providing for the entertainment, comfort and pleasure of the visitors, free of expense as regards carriages and other things, is proverbial, and for which very many visitors have much reason to be grateful.

Mainly through their energy and activity a plan for a cannery was projected last year. The stock had been subscribed and the scheme was in a fair way to be realized; but we were told by parties interested that the grasping spirit of the railroad officers discouraged and disgusted several of the prominent subscribers and they withdrew from the enterprise, and it stopped at once. It was found that local rates would be charged from San Francisco to Fresno, on goods to be shipped East, in addition to the regular rates, and said they: We will not submit to it. We have seen how the railroad charges for goods shipped from Chicago and New York to points in Nevada. They will not bill the goods to their destination simply, but insist on receipting for them through to Sacramento city and then send them back to Nevada, and charge the consignees for the extra freight. We do not propose, they said, to do this in Fresno. Parties from Riverside told us that they had the same trouble, and were obliged to pay extortionate rates in many cases or not get any goods. Why the railroad insists on schedules of rates that will kill all such enterprises on their own lines of road it is difficult for our ordinary intellects, said they, to discover; but they do, and we shall wait till justice is done us, and let all such manufactures lie still. Mr. Thomas Hughes, however, has again revived the interest, and will endeavor to see it carried out. He, in connection with Mr. Hinds, of the Fresno County bank, and Mr. Oden, of Fresno, have formed a joint stock company, and have already disposed of sufficient stock to warrant the success of the enterprise, and they have accordingly purchased the land and will complete their plans for a building and for active business as soon as possible. Messrs. Hughes & Sons have also been active the last week in the midst of the business excitement caused by the excursion, in circulating a petition to have the local 4 P. M. train from San Francisco to Madera, taking tourists to Yosemite, to continue on to Fresno, so that parties desiring to visit Fresno on business could leave San Francisco on the 4 P. M. train, after business hours; reach Fresno at 1 A. M.; stay one day, and return on the 6 A. M. next morning, thus being absent from the city but two days. The prospect is that it will be granted. Now if the railroad will cease charging local rates of $10 per ton on goods designed for the East, and which are not to pass between the two towns at all, they will make some influential friends where now only enmity can exist.

Mr. Thos. Hughes, the youngest of the firm, has a vineyard started of 480 acres. He has a fine field of grain in, 350 acres; also, 15 acres of alfalfa and an orchard of choice fruits. Mr. William Hughes, of the San Francisco agency, will begin work here in the coming fall on a half section or more and put in a vineyard and orchard. These young men have the means and the spirit to make substantial improvements on their land, and, although not obliged to labor, they have too much unexpended vitality bottled up to sit down and look on in such an ants' nest as this is.

Thomas Hughes has had much experience as a sheep-herder, and his nomadic life on these plains and in these rough mountains will make a quiet home among his vines a luxury to be appreciated.

The Central Colony

The Central Colony was organized in the summer of 1875, through the energy and enterprise of Bernard Marks, who had been a miner, then a public school teacher in San Francisco, then a farmer on the tule lands of the San Joaquin and flooded out, and then burned out. Nothing like that experience, however, could kill the indomitable energy of this man. It would take paralysis or a stroke of lightning to do that! He inquired into the fruit business, he studied the question; incidentally he heard a man just then who had been to Southern France and Spain lecture on raisin culture. He had struck a lead, and had sagacity enough to follow it. He pursued that man, interviewed him and drew out of him ideas, that in their development have made the Fresno colonies what they are to-day. He came to San Francisco, found the men who owned the land and the water rights, made arrangements for himself only, but soon saw he could more profitably arrange for a colony, and accordingly changed his plans, and out of them came the Central colony, the first one organized. Six sections, 3,840 acres, were laid off and divided into 192 20-acre lots, and all sold in due time to men who went at once to work on them. The history of the troubles, the trials, exceeding great vexations and selfishness and greed of human nature that were developed in the growth of that first colony is yet to be written. But it is all over now; the clouds have gone; the grumbling and the mumbling have passed away; the last grip of the law has been loosened; the last disputed dollar been paid and all is serene. It is safe to say that no man with less energy, vitality of the nine lives quality, persistent push, persuasiveness and grip than Bernard Marks has would have carried out the plans to their completion. He did it, and to-day is sitting under his own vine and fig tree in the most realistic and literal sense, with the sunshine and halo of peace around his head. A delegation of visitors from the East recently called at his place and asked to see the *father* of the colony, expecting to see a white-haired patriarch appear, and were astonished when a figure with the bloom of a boy on his cheek and the lithe spring of a leopard bounded over the corral fence and stood modestly before them. They asked him where the old gentleman was, and believed they were being "sold" when he announced himself as the chief.

Mr. Marks has seven 20-acre lots here; 40 acres are set in vines, 15 acres in bearing, with 60 acres in alfalfa, from which he cuts four crops a year of from one to two tons to the acre. He has utilized this hay and grass in managing a dairy, keeping nine full-blooded Jersey cows and several half-breeds. Butter and cheese of the best quality are made here and sell readily at first-class prices in town. But gradually all the alfalfa fields will be changed into vineyards and fruit orchards, as these pay better than dairies. Peaches, apricots, plums, pears and raisins all pay, and even apples are being raised of good quality. All these fruits will pay $200 and upwards to the acre, while alfalfa will not. These fruits can be readily sold on the trees at a good profit, picked and packed by the parties who buy. Chinamen buy them to dry and pay cash. Eastern men from Chicago are also ready purchasers. What is true of Mr. Marks' land may be repeated of every one of the settlers in this colony, when care and labor are expended in a similar way.

Miss Austin's vineyard, in this colony, deserves especial mention, because it has been managed by herself from the first, and it has been a success, notwithstanding all the drawbacks that have annoyed and hindered the advance of the growth, want of water for the first years being the great evil. It looked at one time as if the enterprise must fail. It was hoping against hope, and nothing but an iron will determined to hold on and succeed could have conquered. Miss Austin is an educated lady who had managed other matters demanding judgment and skill before coming here, and she had weighed the matter of investment carefully; had studied the problem on all sides, so far as any light could then be had, and she came with her mind settled on staying—and she stayed, and is now reaping the reward of perseverance. She has the charge of 80 acres, for herself and three associates. It is nearly all in cultivation; 40 acres are in vines—one-half about—in bearing. She sent to market the last season about 800 boxes of as fine raisins as can be found made in this State, and, we think, but little inferior to the Mediterranean fruit, though she does not claim perfection, only that is one of the possibilities of this locality and of experience. She has, besides, several hundred apricot trees, which will give a good income next season; also 10 acres of alfalfa for her stock. She has also peaches, nectarines, and plums, in considerable variety; and her future is well assured, and her partners can confidently look forward to an early emancipation from the weariness of school-room cares and the capricious dictation of San Francisco Boards of Education. We heartily congratulate them all upon the near future of a blessed independence.

American Colony.

This colony lies west of the Washington Colony, and has five sections laid off into 20 acre lots. We believe it was put upon the market at $35 per acre, but has been recently sold and transferred to one man, who does not desire to sell in small lots, or less than 160 acres, but will sell such lots at perhaps a lower figure. Mr. C. A. Henry has been managing the sales. He has had much experience, having had the organizing and management of several colonies before, and is an energetic and efficient worker.

The Eggers Ranch.

Mr. Eggers' tract of 7,000 acres we did not see, but we learned from one who has visited it that he has 1,500 acres in grain. His land lies to the north and east of all the land we have described, toward the San Joaquin, and is a better grain land than that farther south and west. He has a large vineyard of nearly 500 acres, and soon will have a winery and distillery running, for, as we have said before, all these lands are coming into grapes rapidly.

Mr. Helm also has a large tract of nearly or quite 16,000 acres adjoining the above. It is adapted to grain or will produce good crops, but as vines pay better, it will eventually go into vineyards. He has a large acreage in alfalfa now, and a large flock of sheep.

The Kirby Vineyard.

Messrs. Kirby and Pearson, from the East, last winter made a purchase of five sections, 3,200 acres, lying east of the Washington colony. Mr. Pearson has since retired from it and Mr. Kirby, a young and energetic specimen of Chicago development, is carrying it on alone. He promises to make the model vineyard in this locality, and if energy and money can do it, he will fulfill his promise, for he has both. He has had 50 men or more at work and 100 horses, and they made things lively there, and have stirred up the sand by the square mile in a way that would astonish a Mexican hacienda. Mr. Pearson will return to Fresno, it is said, and invest $150,000 before long. Who will not say that Fresno has a future?

It will be seen that the controlling interest in the vicinity of Fresno is the wine product. The bulk of the capital being invested there so largely at this time is being devoted to this interest. All the large vineyards will have a wine cellar upon them, and the quantity of wine, in two or three years, produced here will be enormous. There are probably 30,000 acres already in the vicinity of Fresno alone that will soon be in vines and producing from five to eight tons to the acre. So that in the near future there will be grown 200,000 tons of good wine grapes annually in this one section. This amount of acreage, and the product of the vines, is constantly increasing, and the value of this industry in California in the future is beyond estimate. Two and a quarter million gallons of wine were shipped from this State two years ago, and nearly all of that was outside of Fresno county. Mr. Eisen's wine is the oldest here, and but little, comparatively, was ready for the market at that time. Many hundreds of acres are also being planted with apricots, a fruit that is to be one of the great products of this section soon. Raisins also are coming to be another of the large interests here, and one of the most profitable. Vines three years old will average 20 lbs. to the vine. Four-year-old vines in the Central colony gave, in some instances, an average of 50 lbs. last year. But $100 to $200 per acre, net profit, in raisin culture, is a safe estimate beyond any doubt. Many vineyards will go much higher if proper attention and the requisite intelligent care are exercised. The small farmer, then, who owns but 20 acres and does his own work, if he has but 10 acres in raisin grapes, is quite certain to secure a comfortable income.

Outside of Fresno City.

We have said nothing of the special localities about Fresno, Centerville, Selma, Wildflower, Kingsburg and other small towns. All have their peculiar attractions, in the way of vineyards, orchards or stock, but these are on a smaller scale than at Fresno. At Centerville, however, considerable interest is awakened and many are being attracted to that vicinity. It is near foothills and is the gateway into the great mountain region, where are the lumber and sawmills. Its climate and soil are peculiarly attractive, and nothing but money and the energy of Fresno are needed to make great developments here. Dr. Cogswell has invested largely here and organized a colony, and settlers are beginning to locate here on 20 acre lots. Our journalistic brother of the *Post*, Nat Caulsen, is interested in this colony, and will be the manager as soon as he can break away from his duties here and wean his soul from the fascination of gathering news for a daily paper. It will be like your humble servant's trial of tearing himself from the joys of the school-room and the Eden atmosphere that bathes it. This locality is said to be favorable to the orange and fig, there being little or no frost here, from which these fruits have suffered in Fresno. The party that went there on the recent excursion were much pleased with the place. Mathews & Co., 5½ Kearny street, real estate agents, propose to invest here, as do others from Stockton and other places.

Our old friend, Mr. Cottle, and his brother, of San Francisco, have a large flock of sheep—about 4,000, we think—on their range west of Wildflower. He states that it has been a bad year for lambs, and that some sheep owners have killed thousands of the young lambs as soon as born. This, to the unsophisticated mind, seems a cruel act, but it is undoubtedly better to save the mother than the lamb, and one has to die in a year like this, for the early season came close on a famine for feed. Mr. Dawes and Mr. Carruthers also have several thousand sheep each in this vicinity.

The Silk Interest.

Mrs. Stow, of the Social Science Sisterhood, went up with the excursionists, for the purpose of selecting a 10-acre lot, by gift, if possible, from some philanthropic, large-souled land owner who has the best future interests of California at heart, for the purpose of developing silk culture in the State. She will have the 10 acres planted with mulberry trees, establish a cocoonery, and find a market for the eggs and cocoons, if she can get the land free. We think this interest is bound to be a success in time in this State. The California Silk Culture Association is taking the lead, and is doing good work in getting this interest established, and the "Manual" on the subject, by Mr. W. B. Ewer, A. M., if well circulated, will give information that will stimulate many to engage in this pleasant and profitable employment.

Miscellaneous Products.

Other valuable crops besides raisins and wine can be raised in Fresno. Egyptian corn is a valuable crop and one of the most prolific of all. Common Indian corn, or maize, is also grown well, and the corn of the Cuzco variety, perhaps the corn that Pizzaro saw growing on the tablelands of the Incas, is now grown here. Sorghum can be made profitable—for stock at least, if not for sugar. Cotton has produced good results, but needs experience and care not now given to it. The expense of gathering and ginning has been too great. Oranges, lemons, bananas and olives also will grow well if properly protected. Sweet potatoes, as well as the common variety, are a sure crop. Peanuts are at home in this soil. Every kind of vegetable grows here in luxuriance, as well as every species of berry. There has not been, as yet, enough of strawberries, blackberries, raspberries, currants, etc., to supply the market even at Fresno. Blackberries grow to mammoth size, comparatively, and often bear the first year, from rooted vines. Nineteen selected berries have been known to weigh a full avoirdupois pound. The mulberry tree grows here to perfection, and the silk interest can be extended indefinitely as soon as any market for eggs or cocoons can be certain and people can be induced to enter upon the work. Honey can be produced in unlimited quantities; thousands of acres of wild flowers are at the service of as many bees as can be placed here. They have a charter right, unassessable, to these acres and only need encouragement. There may be many sections of our State that promise as well as this; we cannot say, positively, but we have faith in Fresno county and in her great future.

THE road to Yosemite by way of Big Oak Flat is open, and considerable travel is passing over it.

FRESNO COUNTY BANK.

Capital Stock, $100,000.

JNO. W. HINDS, President. WM. V. HAY, Secretary and Cashier.

DIRECTORS:
Jno. W. Hinds, Wm. V. Hay, B. K. Hay,
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CAPITAL STOCK, - - - $100,000.

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DIRECTORS:
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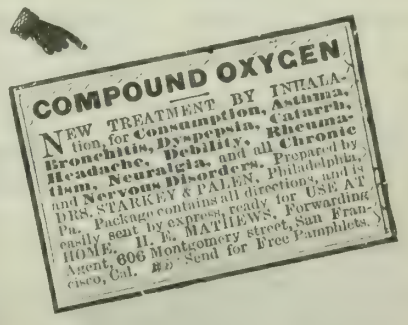

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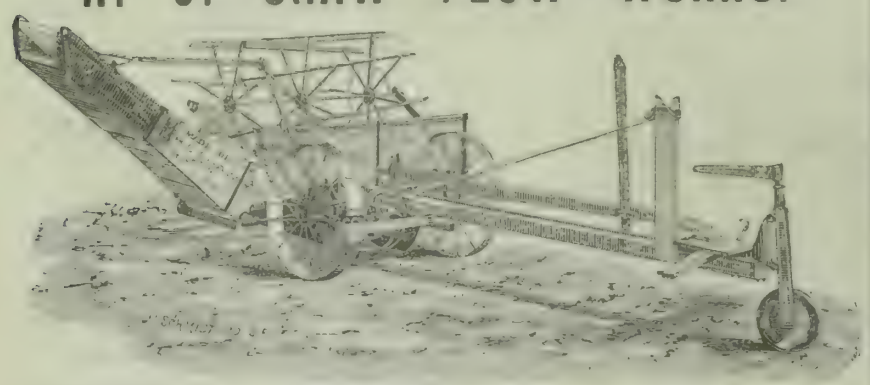

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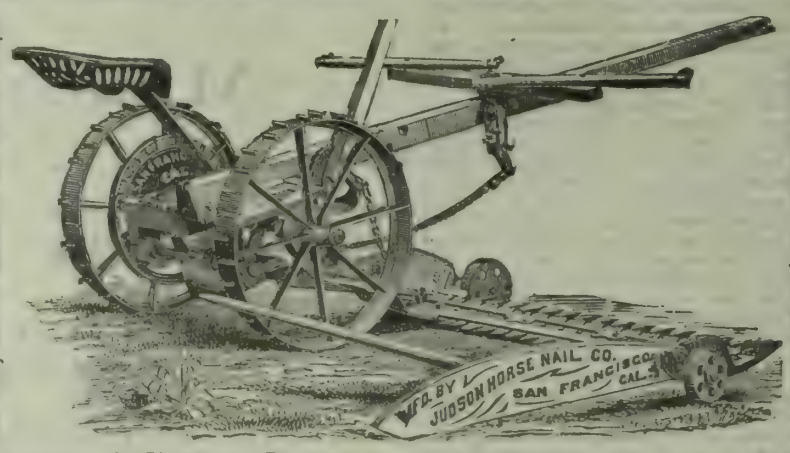

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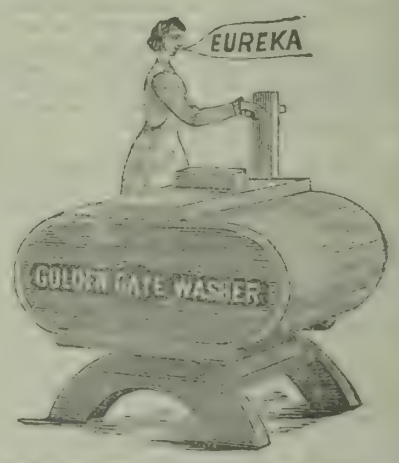

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A collection of new hymns and tunes, carefully selected from a large quantity of manuscripts, of which four out of every five were rejected, only the very best being retained. *Price, 35 Cents.*

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Will protect Plants and Vines from ALL INSECTS. 1 pound of this powder is enough for an ordinary garden, 4 pounds for an acre of cabbage. Sold by dealers generally at 25c for 1 lb., 50c for 2½ lbs., or sent to any address prepaid on receipt of 45c for 1 lb., 90c for 2½ lbs.

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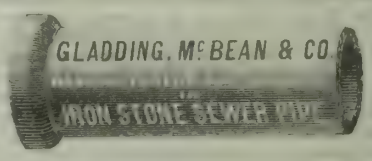

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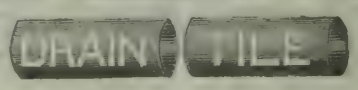

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75 LOVELY FRENCH CHROMO CARDS with name on 10 cents. Chas. Hay, New Haven, Conn.

Notes on Stockton Industries.

A Lively Town in a Productive Region.

The traveller, on entering Stockton, is struck with the display of agricultural implements which covers acres of ground, some in warehouses and sheds and others in the open field and by the side of roadway and street. In every part of the city you may see the various industries and the hum and bustle of manufacturing. In such a hive of industry it is difficult for the scribe to present full accounts, but he must catch such notes as came to mind in passing through the town.

Sperry's Mills.

This grand flouring establishment is rising from its ashes with gratifying rapidity. The fire which was regarded as such a calamity at the time will be in reality the birth of new success for the Sperry mills. The rebuilding is on a grand scale, and increased capacity and new facilities will be the result.

Bailey, Badgley & Co.

The firm of Bailey, Badgley & Co. have removed to the new brick building corner of Main and California, Stockton, and display a fine line of agricultural implements of all kinds, and are reaper and twine binder, Minnesota Chief the local agents for the McCormick mower and threshers and engines, as also "La Belle" wagons, of Fond Du Lac, Wisconsin, which were made especially for California, also the J. I. Case and Wood headers.

H. P. Nichols

Is driving an active trade this year with his Chicago screw pulverizer. The pulverizer is designed for rapid and economical preparation of the soil for seeding. In the estimation of those who have used the machine, it has no equal for rapid and thorough pulverization of tule soils, and farmers assert that tule land can be prepared for seed by this machine which can be worked by no other implement. Another of Mr. Nichols' specialties is the Chicago scraper and ditcher, of which we have made favorable comment before in these columns. Actual experiments made with it by Mr. Ferris, of Roberts' island, in levee building, demonstrated its capacity for work to be superior to any scraper of its size.

H. C. Shaw

Continues in his leading position as a dealer in agricultural implements of every description. His stock, for variety and extent, is a study for anyone interested in the application of mechanics to agriculture. His reputation throughout the State, brings him trade in a wide range of implements and machines to suit various needs, and it will be hard to call for any useful tool which he cannot supply. Mr. Shaw is driving a lively trade in the Randolph header, for which he is the sole agent in California. The Randolph is in large demand because of its satisfactory work, etc.

Matteson & Williamson

Have a record of 17 years in the manufacture and sale of agricultural machinery. They have sole rights of several famous implements. The Stockton Chief header is widely known for effective work and durability. These machines have been in use 12 years and the number manufactured by the firm is annually increasing. Last year the firm manufactured 53 and this season they make 75, most of which have been engaged. Another arrangement made by Matteson & Williamson is the derrick and forks for unloading and stacking, combined with nets for unloading the header beds, which enable one man and two horses to clear the header load in a twinkling. The improved Summer-fallower, or Horse Hoe, is a late invention of this firm, and manufactured extensively. It is for hoeing the land, destroying the weeds, and pulverizing the soil without turning it. The frame is V-shaped, in which are inserted four, six, or eight teeth, according to the size of the hoe. These machines run on three wheels, which may be taken from the gang plows for that purpose. The difference in favor of horse-power between the hoe and gang plow, is as four to six, the difference being in favor of the former.

Caine's Agricultural Works.

The Globe foundry, owned by John Caine, is a large and lively manufacturing concern. It occupies a large two-story brick building filled with excellent machinery and other appliances. Mr. Caine's trade, both in Eastern implements and those of his own manufacture, is extensive and his establishment is to be enlarged. Of tools exclusively manufactured at the Globe foundry we may name the Stockton Chief gang plow, a style which is the result of 19 years' experience in improvement and is about perfection. Mr. Caine has also the exclusive rights in the Baxter header. What he does not manufacture he has as agent, and he can furnish complete outfits for all classes of farm work.

Thomas Powell.

Thomas Powell, at the H. C. Shaw Plow Works, is pushing along the manufacture and introduction of his well-known "electric elevator," which is famous for quick unloading of hay, straw, or header wagons, either for stacking or delivering to the thresher. Mr. Powell has introduced many improvements in his elevator and all should examine his latest patterns.

Austin Brothers.

For general hardware the Austin Brothers' establishment is headquarters. The extent and variety of stock are notable and their business assumes large proportions.

Druggists' Preparations.

John R. Williams has, for a quarter of a century, been advancing in the drug trade and in manufacturing druggists' preparations and remedies. We have often spoken well of his "Gem Ague Cure," because we have heard much in praise of its efficacy. His other goods, as the "Balsamic Cream of Roses," have high standing.

"Burnham's Abietine" is still made by W. M. Hickman, druggist. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is announced as a valuable remedy for both external and internal use, and we have heard it well spoken of.

Yosemite House.

The setting in of the "tourist season" is bringing hosts of guests to the Yosemite house, where all are treated with courtesy and well provided for.

C. E. Williams & Co.

C. E. Williams & Co. are preparing for an active campaign with their squirrel poison, which has been found a dead shot for the vermin. Their carbolic sheep wash has a State reputation, and is now being sent to Texas and other outside sheep regions. C. E. Williams & Co. do a good business in Angora goat skins, tanned with the hair on. The skins make very handsome rugs and mats, and are largely used in house decoration, both in city and country.

H. H. Horse Medicine.

H. H. Moore & Son are finding increased sale for their famous H. H. Horse Medicine. It has been found indispensable in the stable, and the result is a growing popularity and patronage. The demand is extending into new States, and shipments are now being made as far as New Mexico.

Ruhl's Pumps.

F. A. Ruhl is sending out great numbers of his well-known pumps and pump valves. His force valve is taking the lead for deep wells, and the suction valve for raising water for irrigating purposes is generally used throughout the interior of the State. We have seen many testimonials from farmers attesting its satisfactory work.

Fresno Business Notes.

The Fresno County bank is the oldest bank now in operation here, but has been doing business not quite a year. It has a capital of about $100,000. Mr. Hinds, the President, is interested in the growth of Fresno, and has invested in land for a vineyard of 320 acres, called the Homeside farms. Mr. Hays, cashier, has no vineyard interests here, but, with his brother, brought considerable capital into the place. The bank is doing a good business.

The Farmers' bank was organized in January, 1882, and opened for business in March. Some of the leading stockholders had been doing a private banking business, but after the other bank opened its doors, it was thought best to obtain a charter, and increase in population will probably warrant a business to justify the enterpise. Mr. Leach, the President, has business interests apart from the bank. Mr. Phillips, the cashier, is a shrewd business man, and although they have been opened but a few months, are doing a fair business.

We found one old acquaintance from San Jose, Mr. J. M. Braly, located here. It speaks well for Fresno, that after leaving that "garden of the State" and traveling through Arizona and New Mexico, he should settle down here and start his vineyard. He also superintends a quarter-section vineyard for Prof. J. H. Braly, of the State Normal school.

We found also another San Jose resident located here, Mr. J. M. Cory. He has started a 20-acre vineyard; and, while it is growing to goodly proportions, sufficient to maintain him handsomely, he is insuring the lives of all that will listen and be convinced by his sound arguments. We are convinced that both these San Jose people have made a good move.

Mr. W. R. Robertson, whose card is in this issue of the PRESS, is one of the live men in this live little town. He carries on a large business in carriage making, general blacksmithing; and, not satisfied with this, is about putting up a foundry. This will make the largest business of the kind in the county, we believe. Mr. Robertson is a hard working man, is popular and deserves his success.

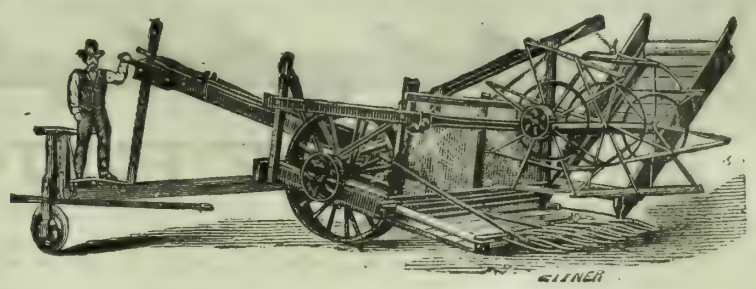
Mr. C. A. Henry has been the manager of several colonies here, all of which he has carried to a successful completion. The American colony was his last effort. He is now doing a prosperous business in San Francisco.

Mr. Wolters has a large interest in land here, but not in vineyard. He is in business in San Francisco, and Mr. W. F. Plate, his agent here, is very active in managing the interests of his ranch. Parties desiring to locate here will find Mr. Plate well posted on land matters and water rights.

Mr. M. J. Church, the veteran "irrigation man," whom neither threats nor persuasion could prevent his scheme of supplying water to Fresno, is the proprietor of the Champion Mills, and has notified the public that so long as it sustains him he shall run this mill in the interest of the people directly, without the aid of "middle men." People can buy here by weight and not by sack, and see with their own eyes just what they get, and can have their grists ground at the lowest rates. Mr. Church means business in this, as he did in the matter of water, and people have learned to know that he will do what he says he will.

RICHARDS' IMPROVED HEADER.

"The Stockton Chief!"



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The Farmers call it the "BOSS HEADER OF CALIFORNIA." Built especially for California Trade.

THE OPERATOR CAN STOP THE DRAPER AT WILL. CUT 10 FT. TO 16 FT.

IRON FOUNDERS AND MANUFACTURERS OF

FARMING IMPLEMENTS!

DERRICKS AND FORKS,

Plows, Harrows, Cultivators, Steel Road Scrapers, Etc.

Call at the old Stand or Send for Catalogue and Price List, Liberal Discounts to the trade.

Orders for the "STOCKTON CHIEF" HEADER

Should be forwarded early, as the demand is so great that it is difficult to fill late orders.

MATTESON & WILLIAMSON,

Corner of Main and California S's., Stockton, California.

THOS. POWELL'S PATENT ELECTRIC ELEVATOR.

THE ONLY

Perfect Stacker

NOW IN USE.

Sales are Increasing.

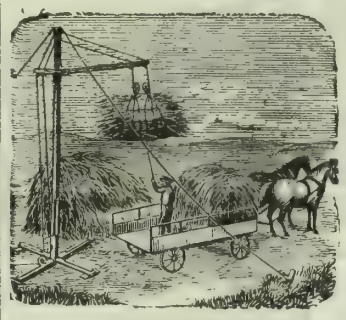
Parties wishing them should Send in their Orders Early.

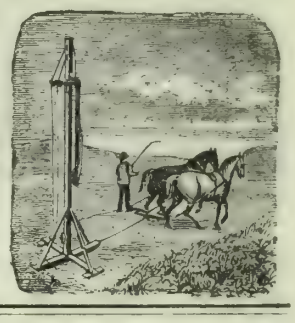
Address,

THOS. POWELL,

At H. C. Shaw's, 201 and 203 El Dorado St.,

Stockton, Cal.





Summer Resorts.

SODA BAY HOTEL,

A NEW AND BEAUTIFUL

SUMMER RESORT.

SODA BAY, on Clear Lake, Lake county, Cal., the favorite lacustrine resort, is justly regarded as combining greater advantages and affording more attractive and interesting natural features than any other watering place in the State. The climate, as a relief from the severe winds of the coast, is invaluable for the health of children and delicate persons—indeed, for all requiring the change demanded annually by the residents of San Francisco While entirely free from the fog, the wind and the chill of the sea coast, the climate is greatly modified from the heat of the interior by the proximity of the beautiful lake, upon the margin of which, for a distance of two miles the grounds are extended. A splendid grove of live-oak, pine and manzanita trees, of great age and gigantic growth, affords the most delightful shade. A beautiful bathing beach offers the choicest facilities for aquatic pastime, far from the danger of the sea surf or chill.

The Great Spring—Indian name, OMAR-ACH-HAH-BEE, emitting not less than a million gallons daily, of delicious effervescing soda water, is one of the most interesting natural curiosities of California, and the bath in its exhilarating fountain has an electrical effect that is as delightful as it is beautiful. Extraordinary solfataric action au around the shore of the bay, due to the presence of innumerable mineral springs and chemical action upon a vastly extended scale, has given the place the name by which it is known—Soda Bay.

Daily excursions are made to Borax Lake, Sulphur Banks, and other points of interest. A new trail leads to the summit of Uncle Sam, 4,400 ft. above the sea.

Ample provisions are made for the entertainment of the patrons of this popular resort. The Hotel and the cottages are furnished with comfort and taste. Among the diversions of the place are boating and sailing—yacht and steamer, bowling, billiards, croquet, equestrian exercise, fishing and hunting, and a beautiful pavilion for music and dancing; in short, nothing is lacking for the enjoyment of those who seek rest and recuperation or interesting and healthful recreation beneath the shady oaks and by the ever beautiful lake, in a climate which, for health and for comfort, is acknowledged to be unsurpassed, if, indeed, equaled in the world. Billiards, croquet, ten-pins, and baths, free.

To reach Soda Bay from San Francisco, go by train to Calistoga or Cloverdale, thence by stage to Kelseyville, at which place a carriage from the hotel will meet passengers. Through time, 11 hours For further information address, A. K. GREGG, Uncle Sam P. O., Lake Co., Cal.

Pacific Congress SPRINGS.

This Celebrated Resort for PLEASURE and HEALTH will be opened for the reception of guests

On and after April 15th.

Stage connections made at LOS GATOS with MORNING and AFTERNOON trains of the Narrow-gauge Railroad.

THROUGH TICKETS

Can be purchased at FERRY LANDING, foot of Market street, San Francisco. PRICE, $2.75

ROOMS CAN BE SECURED

And arrangements made at any time by addressing

LEWIS A. SAGE,

Saratoga, Cal. Proprietor.

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SAN RAFAEL.

This Well Known and Favorite Hotel is **NOW OPEN** for the reception of guests.

NEWLY FURNISHED.

First-class in every respect. TABLE supplied with the

VERY BEST THE MARKET AFFORDS.

The Long Experience of the Proprietor enables him to make the

TAMALPAIS

The Most Desirable Country House on the Coast. The Salubrity of the Climate and

BEAUTY OF THE SCENERY

Is World-renowned.

W. G. GRAHAM, Proprietor.

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Situated 16 Miles Northeast of Clear Lake, in Lake County,

Forty miles West of Williams, Colusa county, on the main traveled road from Colusa to Mendocino.

Three Different Routes to the Springs,

One via WILLIAMS, one via CLOVERDALE, LAKEPORT and UPPER LAKE, one via CALISTOGA and LOWER LAKE, and all connecting with the train

LEAVING SAN FRANCISCO AT 8 A. M.

Fare will not exceed TWELVE Dollars either way. Daily Mail via LAKEPORT, Semi-weekly mail via WILLIAMS. Post Office, Express Office and Telegraph Office here all the year through.

C. R. CLARKE, J. C. CAMGLER, Proprietors.

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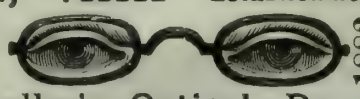
LAKE COUNTY, CAL.

The Springs are now open for the reception of guests. Stages leave Calistoga daily, on arrival of morning trains from San Francisco and Sacramento. Stage Fare Reduced to $3 RICHARD WILLIAMS, Proprietor.

Only "PEBBLE" Establishment.

1863  1882

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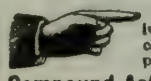

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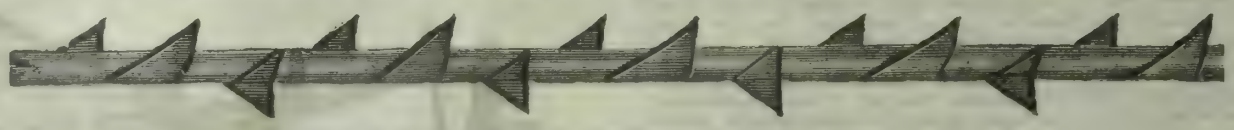

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The Handsomest, Stiffest, and Most Durable. No Rust. No Decay. Secure Against Fire, Flood and Wind.

IT IS THE ONLY BARB WIRE that will prevent small animals, such as rabbits, hares, pigs, dogs, cats, etc., from passing through, under or over it, the barbs are so near each other.

The Barbs being triangular-shaped, like the teeth of a saw, and close together, there is no *cruelty to animals*, as they cannot pierce the hide; they only prick, which is all that is ever necessary as *no animal will go near a Barb Fence twice.*

AS THE WIRE IS NOT BENT OR TWISTED, its tensile strength is much greater than the Wire in all other Barb Wire Fences, as they are all made of twisted or bent Wire.

HEAT AND COLD CANNOT AFFECT THE AMERICAN BARB FENCE, as it can be allowed to sag when put up, enough to cover contraction and expansion, *because it is a continuous Barb, and cannot slip through the staples one inch.* Each panel of Fence takes care of itself.

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THE PAINTED WEIGHS A POUND TO THE ROD, so that the purchaser knows exactly how much fencing he is getting. Galvanized weighs slightly more.

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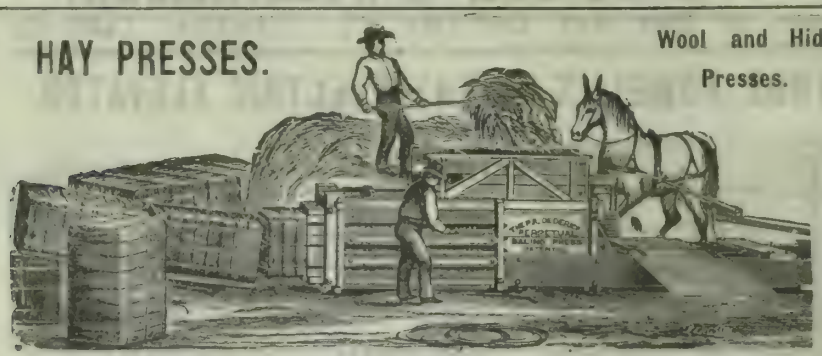

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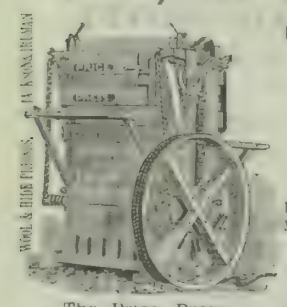

The Price Press.

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Price Hay Presses.
Improved Eagle Presses,
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We make and carry in stock the latest and most improved Presses for Baling Hay, Hides and Wool. Send us your address on a postal card, and we will mail you our new catalogue, giving a full description of all the goods we make Address

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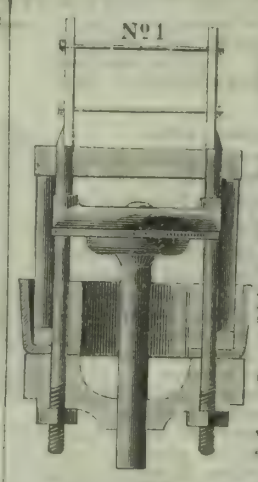

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F. A. RUHL, Patentee.

These Pumps are manufactured exclusively by F. A. RUHL, made of the best material and warranted by us to give entire satisfaction Or

DEEP WELL PUMPS

We manufacture the following sizes 3, 4, 5, 6 and 7 inches in diameter, and we guarantee them to raise water 200 feet and over

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Sizes 3 and 4 inches in diameter These Pumps are intended to go into narrow wells, and raise water about 50 feet and they will do the work where a common Douglas Pump fails

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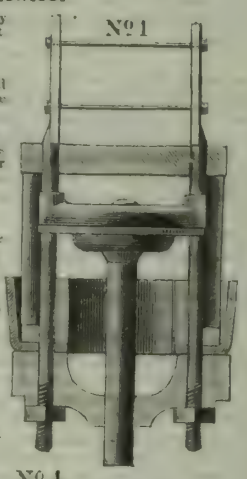
Sizes 3, 4, 5, 6, 7, 8 and 10 in diameter These Pumps are

Adapted for Shallow Wells,

Where water can be had from 15 to 25 feet They are a success to irrigate from 1 to 25 acres of land They also make the the best



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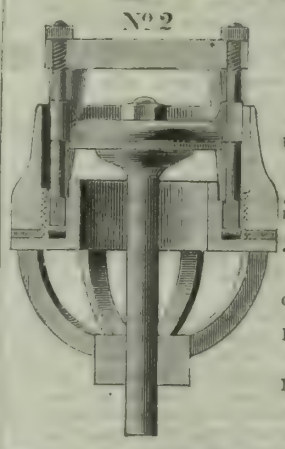

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To raise water to ANY DESIRED HIGHT.

And they are by far the best

Over force Pump.

As there is no packing or priming required.

Jobbing and Roofing

Of every kind done satisfactorily, and at

Reasonable Rates

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No. 183 Hunter St.,
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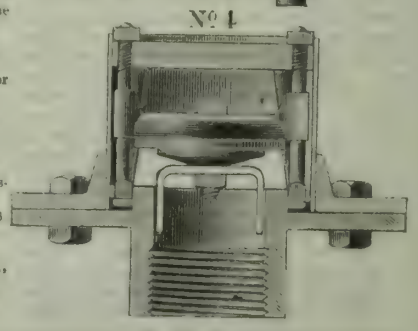

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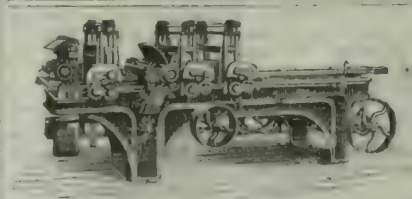

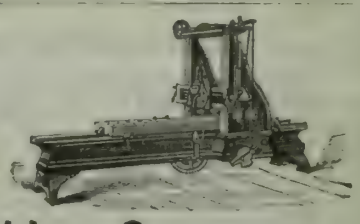

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TOULOUSE GEESE at $15 per pair; $20 per trio; Eggs, $8 per dozen. Bronze Turkeys, $10 per pair; Eggs, $4 per dozen. Address T. D. Morris, Sonoma, Cal., breeder and importer of all kinds of thoroughbred poultry

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No Colony in the State has now so promising a future, and none offer so great advantages for profitable investment. The extensive improvements of the past year will be more than doubled during the coming summer. In addition to the usual sales, lands are offered for planting in vineyards onshares. Here are grand opportunities for industrious men, as well as for capitalists.

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25 Gold, Crystal, Lace, Perfumed & Chromo Cards, name in gold and jet, 10c. Clinton Bros., Clintonville, Co

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Importer and Breeder of all the best known and most profitable varieties of Land and Water Fowls.

Brahmas, Cochins, Houdans, Langshans, Leghorns, Polish Hamburgs, Bronze Turkeys,

And the new fowl, AMERICAN SEBRIGHT or EUREKA.

AGENT FOR THE PACIFIC INCUBATOR,

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No. 1,	Capacity,	550	Eggs,	Price,	$90.
No. 2,	"	250	"	"	65
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Guaranteed to hatch NINETY PER CENT. of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season. For further particulars send stamp for illustrated circular to GEO. B. BAYLEY, Box 1771, San Francisco.

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My Birds are raised on large farms, where they have unlimited range, giving them a

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Which is very desirable in any Breeding Stock.

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Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

SCAB OF THE SHEEP.

The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

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B. F. WELLINGTON, Prop'r.

Also, Importer and Dealer in Seeds.

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I have for sale at my ranch, near Oroville, Butte county,

12 Young Short Horn Bulls,

From one to two years old. Price from $100 to $200 each.

ALSO

50 Short Horn Cows and Heifers.

All these cattle are red Durham—all thoroughbred. They are offered at private sale to those wishing to secure good stock.

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Duroc, or Red Hogs.

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Langshans, Brahmas, Cochins, Leghorns, Houdans, Plymouth Rocks, W. F. Black Spanish, Guinea Fowls. Aylesbury, Rouen and Pekin Ducks. Bronze and White Holland Turkeys. Peacocks, Etc. Also, Eggs for Hatching.

Dish-Faced Berkshire Pigs, Poland China Pigs, Jersey Cattle, etc.

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Stock or Eggs for Hatching guaranteed true to name, and to arrive safely. For further information please write, enclosing stamp. Circular and price list sent on application. Address

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We have for sale at our farm at Mountain View, thoroughbred

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From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880. Pigs from Imported Boar and Sow, $25 each. From Imported Boar and Thoroughbred Sow, $10 to $20. Our Imported Pigs are as nice Pigs as there are in the State. Address JACKSON & TRUMAN, S. F.

LITTLE'S SHEEP DIP.

Price Reduced

TO $1.25 PER GALLON.

Twenty gallons of fluid mixed with cold water will make 1,200 gallons Dip.

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Hooper's South End Grain Warehouses,

Cor. Japan and Townsend Sts., S. F.

First-class Fire-proof Brick Building Capacity, 10,000 tons. Goods taken from the Dock and the Cars of the C. P. R. R. and S. P. R. R. free of charge. Storage at Current Rates. Advances and Insurance effected.

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COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

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Cashier and Manager.

San Francisco, Jan. 15, 1882.

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FARMING LAND

For sale in large or small tracts, on easy terms, in the best parts of the State

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Good Crops Every Season Without Irrigation.

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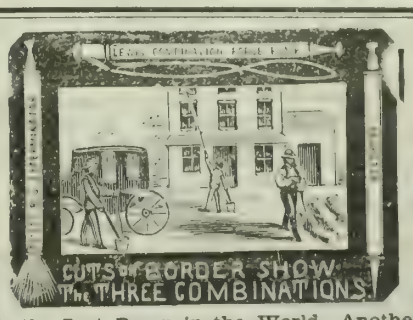

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BABCOCK & CO.,

40 Merchants' Exchange San Francisco, Cal.

S. F. Market Report.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, May 10, 1882.

Trade is improving and values advancing for nearly all staple articles. Grain is noticeably firm and higher, because of the surety of a moderate crop owing to the north winds and slight spring rains. The advantage will be this year on the side of the seller, and happy will be he who has much to sell. The rise is owing to local conditions, for foreign advices are only fair. The latest is as follows:

LIVERPOOL, May 9.—Wheat: California spot lots are slow, at 10s@10s 4d. Cargo lots are 47s for just shipped, 50s for nearly due and off coast. Cargoes are very inactive.

Eastern Grain and Provision Markets.

NEW YORK, May 6.—Wheat is dull and easier, with very little demand for export. Barley is nominal. Pork is firm and quiet at $18.75 for new. Lard is about steady and dull.

Eastern Wool Markets.

BOSTON, May 9.—There has been no change in Wool. The demand is steady from manufacturers, and holders are disposed to close up old stock as fast as possible at current rates. Sales of Ohio and Pennsylvania are noted at 41@43c for XX, and Michigan and Wisconsin fleeces at 40@41½c. Desirable X fleeces are very scarce, and good lots, Ohio and Michigan, are difficult to find. In combing and delaine fleeces there are very little changes. Sales of fine delaine and fine combing range from 43@48c. Kentucky combing is dull and prices are nominal. In unwashed sales have been principally at 25@32c for fine and medium grades. California is quoted at 14½@30c for Fall and Spring. Pulled Wools are firm at 45@48c for choice Maine and Eastern supers, and 25@42c for common and good. Australia, Cape and Montevideo are steady, but no sales of importance have occurred for a few days. Carpet Wools have been quiet.

NEW YORK, May 6.—Wool is very quiet but firmer, and values are sustained. Sales of California embrace 147,000 lbs of Spring and 25 bales, part at 18@27½c; 7,000 bales Fall, part at 14@15c. For Fur and Skins the demand develops slowly, and buyers are still insisting upon a close and careful selection.

New York Dried Fruit Markets.

NEW YORK, May 6. Foreign Fruits are quiet, except for Citron, which is now held at 14c.

Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive according to the latest advices:

In port.	1882.	1881
Engaged, tons	57,100	33,300
Disengaged, tons	16,900	8,900
To arrive, tons	235,900	277,900
Total supply, tons	309,900	320,100
Decrease for 1882, tons		10,200

The amount of tonnage under engagement yesterday to load Wheat was 52,600 tons, against 27,900 tons for the corresponding date last year, showing an increase of 24,700 tons. There were 41 vessels under engagement yesterday morning at this port to load Wheat, 5 of which were chartered prior to arrival. The engaged and disengaged tonnage in port has a Wheat-carrying capacity for 111,900 short tons, against a capacity for 63,300 tons on the corresponding date last year. The German ship *Charles Dickens*, 1,329 tons, has been rechartered for Wheat to Cork, U. K., at £3. The ship *Great Admiral* gets £2 17s 6d to a direct port, £3 to Cork, U. K., or £3 5s to the continent. While grain freights are not quotable lower the market has a weak tone, more especially since the parching north wind set in to stiffen up the views of Wheat holders. For wooden vessels to Cork, U. K, £3 must now be considered a very full rate.

BAGS—Bags are weakened owing to the change of a moderate consumption this year. No sales on call. For local make, July 1st, $9 05 was bid, $9.10 asked. Cal. cutts, spot, are nominal

BARLEY—Barley is advancing and sellers are firm. There is a prospect that those who sold to deliver in June, at $1.45, may get pinched, as it is now worth $1.72 and June is near. There is but little call for brewing and Chevalier, as feed attracts the attention of operators. Sales on call yesterday were: 16 tons No. 1 feed, spot, $1.-72½; 100 tons No 2 do, September, $1.25, and 100 tons do, seller 1882, $1.20. Bids and offers were: No. 2 brewing, September, $1.30 bid; No. 1 feed, May, $1.72½ asked; July, $1.30 bid, $1.35 asked; August, $1.27½ bid, $1 32½ asked; September, $1.25 bid, $1 35 asked; October, $1.22½ bid; No. 2 feed, July, $1.37½ asked; August, $1 15 bid; October, $1.20 bid; No. 1 Chevalier, May, $1.72½ asked; No. 2 Chevalier, May, $1.65 bid, $1.70 asked; No. 3 Chevalier, October, $1.35 asked. Outside sales of 280 tons No. 1 brewing at $1.85.

BEANS—Beans are quiet and unchanged.

CORN—Corn is a shade higher than last week, but the trade is small and fluctuating. On call bids and offers were: No. 2 large Yellow, spot, $1 70 bid, $1.72½ asked; Nebraska, $1.70 bid, $1.72½ asked; seller 1882, $1.60 asked.

DAIRY PRODUCE—Butter has advanced to 29½c for choice fancy. There is much being packed. The chance for a high season's average is better than it has been for some time. Cheese is still down and neglected.

EGGS—Eggs are still improving, the rate being now 26@27c ⅌ doz.

FEED—The gamble in Bran is still full of excitement. Many dealers sold short on what is now a rising market. Yesterday 500 tons, June, was bought in at $20 by the caller to cover margins. Besides this, 20 tons, spot, sold at $16. Bids and offers were: June, $16.25 bid, $17 50 asked; July, $14 bid, $14.50 asked; August, $13 bid; September, $13 25 bid; October, $13 25; November, $14 bid; seller 1882, $13 bid, $13.50 asked; December, $14 bid, $14.75 asked. The sale to the caller of 500 tons, June, at $20, was above the market, and must not be considered as a quotation, as the lot was so large that but few dealers cared to undertake to deliver it in one parcel.

FRUIT—Oranges are high and in demand. Cherries range from 8c to 30c ⅌ lb, many being poor and neglected. Gooseberries are just in, and some English go as high as 20c ⅌ lb. Robert Ashburner, the well-known breeder and dairyman, brought in a box of Gooseberries from his ranch in San Mateo county on Tuesday. If he was not so wedded to his cows he could make a fortune in Gooseberries. Strawberries are now arriving more freely, and sold at $8@$12 ⅌ chest.

FRESH MEAT—Beef rates are still maintained. Spring Lamb is weakened a little. Pork has gone on upward and is now higher than for a long time.

HOPS—Hops are going quietly at former rates.

OATS—Many Oats are arriving from the north, but holders are firm and rates are maintained. On call there were few bids and no offerings, as follows: No. 1, July, $1.57½ bid; September, $1.40 bid; No. 2, July, $1.52½ bid; October, $1.32½ bid.

ONIONS—New Onions are in and sell at $1.30@1.50 per ctl. Old Onions are very poor and sell low.

POTATOES—Old Potatoes are getting whittled down small, and but few are in first hands. New are arriving freely and in good condition. The rate is a shade lower this week, 3@4c per lb.

POULTRY AND GAME—There is no change in Birds. Snipe are now out. Hare and Rabbits are lower.

PROVISIONS—Prices are maintained at the late advance and the market is firm.

RYE—Rye is light and little doing, except in futures, sales being 100 tons No. 2, September, and 100 tons do, October, $1 52½. For No. 1 September $1 50 was bid, and for No. 2, August, $1.36½ bid.

VEGETABLES—The list is now quite full. String Beans and Summer Squash are in this week. Peas and Rhubarb are much cheaper; the former are arriving in large quantities. Tomatoes are going at 15@20c per lb.

WHEAT—Holders are firm, and rates are about 2½c higher. No. 1 changed hands at $1.67½. Bids and offers were: Extra choice, September, $1.68⅞ bid; No. 1 White, August, $1.70 bid; No. 2 White, September, $1.60 bid; No. 1 Amber, September, $1.57½ bid; Extra choice Sonora, August and September, $1 62½ bid; October, $1.65 bid; No. 1 Sonora, Port Costa, August, $1.65 bid, $1.67½ asked; September, $1.65 bid; No. 2 Sonora, September, $1.57½ bid.

WOOL—There is a fair trade and the rate for choice Wool is rising. Quotations may be found in our list.

Domestic Produce.

WHOLESALE.

WEDNESDAY M., May 10, 1882.

BEANS & PEAS.		Soft shell	14 @ 15
Bayo, ctl	3 00 @3 25	Brazil	10 @ 11
Butter	3 75 @4 25	Pecans	13 @ 15
Castor	3 50 @4 00	Peanuts	6½@ 7
Pea	4 50 @4 60	Filberts	14 @ 15
Red	2 50 @3 00	**ONIONS.**	
Pink	2 50 @3 00	Red	— @ —
Large White	3 00 @3 25	Silverskin	1 25 @1 75
Small White	4 50 @4 60	do, new	1 30 @1 50
Lima	4 00 @4 50	Oregon	— @ —
Field Peas, b'lk eyel	5 @1 75	**POTATOES.**	
do, green	2 00 @2 25	New, lb	3 @ 4
BROOM CORN.		Early Rose	2 20 @2 30
Southern	3 @ 3½	Petaluma, ctl	2 70 @2 75
Northern	4 @ 6	Tomales	- @ —
CHICCORY.		Humboldt	2 70 @2 75
California	4 @ 4½	" Kidney	— @
German	6½@ 7	" Peachblow	@
DAIRY PRODUCE, ETC.		Jersey Blue	@ —
BUTTER.		Cuffey Cove	— @ —
Cal Fresh Roll, lb	28 @ 29	River, red	1 90 @2 00
do Fancy Brands	@ 29½	Chile	1 50 @1 60
Pickle Roll	@ -	do, Oregon	1 90 @2 10
Firkin, new	27 @ 28	Oregon Peerless	1 90 @2 10
Eastern	18 @ 20	Salt Lake	2 50 @2 75
New York	— @ —	Sweet	1 00 @1 25
CHEESE.		**POULTRY & GAME.**	
Cheese, Cal., lb	12 @ 13	Hens, doz	5 50 @ 7 00
EGGS.		Roosters	5 00 @10 00
Cal. Fresh, doz	26 @ 27	Broilers	5 00 @ 8 00
Ducks	— @ —	Ducks, tame, doz	6 50 @ 7 50
Oregon	— @ —	Geese, pair	1 25 @1 50
Eastern, by expr'ss	@ -	do, young	2 50 @3 00
Pickled here	— @ —	Wild Gray, doz.	@3 00
Utah	— @ —	White do	50 @1 00
FEED.		Turkeys	14 @ 16
Bran, ton	13 50 @14 50	do, Dressed	— @ —
Corn Meal	36 00 @37 00	Turkey Feathers, tail and wing, lb	10 @ 20
Hay	10 00 @15 00	Snipe, Eng	1 75 @2 00
Middlings	@20 00	do. Common	50 @ 75
Oil Cake Meal	— @27 50	Quail, doz	75 @ 80
Straw, bale	— 62½@— 70	Rabbits	1 00 @1 25
FLOUR.		Hare	1 50 @1 75
Extra, City Mills	5 25 @5 50	Venison	5 @ 7
do, Co'ntry Mills	4 75 @5 00	**PROVISIONS.**	
do, Oregon	4 75 @5 12½	Cal. Bacon, extra clear, lb	14 @ 14½
do, Walla Walla	4 50 @5 00	Medium	14 @ 14½
Superfine	3 50 @4 25	Light	15 @ 15½
FRESH MEAT.		Lard	13 @ 16
Beef, 1st quaL'y, lb	8½@ 9	Cal. Smoked Beef	11½@ 12½
Second	5 @ 7	Shoulders	9½@ 10½
Third	4 @ 4½	Hams, Cal	13½@ 14
Mutton	4 @ 5½	do, Eastern	16 @ 17
Spring Lamb	6 @ 8	**SEEDS.**	
Pork, undressed	6½@ 7½	Alfalfa	14 @ 16
Dressed	9½@ 10	do Chile	— @ —
Veal	7½@ 8	Canary	3½@ 4
Milk Calves	7½@ 8	Clover, Red	14 @ 15
do, choice	— @ 10	White	45 @ 50
GRAIN, ETC.		Cotton	— @ 20
Barley, feed, ctl	1 70 @1 72½	Flaxseed	2½@ 3
do, Brewing	1 75 @1 85	Hemp	— @ 5
Chevalier	1 60 @1 67½	Italian Rye Grass	25 @ —
Buckwheat	1 50 @1 75	Perennial	25 @ —
Corn, White	— @ —	Millet, German	10 @ 12
Yellow	1 72½@1 75	do, Common	7 @ 10
Small Round	— @1 75	Mustard, White	1½@ 2
Oats	1 30 @1 67½	Brown	2½@ 3
Milling	2 00 @2 02½	Rape	2½@ 2½
Rye	2 05 @2 20	Ky Blue Grass	20 @ 25
Wheat, No. 1	1 65 @1 67½	2d quality	16 @ 18
do, No. 2	1 60 @1 62½	Sweet V Grass	— @ 75
do, No. 3	1 45 @1 50	Orchard	20 @ 25
Choice Milling	— @1 70	Red Top	— @ 15
HIDES.		Hungarian	8 @ 10
Hides, dry	19 @ 19½	Lawn	30 @ 40
Wet salted	9½@ 11	Mesquit	10 @ 12½
HONEY, ETC.		Timothy	9 @ 10
Beeswax, lb	23 @ 25	**TALLOW.**	
Honey in comb	14 @ 18	Crude, lb	6½@ 7½
Extracted, light	9 @ 10	Refined	10½@ 11
do, dark	7 @ 8	**WOOL ETC.**	
HOPS.		SPRING—1882.	
Oregon	20 @ 21	San Joaquin, free	20 @ 23
California, new	22 @ 25	do, fair	18 @ 19
Wash. Ter	19 @ 20	do, dusty	15 @ 17
Old Hops	— @ —	Southern Coast	15 @ 18½
NUTS—Jobbing.		Stanislaus & Tuolumne	23 @ 27
Walnuts, Cal	10 @ 11		
do, Chile	7½@ 8		
Almonds, hd shl lb	8 @ 10		

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., May 10, 1882.

Eng Standrd Wheat	9 @ 9½	45 inch	9½@ 9¾
Cal Manufacture		40 inch	8½@ 8¾
Hand Sewed, 22x36	9 @ 9½	Wool Sks Hand Swd	
20x36	8½@ 8¾	3½ lb	— @47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	— @49½
Machine Swd 22x36	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10½	Bean Bags	6½@ 7
Quarters	6 @ 6½	Twine, Detrick's A	32½@35
Eighths	4½@ 4½	" " AA	35 @37
Hessian, 60 inch	— @12		

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., May 10, 1882.

FRUIT MARKET.		Pears, sliced	9 @— 9½
Apples, bx	2 00 @ 3 50	do whole	7 @— 8
Bananas, bnch	2 50 @ 4 00	Plums	5 @— 6
Cherries	8 @ 30	Pitted	11 @— 12½
Cocoanuts, 100	6 00 @ 7 00	Prunes	9 @— 10
Cranberries, bbl	12 50 @14 00	Raisins, Cal, bx	— @ 2 50
Gooseberries	8 @— 20	do, Halves	— @ 2 75
Limes, Mex	8 00 @10 00	do, Quarters	— @ 3 00
do, Cal, box	2 00 @ 8 00	Eighths	— @ 3 25
Lemons, Cal, bx	1 75 @ 2 50	Zante Currants	— 8 @— 10
Sicily, box	6 50 @ 7 50	**VEGETABLES.**	
Australian	— @— —	Artichokes, doz	— @— 50
Oranges, Cal, bx	3 00 @ 5 00	Asparagus, box	— 75 @ 1 00
do, Tahiti M	— @— —	Beets, ctl	— @ 1 00
do, Mexican	15 00 @17 00	Cabbage, 100 lbs	1 25 @ 1 40
do, Loreto	— @— —	Carrots, sk	— 65 @— 75
Pears, bx	— @ —	Cauliflower, doz	— 50 @— 60
Pineapples, doz	8 00 @ 9 00	Garlic, lb	— @— 1½
Strawberries, chst	8 00 @12 00	Lettuce, doz	— 10 @— —
DRIED FRUIT.		Mushrooms, bx	— @— —
Apples, sliced, lb	— 7 @— 7½	Okra, dry, lb	— @— 50
do, evaporated	— @— 12½	Peas, green, lb	— @— 1½
do, quartered	— @— 7	do, sweet	— 1½@— 2
Apricots	— 18 @ 22	Parsnips, lb	— @— 1
Blackberries	— 14 @— 16	Rhubarb, bx	— 35 @— 75
Citron	— 28 @— 30	Squash, Marrow fat, ton	18 00 @20 00
Dates	— 9 @— 10	String Beans	— @— 20
Figs, pressed	— 4 @— 6	Summer Squash	— @ - 10
do, loose	— 3½@— 5	Tomatoes	— 15 @— 20
Nectarines	— 14 @— 15	Turnips, ctl	— 75 @ 1 00
Peaches	— 11 @— 11½		
do pared	— 14 @— 18		

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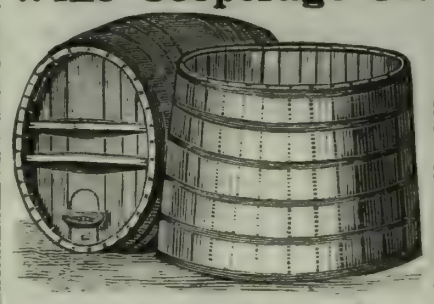

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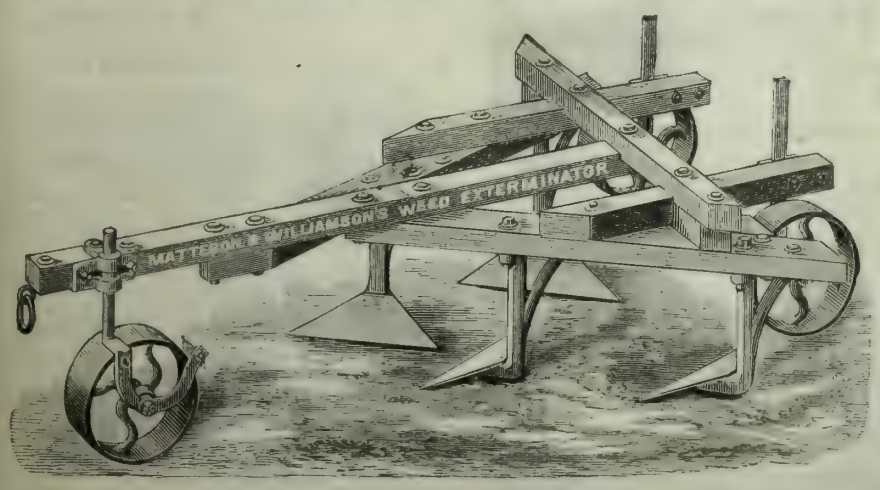

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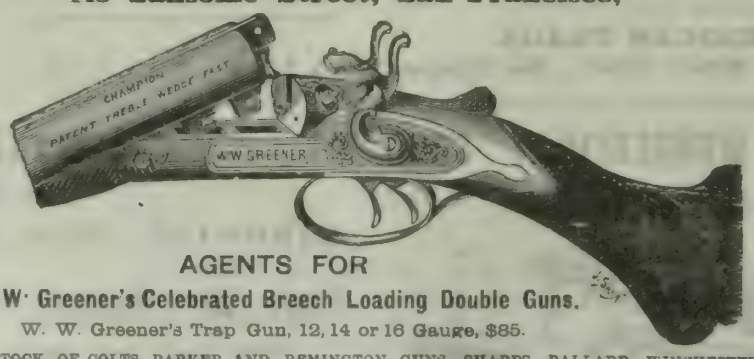

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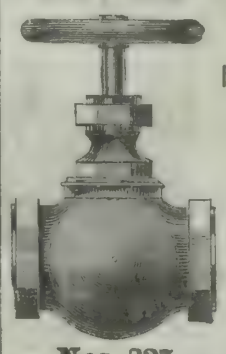

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PACIFIC RURAL PRESS

TWENTY-FOUR PAGE EDITION.

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Window Gardening.

Generally speaking, Californians can do all the gardening they care for out of doors, and the list of hardy plants in our climate is, as a rule, much larger than the garden area. There are, however, among our readers in cities and towns, some landless people to whom house gardening gives the only chance for the enjoyment of plant growth. There are also others who desire to supplement their out-door gardens with a house growth of exotics, whose delicate leaves and flowers are in contrast to the coarser tenants of free air and sunshine. One of our neighbors recently added a square bay-window to his house and fitted it up especially for a window garden, a pair of low French windows serving as an entrance thereto. The venture was quite a success, adding to both the exterior and interior beauty of the house.

The engraving on this page shows how the light end of a room may be decorated with living plants, and it is merely put forth as suggestive, because arrangement and choice of plants will vary with individual tastes and facilities. There are, however, some general hints which may be of general use to those who engage in window gardening. We select some from the "Pacific Rural Hand Book," by C. H. Shinn:

Window gardening is one of the divine arts, and must have been invented for the sake of city dwellers, that they might in some degree learn to love Nature's grace and quiet delights. It is best to use a window with a southern or southeastern exposure, if possible, for only a limited range of plants succeed in the northern windows. A strong wooden box may be fastened securely to the window-sill outside, and filled with good rich earth, which may be had by mixing the sifted street sweepings, or the dust of a road, with half its weight of sand. The box will last much longer if it is lined with tin, making holes for drainage. The outside may be covered with rustic work, or with oilcloth, but the vines will soon hide it. Costly and beautiful window-boxes of earthenware, iron and stained wood may be bought, if desired.

Now, what shall we plant in our mute and empty box, so that it shall speak to us of cool woods and fragrance, of rest and patience? Well, first, is the box in the sun daily?—then we can have flowers and brilliant markings on the leaves. If it is mainly in the shade, then we must have fewer flowers and soberer colors. Second, is the box to be kept pretty dry, or reasonably moist, or very wet?—because, in each separate case it will require an altogether different set of plants. In a shady place, the ferns, daisies, double violets, pansies, primulas and Tradescantias do well. The Echeverias, Sedmus, and other succulents, prefer a dry, sunny place; and an Agave or Yucca may be used as a center piece. An investment of five cents in Single Portulacca seed, or, better yet, of 15 cents in double seed, would fill a window-box with beauty and color all summer. In a reasonably moist box belong Coleus (if warm enough), Zonale geraniums, blue lobelia edgings, a smilax, to run on strings and net the window with its graceful loopings. And, if we use calla lilies, we shall find that they need quantities of water.

House plants may be kept in pots or boxes, placed on a shelf or table near the window, in a well-aired room. The surface of the pots must be kept stirred and free from weeds and moss. Give the plants a thorough watering, and then leave them until the surface looks dry again. Pick off the dead and decaying leaves and faded flowers; if mold appears, the place is too cold and damp; if the leaves curl and fall, it is too hot and dry. Pinch back the shoots of fuchsias, geraniums, coleus, etc., so as to keep them compact. Florists have a bad trick of running them up tall and slender, so as to save room in the greenhouse; when you buy plants get stocky ones with short joints and dark leaves. Set the pots in saucers, and a little apart, so as to allow a free circulation of air. Turn the plants half way around every few days, or they will grow one-sided. Keep a saucer of wet sand on the window-sill, and start slips of your choicest plants.

If plants seem to do poorly, try the effect of warm water, night and morning. Wash the leaves occasionally with warm soapsuds. Little white scales often appear, as a result of ill health, and must be washed off with whale-oil soap. A quart of lime in eight or ten gallons of water will destroy the common angle-worm, often so annoying in pots.

DESIGN FOR WINDOW GARDEN.

There are so many plants well adapted to house culture that it is hard to select the best. Two, at least, of the abutilons, the Boule de Niege, pure white, and Mesopotamicum, yellow and red, small leaves, are valuble. Most of the flowering begonias do well. B. Fuchsoides is, perhaps, the best to begin with. The Begonia Rex are grown chiefly for their foliage. Crassula Cordata is a good small succulent, which has white flowers in spikes. The Epiphylums, or lobster-leaved cacti, are constant favorites. They require light soil and a period of rest. The Euonymus will succeed at a north window, and the fuchsias only need a little sun, but easily become pot-bound. Among the best fuchsias will be found Aurora, Beacon, Arabella Improved, Dictator, Gem, Princess Alice, Elm City, Double White, Tower of London, Roderick Dhu, Tribune, Maximum and Vainquer de Puebla.

When we begin to consider the geraniums, they appear too numerous to mention; and hardly anyone pretends to grow them all. Jean Sisley and Master Christine are two of the best zonales. The doubles do well in boxes almost anywhere. The ivy geraniums are unsurpassed for house culture, being valuable both for leaf and flower. Fairy Bells, with violet and white flowers; Diadem, deep crimson; Innocence, pure white; and l'Egante, with dark leaves bordered with white—these are the best known. The Primulas, or Chinese primroses, do admirably in the house, and stay in bloom for months. Cinnerarias, taken from the greenhouse when just opening, are very satisfactory. The smilax and the Lygodium Scandens, or climbing fern, are of easy culture, and form graceful festoons. The wax plant (Hoya Carnosa), and the variegated English ivies are good climbers for the house. The hybrid Tropoleums have a rare brilliancy, and a heliotrope is never out of place.

THE Elko (Nev.) *Independent* says: Reports from the various agricultural districts, east and south, within the county, show that plowing is well advanced generally, a majority of the farmers having finished, and in a number of localities they are through seeding also.

A Grievous Frost.

Late frosts, coming when the fruit growers considered themselves well nigh out of danger for the season, have wrought much injury to the orchards, vineyards and gardens. Both north and south of the bay the low temperature prevailed, and while reports come of grape destruction from Sonoma and Napa counties, the injury of pears, peaches, plums, cherries and apricots is announced from Watsonville, Santa Cruz county. The occurrence of the frost and incidents connected therewith are worth recounting.

From the extreme north it is reported that on Friday night there was a heavy frost at Centerville, eight miles from Shasta, which killed the grapes and some other fruit. A heavy frost at Trinity Center, Trinity county, is said to have killed all the fruit at that place, and reports are that the frost was general throughout Trinity county.

A correspondent, of the *Bulletin*, writing from Napa, says: "The frost of Friday night last played sad havoc with the vineyards in Napa valley, from Rutherford down. Mr. Crabb lost a considerable portion of his crop in the part of his vineyard lying near the railroad. Mr. Grossman is a sufferer to the extent of many hundred tons of promised grapes. Mr. Estes' hundred-acre vineyard is entirely gone, and where he reasonably expected to receive from $10,000 to $12,000, he says he would take $500 for this year's probable yield. His case was peculiarly unfortunate. On several previous occasions during this season his crop was saved from damage by smoking the vineyard just before sunrise—the time when the frost generally does its malevolent work. But during Friday night his men failed to have the smoking attended to, and the error has proved fatal. The higher hillside vineyards generally escaped, and all is well at St. Helena. The same is true of the vineyards in the hills on the Sonoma road."

Around San Jose there was a remarkably heavy frost, which is said to have frozen the surface of shallow water. From farther south, a correspondent of the RURAL writes from Watsonville as follows: "The frost of Saturday morning did much damage in this valley. Early potatoes and tender garden truck all cut down Beans and corn badly nipped. Pears, peaches, plums, cherries and apricots all hurt pretty badly. Weather, high windy and dry."

It is impossible as yet to accurately measure the evil which has been done by these unseasonable frosts, but it is apparent that the aggregate grape yield will be considerably reduced.

TORNADOES AND HOW TO AVOID THEM.—The Signal Service Bureau has in press a monograph, by Sergeant Finley, containing a review of the observations of 600 tornadoes, with generalizations from the recorded facts and suggestions as to the methods which ought to be followed in the investigation of such storms. The storm studies have occurred during the past 87 years in all parts of the country. The storms occur most frequently from five to six in the afternoon, although there is no hour of the day that has been entirely free from them. The average width of the path of destruction is 1,085 ft., and the storm cloud runs with a velocity of from 12 to 60 miles. The wind within the vortex sometimes attains a velocity of 800 miles an hour, the average velocity being 392 miles. Among the most valuable suggestions of the paper are those with reference to the peculiarity of the movements of tornado clouds, containing rules for arriving at their violence. A tornado cloud always has a center, and it always moves forward from west to east. It may, however, sway from side to side in its progressive movement. Changes in motion are sometimes very sudden. In the event of a sudden change the observer, who is east or south of east of the storm, should move quickly to the south. If he is northeast he should move to the north. If within a very short distance of the cloud the observer should run east, bearing to the south.

CORRESPONDENCE.

We admit, uncendorsed, opinions of correspondents.—Eds

Transportation of our Products.

EDITORS PRESS:—My attention has been called to an article from Mr. L. F. Moulton on the above subject, doubtless honest in intention, but so replete with errors that a due regard for the interests involved urges me to correct a few of the most pertinent mistakes of fact found in the paper.

The criticism of our Representative, Mr. Page, for his course in Congress on the Eads' ship-railroad scheme, is unjust and devoid of force to anyone cognizant of the facts. The railroads do not fear the Eads' project—they ridicule its pretensions. Mr. Page has shown his devotion to the interests of the constituency and State he represents, and deserves the warm commendation of every Californian. His honest objections to Eads' visionary scheme are shared by every shipbuilder, ship owner, and marine underwriter in the United States, not one of whom has Mr. Eads succeeded in impressing with the value of his project. The various certificates printed by Eads are worthless, interested evidence, obtained by various influences, which space forbids enumerating, and chiefly from foreigners who have an indirect interest in injuring our maritime commerce.

In some cases his experts confine themselves to certifying to the efficiency of lifting docks worked by hydraulic power, which no one denies. In other instances, they merely assert the practicability of moving heavy weights over a railroad in one mass, provided a suitable foundation can be had. The whole evidence bears the stamp of preparation, and, as was remarked by an eminent attorney before a Congressional committee, its excessive uniformity is suspicious.

This paper does not admit of the discussion of engineering difficulties which stand in the pathway of a ship-railway over an elevation of 854 ft., and with heaviest grades.

The questions of solid foundation, dangers to loaded ships out of water, impetus on down grades, dangers from violent side winds acting on ships resting on their keels, entirely exposed, and many other technical points involved, are too prolix to keep within the bounds of a newspaper article, but I propose to submit two commercial considerations which at once condemn the scheme, and, as Capt. Eads and his friends have never yet answered them, there is propriety in asking any party interested to do so. These considerations are not arguments—they are positive facts, and unless disproved as such, there is no value in Eads' ship-railway scheme.

1. The Suez canal was operated in 1881 for 9% of the gross receipts (8.85 was the exact fraction). The Nicaragua canal can be operated as cheaply, or more so, for the slight expense of managing 10 locks will be much less than the constant dredging required by the Suez canal, owing to the drifting sands of the desert. The average expense of operating main trunk-railroad lines in the United States during 1881, was 61% of gross receipts, as proven by examination of their reports.

Capt. Eads proposes to operate his ship railroad for 50% of gross receipts. Admitting that he can do this (and it is doubtful), the difference between 50% and 9% amounts, on our Pacific coast wheat crop of last season, to $6,650,000, which our farmers would have to pay for the privilege of using a ship railway (if one were practicable), as compared with a ship canal!

The depreciation of a ship railway, with its 12 or 14 lines of rails and sleepers, its hydraulic lifting docks at each end, its hydraulic turntables and side-tables on the line; all this paraphernalia on the surface, exposed to a tropical climate, will amount to 12% per annum, as any engineer will admit. The Panama railroad replaces its lignum-vitæ sleepers in less than five years, and depreciates in the annual ratio above stated. Consequently our producers and merchants would have to pay for rebuilding the ship railroad every eight years, or, at least, fixing on a 10% annual depreciation every 10 years, amounting to an additional tax of over $7,000,000 per annum on Eads' estimate of cost.

Compare this with a ship canal which absolutely improves with age—absolutely has no depreciation. The canals of Holland are better to-day than when built, two centuries ago. The above two points, viz., cost of operation and annual depreciation, are facts which cannot be contested, and they alone condemn the ship railway as compared with a ship canal. These facts have never been contested, simply because they cannot be, and the extra tolls to be imposed upon commerce on their account completely settle the commercial impracticability of a ship railway, while their tacit admission is found in the text of Eads' Railway bill, which fixes tolls nearly double those which are allowed to be charged by the incorporation bill and concession of the "Maritime Canal Company of Nicaragua."

It is not within the scope of this article to criticise the Eads' Ship Railway bill, which has so many bad features that it cannot stand honest criticism; which binds the Government before the success of the work is assured; and which includes guarantees as to transportation of tonnage from 50% to 100% less than the size of ships which we should use to carry our freight cheaply. These are points involving more space than these columns afford. But it is advisable to examine briefly the question of cost. Eads places the cost of his ship railway across Tehauntepec at $72,000,000. How does he know this, in the absence of any survey? And, if he figure no closer than in his St. Louis bridge, which was to cost $4,500,000, and really cost over $15,000,000, who can estimate the cost of his ship railroad? In fact, he has never been over the ground, and knows little about the probable cost. Now, at Nicaragua close instrumental surveys have been made by disinterested and competent United States Government officers. Every cubic yard of excavation, every day's work that can be foreseen is allowed for, and this official estimate, including 25% contingency estimate, is $52,000,000. Even then the projectors admit it may cost $75,000,000 or $80,000,000, and at these figures it will be the cheaper work of the two, while its simplicity and practicability are so evident that every intelligent man who examines the project from a disinterested standpoint becomes a friend of the project.

The success of the Panama canal is a matter of grave doubt. Its construction is being attempted under auspices inimical to our national safety and self-respect. Enormous physical obstacles are to be overcome, with very doubtful prospects of success. Originally estimated to cost $168,000,000, it will probably cost nearer $400,000,000, but once completed, it has the merit of being a practical work, which the Tehauntepec scheme is not.

To the Pacific coast the question of inter-oceanic transit is of vast moment. We need an inter-oceanic highway, comparatively cheap and eminently practical, and these points are found in the Nicaragua canal project alone. The most eminent engineers and scientists in this country, who are familiar with the project, endorse it; while official commissions appointed by our Government for the examination of the various routes, have always pronounced it the cheapest and most practical. This is not idle assertion—the official records at Washington attest the truth. The producers of our coast are equally interested with our merchants in a correct understanding of this subject, and their support should not be given wildly to any project. Let them inform themselves on this subject by examination of official records; let them take no assertions for granted that are not borne out by proofs founded on official surveys and they will arrive at an assured conclusion that in Nicaragua is to be found the commercial and practical solution of an inter-oceanic highway. Nature has placed the stamp of her approval there, with a summit level by one-half the lowest known between the two oceans, and, having crudely marked out the way, she there invites the genius and the energy of man to accomplish the beneficent task of uniting the two great oceans, and opening the "gateway of the Pacific."

WILLIAM L. MERRY.

San Francisco, Cal.

Lake County Notes.

EDITORS PRESS:—Although the promise of seed time and harvest has been known to fail in some parts of California, and, also, the wind being "tempered to the shorn lamb," yet in Lake county the entire failure of crops was never known from its earliest settlement. The atmospheric changes of the seasons are sure to produce rain—generally too much in winter.

I have just visited a vegetable garden where irrigation was continued through the dry season. It was surprising to note the effect; one portion was uncultivated and some manure containing oats and barley scattered over it last fall; the grain had started before the rain, had been growing all winter, and now, in early spring, there was a large growth, headed nearly to ripeness.

One year ago last winter I obtained from the State University one pound of Nepaul or bald barley. The object I had in view was to test its quality for hay, and whether it was hardy and grew as rapidly, etc., as common barley (to ascertain which will require two or three years). The beards of common barley and the hard woody structure of wheat are objectionable for hay. Then the extremely dry air here in summer renders it difficult to save alfalfa, for the leaves powder up and are lost before the stems are dry. I hope the disagreeable labor of handling bearded hay and its cruelty to animals will soon be a thing of the past.

The people of our county, for the last few months, have been agitated on the subject of a railroad, but have now slightly abated, owing to the excitement in the political arena by the scramble for office, so as to get a grab at the piles of coin wrung from the dear people who own land and have a home. Strange it cannot be seen that it is bleeding the goose that might lay the golden egg. Money for roads and local improvements is now obtained by taxation and spent by officers without economy. One of the first principles of a good government should be that every man should know best how to spend his own money. If less money passed through the treasury the disgraceful wrangle for office would soon cease. Herein also lies the cause of the wretched condition of the public roads in this county.

As I write, on the 8th of May, I see the hills on their southern slopes are putting on their autumnal hue; a mild wind is blowing from the north, dry, and rapidly absorbing moisture from the surface wherever it comes in contact. The late-sown fields of grain and shallow-plowed spots appear in a painful struggle, pointing upward for help as if in despair of covering the ground.

C. P. SCRANTON.

Lower Lake, Cal.

Napa County Notes.

EDITORS PRESS:—Since my last letter, Napa valley has taken on a new era of prosperity. Old things are passing away, and everything becoming new and in keeping with the age in which we live. It is sad to see our old pioneers parting with their old homesteads, where they have reared their families in peace and quiet, yet it is pleasant to see the happy smiles of the lucky purchasers, who know full well they can go nowhere else and get so much in return for the money invested as here in this beautiful Napa valley. St. Helena just now seems to be the center of attraction, but it is spreading in every direction from valley to vale, from hill to mountain top, for it is viniculture that has given this sudden impetus to renewed prosperity.

In my residence of 12 years here, I have never seen a more favorable season for farm and vineyard work — no heavy rains, but gentle showers sufficient to keep the soil in the best condition for work. Hundreds of acres of new vineyard have been planted this spring, and never have we had so favorable a season to start the newly planted cutting into active growth. All danger of frost seems now to be past, and all are joyous with the prospect of a bountiful harvest of the fruit of the vine.

Napa City has been "under a cloud" for a time, but she, too, has awakened from her "Van Winkle sleep," and finds that she has the soil and climate adapted to grape, plum, prune, and many other varieties of fruit profitable for drying and canning. If she puts her shoulder to the wheel, and gets the S. and C. L. R. R. through, a canning establishment and woolen mill will soon be wanted in Napa. She would draw heavily on Lake county for wool, and in a few years much fruit will be available for canning.

Several years ago our old pioneer citizen, Dr. G. B. Crane, bought a tract of land now within the corporate limits of St. Helena, I think, for $3 per acre. His neighbors thought it a bad bargain, and christened it "the Doctor's rabbit patch," as it was covered with chimese brush and infested with innumerable hares. The soil was of a nature hardly suitable for profitable agriculture, so the Doctor bethought him to try the grape, a few acres of which he planted of the old Mission variety, and cultivated until they came into bearing; but there was no sale for the grapes. What then? A man in the Doctor's employ thought he could contrive a sort of press, by which the juice might be extracted and converted into wine. It was done. The wine was made, but, as with the grapes, no sale. The Doctor must needs go East and open up a market, which he did. But, reader, don't think this was done in a day, or a month; it required years of time, much money, and persistent effort before the product of the "rabbit patch" paid its owner a profit. From this beginning has developed one of the greatest industries in Napa county. Whoever wants to know more of this and other industries in this county should send to E. W. Woodward & Co. for a free copy of the Napa County *Viniculturist*, and subscribe for the St. Helena *Star*, or, for the lower valley, the Napa *Register*. Both papers are of to-day, alive to all the interests of the county and publish the doings of the viticultural associations of their respective towns.

The prospect is favorable for a fair crop of apples, peaches, plums and prunes, but the dreaded codlin moth has found his way here at last. I fear it is good-bye to the apple and pear for the present. People generally do not know what to do; and if they did, do not feel disposed to fight the enemy, so used have they become to getting crops without much effort on their part. Many have asked me the cause of so much wormy fruit in their orchards, not knowing there was such a thing as the codlin moth. What we need is to organize horticultural societies in every county in the State, so that everyone may be made acquainted with the enemies that threaten the profitable culture of fruit—a promising industry on this coast.

[One would think that a little time spent in reading the papers would be a benefit to people who don't know about the "wormy fruit." Every paper in the State has expounded this matter over and over again.—EDS. PRESS.]

Farm crops hereabouts are looking fine; early-sown barley is headed out; grain on very rich bottom land is growing too rank and will lodge some.

Our hop growers have no complaint to make, save the low prices. Their vines are starting nicely, and new poles are being prepared for setting. David Cole secured 22 000 fir poles from Howell mountain.

JNO. MAVITY.

St. Helena, Cal., May 11, 1882.

POULTRY YARD.

Broken Down Fowls.

EDITORS PRESS:—A correspondent writes, asking, "What is the matter with a Partridge Cochin hen of mine? She drags down a little behind and her feathers are always soiled as by something liquid." Further inquiry revealed the fact that "the roost is about five feet from the ground, reached by a ladder. I once put feed in the coop when the hen was on the roost; she flew directly to the ground, after which I noticed that she was a little lame, as she now is when walking quickly or running."

I have before stated in the columns of the RURAL PRESS, as well as in my "Poultry Book" and elsewhere, that roosts for Asiatic fowls (Cochins, Brahmas, Langshans, etc.), should not be more than two or two and a half feet from the ground. For the Leghorns and other smaller breeds it does not matter so much what the hight is, although for them I prefer a roost three or four feet in hight to a higher one. "The roost is five feet from the ground," at once accounts for the trouble with this Partridge Cochin hen. While she will of necessity always ascend by the ladder, it will be found that occasionally she will jump down, and if laying, one such leap will often suffice to break an egg and perhaps ruin her, both for looks and laying. Asiatic roosters are also injured by jumping from high roosts, for they seldom alight on their feet alone, as do the lighter breeds, but legs, breast and all the under part of the body usually come in contact with the ground. Let the roosts be made low and a broken down hen or lamed rooster will be a rarity.

WILLIAM NILES.

Los Angeles, May 8, 1882.

More About Incubators.

EDITORS PRESS:—I have just noticed in your edition of April 29th, under the head of "Notes on Incubators," Mr. Dias' long and disinterested endeavor to prevent the misleading of beginners in the business of artificial incubation and raising of fowls. As he seems to be so solicitous in their behalf, I will endeavor to set him right upon a subject, his sole knowledge of which seems to be derived from the remarks of Mr. Lewis Wright and Mr. Halsted (whom he is pleased to dub "Webster on incubation"), upon the defects of sundry incubators other than the one under discussion, viz., *the Pacific*.

Now, I claim that the Pacific, after a three years' trial, is a thorough success, turning out from 75% to 90%, and frequently as high as 95% of *healthy* and *strong* chicks from tested eggs. I also claim for this incubator, as its chiefest merit, its entire departure from the ideas of the "standard authorities" as to automatic regulators, fixing of thermometers and other contrivances, which are not practical, and, in my opinion, are attached to the machine merely to catch the eye of the public. Anyone who has wrestled with the numberless automatically regulated machines (I have tried them all), with their complement of galvanic batteries, springs, etc., can appreciate the peace and calmness which comes by contrast from the use of a machine which will take care of itself in despite of the authorities, a fact which can be abundantly demonstrated.

Now, if Mr. Dias had any knowledge of the working of the Pacific incubator and had not jumped at conclusions, he could (I hope) be readily made to understand why the thermometer in the water would not show the same temperature as would one laid upon the eggs or suspended directly over them; and it may be interesting to him, in this connection, to know that the doors of the machine are kept open for the last three or four days of incubation, and that there is a constant stream of fresh air at all times passing over the eggs.

This is a vital point in artificial incubation, to which we are led by the action of the hen herself, who sometimes, for a half hour at a time, pushes the eggs away from herself to the edge of the nest. If the machine were closed air tight both the thermometers would register alike; but the first object aimed at in the construction of the Pacific incubator was the avoidance of a close and stifling atmosphere, which is the cause of more deformed and dead chicks than all others combined.

The object of the thermometer is to tell the temperature of the *source* of heat, and that can only be ascertained by the immersion of the thermometer in the water. All bodies do not part with their heat in the same proportion, and though the temperature of the air immediately over the eggs might be some degrees lower than that of the water, it does not follow by a long shot that the eggs would be of the same temperature as the air. The heat of the room in which the incubators are placed has nothing whatever to do with the production of chicks, as we have abundantly proved during the last three years.

My incubators are placed in a large tank-house where the temperature has varied 30° in the 24 hours this winter, and there has been no occasion to touch the lamps between 9 P. M.

and 6 A. M; the time when the lamps require most attention being in the heat of the day, when they must be turned down slightly.

Next, as to artificial warmth after the chicks are hatched. Mr. Jno. Peterson, the inventor and maker of the Pacific incubator, who is now associated with me, hatched with these same incubators which Mr. Dias fears are going to demoralize beginners and bring artificial incubation into disrepute, some 6,000 ducks and chickens in 1880, and 10,000 in 1881, and raised them successfully on the box and blanket plan which Mr Dias, without knowing whereof he speaks, is so confident will fail. Now I can say to Mr. Dias from actual experience, that the only difficulty (if it be a difficulty), in raising chicks on this plan, is in keeping them cool enough, and this is where good judgment and watchfulness come in. So far this year I have raised about 1,200 chicks, and during the coldest days and nights of the early winter experienced no difficulty in keeping them warm, and now have as fine a lot of chicks as can be seen anywhere.

I will state that, in addition to my own yards there are two other establishments in Oakland using the "Pacific Incubator and Glazed Hatching House," one of which has raised about 3,000 chicks with two incubators, and the other some 500 with a small incubator this season. Both of these establishments are open to visitors and can be seen at any time. In conclusion, I will say that Mr. Dias, or any other person who cares to test the accuracy of my statements, will find every facility extended them to make a personal examination, as was the case with the gentleman representing the RURAL PRESS, who knew whereof he wrote. GEO. B. BAYLEY.

Cor. 17th and Castro Sts., Oakland.

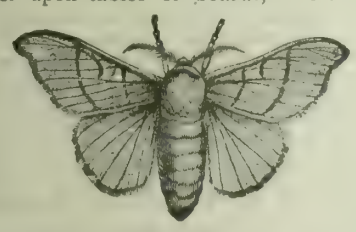
SERICULTURE.

Silk Culture in California.*

(Continued from last week.)

FECUNDATION.

The moths generally come out of the cocoon in the morning, between seven and eight o'clock. They should be immediately paired or the eggs will not be good. As fast as they become paired they should be removed by taking them up carefully by their wings, and placing them upon white paper upon tables or boards, where they



Female Moth—Natural Size.

should be left in quiet and darkness, as the silk moth is a night insect. In thus removing them care should be taken not to hurt or separate them. Such as are not paired should be placed on a separate sheet of paper, when they will soon become mated, after which they should be placed with the others already paired. Occasionally a male among the paired ones gets separated from his companion. When this happens he should be removed, else he will cause disturbance and further separations. All those that become separated are to be put back with the unpaired ones, that they may get mated again. The unmated males placed in the box are kept for reserve. All the balance may be thrown out. The next morning the process is repeated the same as before with the remaining moths. This process is to be kept up from day to day till all the moths have emerged from the cocoons. After all are paired, they should be allowed to remain undisturbed about twenty-four hours, when they are to be separated, by taking the wings of the male with one hand and those of the female with the other, and drawing them apart gently, so as not to hurt them. After this the males may be cast aside and the females placed on pieces of white cotton cloth, about twelve by fifteen inches in area, where they are to lay their eggs.

LAYING THE EGGS.

The females generally begin to lay as soon as the separation from the males is effected. It is important that the two sexes be completely separated. When once the females have commenced laying they need to be looked after no further. They lay from two hundred to three hundred and fifty eggs in number. This done, the mission of this wondrous insect is ended. As in the moth state it does not eat, it soon dies.

PRESERVING THE EGGS.

The cloths on which the eggs have been deposited should be hung up and allowed to so remain for fifteen or twenty days, as there is always a greater or less number of bivoltines in every lot of eggs. During this time the bivoltines will hatch out and the worms, not being fed, will perish, leaving only the annuals for the next spring's hatching season After the bivoltines have thus hatched out the cloths, with the remaining eggs, may be taken down, rolled together carefully and placed in tin boxes, with a somewhat loose lid, two or more sides of which should be well perforated so as not to stifle the eggs as they will spoil if kept in air-tight vessels. These boxes should be kept in a cool room, or in a dry cellar facing north. They should be examined occasionally and aired, to see that they do not become mildewed from dampness.

WEIGHING THE EGGS.

To ascertain the weight of the eggs is very important, especially if they are intended for sale. The muslin on which the moth is to deposit the eggs must be carefully prepared. Each piece must be dried and then accurately weighed by itself, and its weight in Troy grains (apothecaries' weight) must be marked upon it. Thus prepared it should be placed, at the proper time, under the moth to receive her eggs. Then, when the eggs are laid, each piece should be carefully weighed, and its weight distinctly marked as before, leaving both weights for inspection by the purchaser. The difference between the two weights shows the weight of the eggs.

PREPARING THE COCOONS FOR REELING.

In order to prepare the cocoons for reeling or for sale the chrysalis must be killed. This is commonly done by steam heat. In California it may be accomplished by exposing the cocoons to a hot sun from nine to four o'clock for two or three days. A longer time is needed if there is much air stirring. The examination of a few cocoons will determine when the work has been properly done. This process should be attended to within a week after the spinning is completed. It should be remarked that the heat of an oven destroys the fine gloss of the silk. Sun heat also fades somewhat injures the the gloss of the cocoon.

If it is desirable to retain the natural color of the cocoon the sun process should not be employed to kill the chrysalis, as the color will thereby be faded out to some extent. The chrysalis may be readily killed by placing the cocoons in any close vessel or box, into which steam may be conducted from a tea-kettle or boiler. A common wash-boiler might be used by putting a little water in the bottom and keeping the cocoons a few inches above the water, being careful to have the cover closed and kept tight, but not so much so as to admit of any explosion.

PREPARING THE COCOONS FOR MARKET.

In preparing the cocoons for market, after the chrysalis has been killed, the cocoons should be spread out on boards or shelves in a well ventilated room to dry. They should be frequently stirred or turned over for the first three or four days, and afterward occasionally for about two months; when they will have become thoroughly dried, the reeling process may be commenced, or they may be packed for shipment or a market. They may be packed either in barrels or boxes. In order to guard against insects a little pulverized camphor gum or other insectifuge should be sprinkled over each layer of three or four inches in depth. Tobacco stems would probably answer just as well if freely used, and would be much cheaper, as they can be had at the cigar factories for carrying away. Care should also be taken to guard the cocoons against moths, mice, or ants.

SPACE REQUIRED FOR WORMS.

The worms from one ounce of eggs—about thirty-six thousand—should have a space on the shelves:

In the 1st age of	10 sq. ft.
In the 2d age of	20 sq. ft.
In the 3d age of	50 sq. ft.
In the 4th age of	125 sq. ft.
In the 5th age of	225 sq. ft.

A room eight by twelve feet, with three tiers of shelves on three sides, will furnish sufficient room for feeding. The worms ought not to touch each other at any time.

VARIETIES OF SILKWORMS.

Domestication has had much to do in the production of varieties of the silkworm. The same worm transferred to another climate changes its character and silk product for the better or worse, according to the favorable or unfavorable conditions of its new home.

Some varieties produce one brood a year, no matter how the eggs are managed. Such are known as Annuals. There is another variety known as Bivoltines, which produce two broods a year—the first, as with annuals, in April or May; the second product may be obtained from the first litter of eggs within eight or ten days after they are laid. The eggs of annuals will not hatch, no matter how carefully treated, until the next season.

There are also Trivoltines, which will produce three generations in a year; Quadrivoltines, with four generations, and a variety known as "Dacey," which, if properly treated, may be made to produce eight generations in the course of a single year. Some varieties also molt but three instead of four times a year. This is the case with Trivoltines in warm climates.

THE ANNUALS BEST.

Taking into consideration the size of the cocoon, the length of thread, the quality of the silk produced, the time occupied, the hardiness of the worm, etc., the annuals are almost universally considered the most profitable to raise.

The established varieties of the annuals are generally known by the color of the cocoons which they produce and the country in which they are most especially cultivated. The three best known and most marked European varieties are known as follows:

The Milanin (Italian), which produce a fine yellow cocoon.

The Ardeche—pronounced Ardesha which produce a large yellow cocoon.

The Brouse (Turkish), which produce a white cocoon—generally considered to be the very best in quality.

The latter variety of silk is the most valuable in commerce; but the races which produce the colored cocoons are generally considered the most healthy.

THE SILKWORM IN CALIFORNIA—JAPANESE CUNNING.

The worm now domesticated in this State is of the latter class, and is probably a descendant of the Ardeche, the French variety, which was imported to this State about 1860 by Mr. Prevost, of San Jose. Mr. Prevost sent, in two successive years, to Japan for some eggs with which to commence his experiments in San Jose. Both these importations failed utterly. He never got a single worm from them. With a persistency characteristic of the man, and still resolved to prove the theory which he had promulgated—that California was pre-eminently calculated for silk culture—he sent out his orders again, and this time both to Japan and to France. The eggs arrived in due time, but those from Japan again failed, while his French eggs nearly all hatched out. The Japanese had shrewdly guessed his object, and adopted the plan of sending unfertilized eggs as a means of discouraging the attempt which they saw was being made in California to wrest from them the profitable business of supplying Europe with silkworm eggs. The lamented death of Mr. Prevost, a few years later, put a check for the time upon silk culture, which, had he lived, he would in all probability have fairly established in this State as soon as the speculative form to which his legitimate efforts gave a foothold had subsided.

This Society has now taken up the work of Mr. Prevost, and, if the spirit of speculation can be kept out of the way, it will no doubt soon succeed in accomplishing the end which he so persistently and so patriotically sought to attain.

From a paragraph on page 23 of Mrs. Hittell's "California Silk Growers' Instructor," it appears that Mr. H. Herich, of San Francisco, met with about the same experience as that related by Mr. Prevost, in getting silkworm eggs from China, and at about the same period of time.

FACTS AND FIGURES.

A few facts and figures are subjoined, from which almost any question that will be likely to come up in regard to silk culture may be answered, when the answer cannot be found in the foregoing pages.

The moths eat nothing after leaving the cocoons, and die in a few days after depositing their eggs. The females lay, on an average, about two hundred and sixty eggs. As an ounce of eggs numbers from thirty-six thousand to forty thousand, it will require about one hundred and fifty female moths to produce them. It should be remembered, however, that, in hatching, many of the eggs will fail; so that thirty-five thousand worms may be considered a fair result for an ounce of eggs; and that number of worms will produce about one hundred pounds of fresh cocoons, averaging about three hundred and fifty to the pound. These, when dried, will be reduced to about one-third of the original weight, or thirty-three pounds.

There is a very great difference in the weight as well as the quality of cocoons. Reports of careful observations made in the Atlantic States give the number of fresh cocoons to the pound all the way from two hundred to four hundred and fifty and even five hundred. Female cocoons weigh about twenty-five per cent. more than male cocoons. The sexes are about equal in number.

It requires about thirteen pounds of fresh, or four and one-third pounds of dry cocoons to yield one pound of raw silk. It costs the labor of two girls one day to reel a pound of raw silk. It is estimated that the value of the waste, in floss, double cocoons, etc., will about pay for power, foremanship and interest on machinery for reeling. The cost of reeling in France is estimated at $1 per pound.

About eight hundred mulberry trees may be cultivated on one acre of ground. They should be set out in equidistant rows, diamond shape. The trees will grow from four to five feet high the first year from the cuttings. Each tree will produce about twenty leaves for feeding, but no branches. The second year branches will be put out and the foliage largely increased. The trees should be trimmed and trained, as already described under the appropriate head. The third year it may be counted as a tree, and will yield ten or twelve pounds of leaves. It will come into full bearing in four or five years. The trees will produce two crops of leaves each year. In Europe the first is fed to the silkworms and the second furnishes a large supply of food for cattle, for which no green food is better. The quantity obtained is very large. Mulberry leaves would undoubtedly furnish a most excellent material for a silo, by which they might be readily kept and fed at leisure during the fall and winter months.

It may be premature to estimate the profits of silk culture in this State; but the writer, having numerous and correct data to guide him, ventures upon a few figures in that direction, which allow of a most liberal margin for discount—the records of numerous isolated experiments. In making the estimates he has been guided largely by the experience of a young gentleman who has spent some twenty years in practical silk culture in Syria and in France. It requires about twenty pounds of leaves to produce one pound of cocoons. An acre and a quarter of ground ought to sustain trees enough, when full grown—say the fourth year—to produce one thousand pounds of fresh cocoons, or about seventy-five pounds of raw silk. Five acres will feed worms enough to produce four thousand pounds of cocoons, or about three hundred pounds of raw silk. The labor cost of producing this may be estimated substantially as follows: One grown person and two boys or girls, first ten days of feeding; two grown persons and five boys or girls, second ten days; two grown persons and fourteen boys or girls, third ten days; two grown persons and five boys or girls five days to gather and pack the cocoons.

The above foots up seventy days' labor for a man and two hundred and sixty days' labor for a girl or boy. At $1.50 per day for the former and 75 cents for the latter, we have a total cost of $300.00. Add, for pruning and cultivating the trees and the eggs, $200, and we have, as the total cost of producing four thousand pounds of cocoons and getting them ready for the market, $500.00. These cocoons ought to be worth, at a low estimate, 35 cents per pound, or a total of $1,400. If we add one-quarter to the cost and deduct one-quarter from the estimated value of the result, we shall still have a profit of $425 as the return from five acres of land, and the oversight of the business for only five or six weeks of time during the dullest season of the year. How does this compare with the most profitable crops which can be taken from our farms and orchards, which require from four to six months of almost constant care and labor to make and gather?

To realize the above estimates skill and experience are required, as no one can expect to meet with anything but failure if he starts in with a large operation at first. For reasons readily explained, we have had failures in the business heretofore. These failures, however, were not the fault of the business, but of the methods in conducting it, and, in some cases, from accidental circumstances, which a little care and forethought or previous experience might readily have obviated.

We should begin the work in a small way. Set out a few trees this season, say twenty, fifty or one hundred. You will get leaves enough by August or September to feed a few hundred worms. Next season you may feed as many thousand. You will thus be gaining experience while your trees are growing, and your experiment will not cost you anything. If you make a failure you will at least learn something and enjoy a pleasureable experience. Trees or cuttings may be set out anywhere from December to July.

(TO BE CONTINUED).

*The California Silk Growers' Manual, By W. B. Ewer, A. M. Published, under the direction of the California Silk Culture Association, by Dewey & Co., office of PACIFIC RURAL PRESS, San Francisco. Price, postpaid, 25 cts

PATRONS OF HUSBANDRY.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully solicited for this department.

A Speech that was not Spoken.

EDITORS PRESS:—Noticing the proceedings of the Union Grange meeting at Santa Rosa, some days ago, I beg to remark, that this meeting did apparently neglect to include or discuss a question of more importance to farmers than the jury system, railroad commissioners, equality or decrease of taxes, social advantages, or even the formidable debris problem. But they are not the only Grange that forgot and overlooked the burning sensation of the day, for at the Alhambra Grange meeting at Martinez, a few days ago, the same oversight occurred. The W. M. of the State Grange instructed those present in the secret work, which was, after all, no secret, but well known to every good Patron. Then the brothers and sisters of nearly every visiting Grange were called upon for remarks, and reported how their respective Granges were progressing (or not). The visitor from Temescal Grange was not asked to express his sentiments, perhaps on account of his being the single representative of his Grange; at any rate he had to, and remained modestly silent, repressing his desire to be heard of and not only seen, and wondering what and who was coming next, and how, in the name of common-sense, those present could talk of education, co-operation, making homes pleasant and so forth, in one word, discussing minor questions, whilst, figuratively speaking, the angry waves, having broken the levees, were advancing upon them and entering their homes.

How and why Grangers do not notice the day of evil advancing, let one of them explain. The Temescaler would have at first mildly criticized the Quaker system of the Alhambra Grange meetings; he might have said substantially: Sisters and Brothers—I am astonished that you do not mix the sweet with the strong, the roses with the thorns, etc. Nature, our common teacher and mother, with whom you are in daily contact, teaches you a different and better way, and, notwithstanding some sisterly glances expressing astonishment at my seeming intrusion in the charmed circle, I feel quite comfortable amongst sisters, even not knowing most of them. The Temescaler is a bachelor, so to say, and that accounts for it. He would have proceeded and explained how the trade and labor organizations of California and Nevada assembled in convention to solve the Chinese incubus problem; how, considering that the interests of the producers are co-equal with those of the consumers, they invited the Grangers to take part and join hands with them, and that one Grange responded to their invitation. He would have stated that the League of Deliverance is the result of that convention, and calls on all interested to join the League and take a pledge to abstain from patronizing the Chinese in any way or manner. That the farmers must be aware that 50 000 Chinese displace 50 000 white workingmen and women, and that 200,000 white consumers of the farmers' produce must be more profitable to them than 50,000 non-consuming Chinese. He, the speaker, would have reminded them that individual happiness depends upon general prosperity; that the Grange is instituted to labor for the good of the Order, of our country and of mankind; that we are acting for our mutual protection, and finished by inviting them to form branch and district leagues. He would have been questioned and perhaps opposed, but this would have only enlightened those present more about the danger which surrounds and overhangs the community. All this, and more, that silent brother would have divulged instead of carrying home in his bosom this load of eloquence. However, he consoles himself with the fact that there will be soon other occasions and other Grange meetings where he may be called upon to participate. ED. WOLLEB.

THE GRANGE.—It is again plainly demonstrated that if the farmers do not look out for their own interests, no one else will. We see nothing strange in the fact that serious mistakes were made in the early business attempts of the organization. Our people were compelled to pit inexperience against the best trained ring masters in the world. Out of the numerous failures we gained knowledge and experience, and from these grew up a score or more of the best managed, most successful business institutions in the State, having the entire confidence of people everywhere. But it should not be forgotten that the Grange does not alone teach material benefits. It seeks to raise the intellectual standard of the rural communities by frequently meeting together in their councils. As a social organization it has never been approached in value by anything known in history. Here the farmer takes his wife and children, and what was formerly a community of strangers, now becomes, as it were, one family, with kindred feelings and desires. The prosperity now of the organization, we think, is more due to these latter considerations, and merits the approval and cordial support of all mankind.—*Sutter County Farmer.*

Little Things.

[An essay read before Pescadero Grange by the Worthy Lecturer, W. G. Thompson, and furnished for publication in the RURAL PRESS.]

"Despise not the day of small things," says one of old, yet if we do not despise, we are too apt to undervalue the little things which go to make up the sum of life.

In the material world we feel awe stricken and solemn when we gaze on the great mountains as they rear their everlasting heads, or on the boundless voiceful ocean, or contemplate the immense expanse of the starry sky studded with suns and systems and seek thus to penetrate the secrets of the mighty universe. We go to those great and sublime works of creation expecting or prepared to be deeply impressed. We have no such preparation of mind or heart when we first come to consider the small things of the earth, yet when we pursue our thoughts and investigations but a little way we are amazed at the vastness of the energy, the exactness of design and the immensity of results accomplished by beings that seem so little, and in many cases are so minute as to need the aid of science to bring them to the knowledge of our senses. The works and wisdom and power of man are set at naught by the little things of the earth which he affects to despise. Our railroads and steamships furnish excellent means of traveling around the world and we are apt to look with complacency on these works of human skill, but the tiny fly that buzzes about the window of our railway carriage, keeps up with 60 miles an hour—or lightning speed as we boastfully call it—without any exertion—not even causing an extra flap of its gauzy wing. Could we attain the rapid motion of other little creatures that dart about in the sunshine we might at one bound skip from the street to the top of the highest church spire, and the famous speed attained by Atlas in his seven-league boots would be no longer a fable and a myth, but might be far outdone. For the speed attained by the little boat-fly would enable us to circumnavigate the earth as rapidly as the suns rays do, and thus bask in eternal sunshine, travelling with the sun in his meridian splendor around and around the globe.

[We know of no insect movement so rapid as this would infer.—EDITORS PRESS.]

Other of the little things come forth, as it were, to mock the power of man and to show his helplessness to withstand their power and numbers. The locust, or, as we know them in the United States, grasshoppers, come in clouds so thick as to obscure the sun's rays, and spreading with the invincible power given by the union of vast numbers, they bring ruin alike to the lawns of the rich man and the gardens of the poor. They find the earth covered with luxuriant vegetation and leave it a blank waste, and vain is the power of the mightiest men to stay them. The emperor of Russia once sent an army of 30,000 men to fight the locust, and it was utterly unable to stay their progress. The termites, or white ants, attack the mightiest works of man, not merely of the savages of South Africa, but in enlightened France, where they had been imported, they destroyed building after building, and in one instance they ate up the records of a city and state, leaving only the empty covers of the books and cases of papers.

There are other little things that become terrible to man, and which are still more mysterious. The rust, the mildew, and the blight are among the smallest of earthly things; the wisest men cannot explain their nature and origin. The farmer sees his field of waving grain struck by rust, and what promised ample reward for his toil turned into a mass of worthless straw. The food of nations has been destroyed by blights, and hunger, disease and death have made sad havoc. Thus do those little things become terrible when God sees fit to call them forth in countless numbers. The man of science cannot account for them; the man of power cannot stay them; the man of faith can but say, it is the will of God.

Such little workers are also employed continually in rebuilding and remodeling the earth. The bottom of the sea is their burying ground; their dead bodies piled up rise to the surface and support islands and continents covered with vegetable and animal life; these have become the abodes of man, with cities, towns and villages. The South Sea islands are the results of the work of the corral insect—whole ranges of mountains are composed of the skeletons of creatures so small that we need the microscope to distinguish them. The city of Richmond is built on a species of flinty marl, the whole mass of which was once alive with creatures the one-thousandeth part of an inch in length.

The great desert of Sahara is covered with an ocean of fossil shells so small that millions could shelter in the hull of a grain of mustard seed.

From the care in the details in the arrangement of little things by the Great Architect of the Universe, we learn the importance of great care in the minute details of our great work of character building. The longest journey by the most rapid walker is made by taking just one step at a time. The strongest chain is composed of links, and if one link is defective, the chain is easily broken and rendered worthless. The basis of action is thought. "As a man thinks in his heart, so is he." Who can count the hundreds of thousands of thoughts that pass through one mind in a single day? A single drop of turbid water left to evaporate on the surface of glass leaves its stain; so each thought that passes over the crystal surface of mind leaves its impress there permanently. If good and pure, we are the better for it to all eternity; if foul, who can estimate the evil? Is it not the little things that make our social every-day life pleasant or miserable? Little acts of kindness, little words of encouragement, little helps from loving hands and hearts make life pleasant—earth worth living in. If we are not willing and ready to do the little things we find ready to our hands to do, how can we be assured that we will do great things should the opportunity be given us. A little puff at a little cigar may, in the end, make a man smell like a tobacco factory—his system poisoned with nicotine, and the taint transmitted to his offspring. Or worse still, a little glass, "just for good fellowship, you know," may lead to the dishonored drunkard's grave. A little evil thought indulged and harbored in the mind leads to myriads of others, till out of such a corrupt fountain nothing but evil can come. Therefore, in those little thoughts, little words and little acts that go to make the sum of a perfect man, let us avoid little evils; for if we keep out the little evils we never will have the big ones. Keep the heart pure and the life will be pure and fitted to enter into the rest at the close of life's task. May we then, each and all, hear the welcome sentence, "Well done, good and faithful servant!"

The Grangers and the College of Agriculture.

There was an informal meeting held last week at the State University for consultation concerning ways and means for pursuing the experimental work of the College of Agriculture. There were present President Reid, Secretary Bonte and Prof. Hilgard, of the University; J. V. Webster, Secretary of the State Grange; Amos Adams, Secretary of the Grangers' Business Association; I. C. Steele, Past Master of California State Grange; Hon. Thomas McConnell, of Sacramento county; Seneca Ewer, of St. Helena, Napa county, and Hon. Hugh M. Larue, of Sacramento.

After considerable time spent in the interchange of views, a resolution, offered by Mr. Adams, was adopted, providing that an appropriation of $15,000 should be urged upon the next legislature, for the purpose of establishing and maintaining a larger field of experimental work connected with and under the especial charge of the agricultural department of the University, and that Prof. Hilgard should prepare a statement for publication, setting forth the difficulties, necessities and wants of the Agricultural College, in order that agriculturists and all others concerned might have a clear conception of the subject, and that petitions be prepared and sent to the several sections of the State for signatures, praying the legislature to make the appropriation.

GRANGERS' BUSINESS ASSOCIATION.—On Saturday, May 6th, Bro. Amos Adams visited Port Costa, and in the name of the new corporation took possession of the Grangers' Business Association's warehouse at that place. The business of the association has gradually grown into a prosperous condition. Especially is this apparent since the building of the warehouse at Port Costa. Since its completion in October last, something more than 100,000 tons of grain has passed through it. Twenty-four large ships have been loaded at its wharves, not including several small crafts. There are some 5,000 tons of grain still remaining in the warehouse, most of which will likely be shipped before the incoming crop. The matter of increasing the facilities of the warehouse has been discussed in the board of directors, and the disposition is to increase its capacity, if the crop yield will warrant the undertaking.—*Patron.*

DATES.—The meeting of Temescal Grange on Saturday, May 20th, will be interesting. At two o'clock an "open meeting" will be declared, and all invited to hear the reading of Bro. Klee's paper on "Dates and Date Growing." We are aware that Bro. Klee has given much time to researches in this subject, and his results will be worth hearing.

REUNIONS.—Point of Timber Grange will hold a reunion with exercises of a most interesting character on Wednesday, May 24th. Danville Grange, as stated elsewhere, will have a union meeting on Saturday, May 27th. W. M. Daniel Flint will attend both meetings.

DANVILLE GRANGE MEETING.—Miss Deming writes us that she was misinformed concerning the date of the Danville meeting mentioned in her letter last week. The correct date is May 27th, not May 20th, as stated. We trust all adjacent Patrons will note the correct date.

IN the House a bill of consequence to farmers, particularly in the West, was passed, protecting innocent purchasers of patents from wrongs that are now perpetrated upon them. Salesmen have made a regular business of going through the country selling patented inventions, and owners of the patents follow them, collecting royalties under threat of suits in the United States Courts for the use of the inventions.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA.

CROPS.—Washington Corners *Reporter*, May 13: The outlook for crops in Alameda county is good, although, taken as a whole, scarcely an average. In Livermore valley and in the bay district grain promises well. The fruit crop will be abundant, notwithstanding that in different places certain kinds were injured to some degree by frost. The drying winds of the first of this week, which did much damage through a large portion of this State, had no appreciable effect here. The cooler weather which has followed is favorable. Hay making is progressing. The good prices probably to be obtained for grain this season will make the crop more profitable than when the yield is unusually large, but with prices low.

CONTRA COSTA.

FAVORABLE CHANGE.—*Gazette*, May 13: The favorable change of wind, temperature, and increase of humidity that came in Tuesday evening cannot but have a vivifying effect upon grain and other vegetation that had not quite succumbed to the desiccating influence of the hot northerly winds of the previous ten days, which undoubtedly have shortened the grain crops of the State from 25 to 50% on the previous expectation. The crops in many sections of our county suffered greatly; and much of the grain now being cut for hay will make but poor fodder. That which was not blighted to the quick, however, now will have a chance of reviving, and it will be found that the ground still holds a sufficient store of moisture to mature grain that the northers left looking very unpromisingly, if the present cool and moisture-laden breezes continue for the greater part of two or three weeks.

AGRICULTURAL SOCIETY.—At the annual meeting of the County Agricultural Society, held May 6th, at the Pacheco Odd Fellows' hall, William Caven was elected President; J. E. Durham and J. H. Olive, Vice-Presidents; Vincent Hook, Secretary; G. M. Bryant, Treasurer; P. McCargar and B. J. Murphy, Directors. M. Gregory, C. B. Porter and Nathaniel Jones were appointed a committee to visit and report upon farms and orchards and vineyards entered in competition for the society's premiums, prior to the 1st of July next.

DRY.—Antioch *Ledger:* During the past week the weather has been very warm, with hot, drying north winds, that have almost entirely destroyed the prospects for a crop in this vicinity. A gentleman who has been over the ground informed us Thursday that he did not believe there would be as much grain raised this season between Bay Point and Tracy as was put into the ground this year. Fields that two weeks ago looked favorable for at least a small crop, will now hardly make hay, which is being cut very fast. The grass has all dried up, and feed will soon be scarce. Similar reports come from other sections of the State, and it is now evident that the entire crop will be rather short.

FRESNO.

WINDBREAKS.—*Expositor:* It has been found advantageous by the farmers of this county to plant windbreaks about their premises, and especially around their orchards and vineyards. In most instances poplars and trees of a similar character have been used, because they make a quick growth, and are inexpensive. But objection has always been raised against the poplar, because it has no value but as a windbreak, and because it is a great harbor for insects, and especially borers. I. H. Thomas, of Visalia, has devoted considerable attention to this matter, and suggests that it would be far better to plant almond trees for the purpose. The almond is a rapid grower, and makes a beautiful tree. It is the first tree to put forth its leaves in the spring and is about the last to shed them in the fall. When in bloom there is nothing that excels it in beauty. While the almond tree cannot be relied on every season for a crop of nuts, by a judicious selection of varieties, frequent crops of nuts will be obtained, and a handsome return thus secured. He recommends the planting of the Harriott almonds as being the most fruitful. He says to plant the trees about the usual distance apart for windbreaks, and never prune them at all. In a short time you will be rewarded with a solid wall of living green. To us the suggestion appears a good one, and worthy of the careful consideration of the Fresno county farmers.

LOS ANGELES.

CROPS.—*Times:* While there will be some little disappointment about the grain crop, yet it will average well with former years, and may go beyond the average. The wheat and barley from San Gabriel to Spadra could not look better; in fine, the whole San Jose ranch will have a bountiful harvest. Particularly is this so about Azusa. The Baldwin ranch also looks finely. Around Compton the grain crops are good, especially the 250 acres of Mr. Flood. Teed Bros., of the San Jose ranch, have 400 acres of as fine barley as ever grew. The grain crops at Ranchito are in splendid condition. Particularly from every quarter comes good news of growing condition of the corn crop. Haying is now in full blast, and large quantities of the best quality are being cut, and horse and cow feed will be plenty. Taken as a whole, while all the farmers will not rake in a bonanza this year, and while a few may catch a bor-

rasco, yet the amount of gold that California will get this season from agricultural sources will be more than she will take from her mines.

HONEY. — *Express:* Whatever misgivings others may have, the bee men continue to look confidantly at the honey prospect for the season. The present warm weather is regarded as especially beneficial after so much cold, and the quality of the honey is pronounced better than usual at this time of the year.

MAMMOTH STRAWBERRIES.—*Express:* Wm. C. Thompson brought us a box of strawberries yesterday from Geo. R. Hinde's gardens, at Placentia, five miles from Anaheim, that surpass anything we ever saw for size and delicious taste. There were two varieties in the box—one, the Forest Rose, a most toothsome berry, large and pear-shaped. The other is called the Sharpless Seedling, and is a most astonishing production. It is fan-shaped, and resembles in general custom the foot of an elephant. It is sweet, fine-flavored, and the flesh is melting and luscious. But the size to which the berry attains is prodigious. Some of those in our box measured three inches across, and Mr. Thompson says that there was one picked from the vine which measured 11 inches in circumference. One hardly realizes that these berries belong to the strawberry family, they are so abnormally large. Mr. Hinde's vegetarian gardens are turning out all kinds of fruit, and he has signalized himself in figs, peaches and various kinds of nuts, but these strawberries take the prize, both for their wonderful proportions and for the eqxuisiteness of their flavor.

MONTEREY.

AGRICULTURAL SOCIETY.—*Index,* May 13: The Board of Directors of the Monterey Agricultural Society met in the Salinas City bank, at one P. M. last Monday. Present: Carr, Sherwood, Hebbron, McGarvey, Warden, Flint, Ball. J. W. Leigh acted as Secretary. It was decided to hold the next fair at Salinas City, from the 10th to the 14th of October inclusive. Committees were appointed as follows: On Speed Programme—Warden, Dean, McGarvey, Hebbron, and Ball. Executive Committee—Sherwood, McGarvey, Hebbron, Flint and Ball. Committee on Ways and Means—P. Kilburn, A. B. Jackson, M. Hughes, J. H. McDougall, Wm. Vanderhurst, P. Iverson, B. V. Sargent, Wm. Connor, Fred. Birlem, P. F. Dean, C. J. Russell, H. W. Warden, L. M. Ladd, J. D. Clause, J. M. Pomber, A. Widemon, G. S. Brown, Wm. Beck, W. H. Taylor, Manuel Wolter. Committee on Pavilion—Sherwood, McGarvey, Flint, with power to appoint a clerk. Committee on Premium List—McGarvey, Sherwood and Hebbron.

SAN LUIS OBISPO.

ESTRELLA PLAINS.—Cor. *Tribune:* Opinion of farmers is divided regarding the probable yield of grain this season; the result as compared with that of last year is, at this writing, hard to predict. On lands well summer-fallowed no deterioration is expected, but grain sown on winter cultivated lands is in many cases a failure, owing to the long-delayed rainfall not coming in time to save the seed previously sown and partly germinated from decomposition. The north winds recently prevailing have been a serious drawback to the healthy growth of the grain. Shearing is about over, with rather a light clip, but in many cases a fine grade of wool. McDonald Bros', clip is of more than average quality and quantity. Their bands are in excellent condition, considering the backward tendency of the season. While the losses are considerable, especially in some of the less favored districts, the mortality among sheep this season is much less than at first supposed. Lambs, however, have had a terrible struggle for existence, and the increase will be very light throughout. The grades of sheep in this county are improving year by year, and new and improved blood constantly being added to the flocks will in a few years tell greatly in the aggregate production and export of wool, besides increasing the value per head of all those flocks that are thus advanced to the higher and more perfect grade.

SANTA CLARA.

ORCHARD LAND.—San Jose *Herald,* May 9: Few people, except the dealers in real estate, are, perhaps, aware that there is just now a great demand for orchard and vineyard land, with the probability that buyers will multiply and prices advance before the season is over. Land that last fall could be bought for $100 an acre is now held at double that amount, and owners do not seem to be in a hurry to sell even at those advanced figures. A ranch about three miles southwest of San Jose was offered last fall in lots at $80 per acre, and the owner has just refused $150. So it goes on all around, although the district west and south-west of the city is more popular than the rest, on account of its superior fitness for orchards or vineyards.

SONOMA.

OLEOMARGARINE.—E. H. Cheney, in Petaluma *Argus,* May 5: It is publicly known that some time ago, dealers in Santa Rosa sent to San Francisco for butter and got oleomargarine in rolls and sold it as butter, not knowing it to be such, until it was proven to them that it was not genuine butter. I believe that retailers have, to a great extent, been guilty of selling the stuff as butter, although some claim that at first they bought it for butter. Now I was told by a commission merchant, that he knew of a retailer in the city that bought 40 firkins of oleomargarine and sold it as butter, and if it was known among his customers it would have ruined him in his business. As regards myself, I have no personal knowledge of the matter—have never seen the article called oleomargarine or butterine—nor do the dairymen claim that the stuff at present is sold to any extent, unless the article of Eastern butter now sold at such low prices may be such. I have before me the Chicago *Inter-Ocean* of April 13th, in which butter is quoted: creamary grades, 35 to 37½ cents; dairies, 33 to 35 cents; ordinary, 20 to 25 cents; stale and rancid, 13 cents. These are wholesale rates in that market. San Francisco papers, April 21st, quote Eastern butter at 17 to 20 cents. Now if this butter is genuine dairy butter, it must have been bought considerably less than the quoted rates for the last six months for ordinary grades of butter, to sell it at present quoted rates in San Francisco, at a profit. The action of Bodega dairymen only applies to the future. All we ask is fair play. We expect that imitation butter will be made, and concede to anyone the right to buy it and eat it if they wish. But we protest against it being branded and sold as butter. It is a fraud upon the consumer as well as the producer of the genuine article. Let each stand upon its own merits, and be sold for what it really is, and if manufacturers can make a better article out of grease than we can from cream, we will throw up the sponge, acknowledge ourselves beat, turn our cows into beef and retire from the business.

FORESTVILLE.—Cor. Healdsburg *Enterprise:* The crops in this vicinity are looking splendid, and promise an abundant harvest. The recent rains were just what was needed, and the farmers' faces are wreathed with smiles. The grape mania rages here as elsewhere. From present indications most of the tillable land will soon be set with grapevines.

SAN DIEGO.

STRAWBERRY GROWING.—F. Atkinson, National City, in Riverside *Press:* Having eaten strawberries with more grit on them than is pleasant, I wish to give you my plan of raising strawberries. I plow the ground well and make it mellow and level, then lay it off in beds four ft. wide, leaving a furrow between each bed. The plants should be set in rows one ft. each way. I set the plants in the fall with a dibble or any sharp stick like a piece of an old shovel handle, making a hole deep enough to let the plant in up to its leaves; pour in a dipper of water and press the dirt around the plant; after the plants have started, I cover the beds with wheat or barley chaff to the depth of three inches, lifting the leaves up out of the chaff. The winter rains pack the chaff nicely before dry weather comes on; the chaff not only prevents weeds from growing but keeps the ground moist and prevents the runners from taking root until needed. I cut the runners by using a case knife tied to a stick. By walking up one furrow and down the other you can cut them off very rapidly; after the second year the chaff can be raked off into the trenches and burnt; the runners will then take root ready for a new crop of plants to re-stock the beds with. The chaff keeps the berries from lying on the ground, which not only makes them taste of the earth but causes them to be gritty. They will ripen faster and will be much sweeter by lying on clean chaff than on the ground. The trenches being just wide enough for one to walk in and pick the berries without tramping on them by picking up one side and down the other it is very convenient. I have raised berries in this way for many years and prefer it to any other. The trenches can be used to irrigate the beds with.

STANISLAUS.

OUTLOOK.—*Herald,* May 11: We have interviewed farmers from all parts of the county during the past few days, and are capable of giving the result of the ten days' hot and windy weather on the growing crops. In the first place, nearly all the green feed is killed. Many of the wheat fields are changed from a dark green and thrifty look to one of advancing maturity. This is particularly so with the late-sown grain in the neighborhood of Modesto, on either side of the railroad. From a line east and west, five or six miles east of Modesto, and to the foothills, the grain looks better. Summer-fallowed land, while the wheat is somewhat affected, will produce a fair crop, but the general impression is that the winter-sown will not produce one half as much as was anticipated two weeks ago. The terrible norther held on for six days, amounting to a regular sand storm Friday, Saturday, Sunday and Monday. There was not sufficient moisture in the ground to resist the drying process, hence the above result.

SUTTER.

CROPS.—*Farmer,* May 12: Having visited different portions of the county during the last few weeks we are enabled to give our readers a more definite idea of the crops. As heretofore remarked in these columns, the acreage in grain exceeds that of any previous year in the history of the county. The reason of this has also been repeatedly explained, but may be repeated here for the benefit of our readers residing abroad. It is well remembered that the larger portion of our county was flooded in February, 1881, which destroyed at least three-fourths of the crop. Being too late to be re-sown, all such lands were turned over in fallow. When seeding time came, all such lands were soon put in, there being nothing to do but to sow and harrow. The winter rains came in seasonable quantities to permit our farmers to plow and sow all winter, or until nearly every foot of land was seeded to grain of some kind. But few of our farmers left much of any land for fallow this spring, and we know of farms of 500 to 1,000 acres with not an acre that is not in grain. Another reason for the enlarged acreage, is in the fact that the Live Oak country is only just cleared of brush and brought under cultivation. The low lands along the tules are also largely sown to wheat, owing to the absence of floods. From these reasons it is safe to say there are more acres under cultivation in Sutter county this year than ever before. Now, as to the prospective yield, it is our judgment that present appearances indicate a full average crop in the aggregate. By this we do not mean to say that the crop can be compared to that of 1880. That year the crop was extraordinary. Then the stand was uniformly good, and in many fields the winter-sown was as good as the summer-fallow. This year we find many fields of summer-fallow very thin on the ground; in fact, so thin as to make it impossible for the few heads, however large they may be, to compensate for the absent ones. Of course, where there is so much summer-fallow, very many fields of splendid prospects are met with. This is nowhere more pronounced than on the adobe farms of Sutter and Butte counties. Winter-sown wheat is various in appearance, and may be said to indicate a yield of from 10 to 20 bushels per acre. Barley is now "in head" and may be guessed at from 25 to 40 bushels to the acre. The fruit crop promises to be larger than any previous year. Tree planting has received impetus the past season never before experienced in these parts. Take it all in all, we may congratulate our farmers on the present outlook. If some fields are not as good as we might wish, let us remember that this has always happened the best of seasons. Such years as 1880 may come but once in a lifetime.

SANTA CRUZ.

FROST.—EDS. PRESS: We had a hard freeze this morning, which I think has killed all the plums; it has mine at least.—B. D. H., Watsonville.

PAJARO FRUIT.—Watsonville *Pajaronian:* The fruit crop this year in the Pajaro valley will, from present indications, be unusually large. Strawberries are just coming in, being later than usual, but the crop will be very large. The Santa Clara crop is short, hence Pajaro strawberries will, undoubtedly, bring good prices in the city, and most of the crop will be sent there. A larger crop of apricots, and they are fair-sized, too, was never seen in the valley. The trees are really loaded. Apples and peaches and small fruits, other than strawberries, promise well, while the cherry crop will be immensely immense.

SAN BENITO.

DANGER.—San Juan Cor. Hollister *Democrat,* May 12: Warm weather has prevailed here during the past week, accompanied with winds in the afternoon, and, though the crops in this section still present a favorable appearance, yet a fear is expected by many that it would require but a short continuance of such weather to blast the prospects which a short time since appeared for a fine cereal yield.

HAY.—*Advance,* May 12: In view of the almost entire failure of the wild-oat crop in this county, as in many other of the hay districts of the State, many of our farmers will cut much of their wheat for hay. This seems to be a good plan; especially so when it is considered that the weather of late has been very unfavorable to the growth of wheat; in fact, in many instances, farmers will be compelled to cut their grain for hay.

TULARE.

EDITORS PRESS:—Tulare county has been suffering greatly the past three or four weeks on account of the dry weather which, in connection with the north winds, has so far dried out the land that there will be very little grain raised—probably not enough to seed the same acreage for another year. Great trouble prevails over the management of the Mussel Slough ditch, in which two men have been shot (May 10th). Business prospects are fair considering the dry year.—C. M., Hanford, May 10, 1882.

YOLO.

WHEAT IN DRILLS.—*Democrat:* We have now in our office an elegant sample of white wheat that was raised by Mr. C. A. Young, near Blacks' station, in this county. It is the Nonpariel variety, a fine, large, plump berry, and entirely free from foul stuff of any kind. It was raised last season—drilled in March 1, 1881. We invite our friends to call and see this wheat. In conversation with Mr. Young we ascertained that he drills in all his wheat, and has done so for years, both summer-fallow and winter grain. By this system there is a saving of about one-half of the seed, which will pay for the additional time required over sowing broadcast with a machine sower. Besides this, the grain is well covered up, so that it becomes stronger and more deeply rooted. In addition to this, it stands the drouth much better, and also gets the benefit of rains to a greater extent, as the rain finds its way into the little furrows left by the drill directly to the seed sown. But besides all this, Mr. Young says he gets larger heads, less straw and consequently more wheat and of better quality.

IT is stated that a marriage has been arranged between Princess Beatrice, Queen Victoria's youngest daughter, and Prince Frederick William, the eldest son of the Landgrave of Hesse.

News in Brief.

MORE white men are engaged in mining in Nevada county now than for many years.

MARK SHELDON, the well-known Sewing Machine agent, has removed to 9 and 11 First Street.

SHIPMENTS of tea from Calcutta to America and Australia the present year will be probably 2,000,000 pounds.

SHIPMENTS of tea to America and Australia the present year will be probably 20,000,000 lbs.

THE total value of exports of domestic breadstuffs from the United States for the 10 months ending April 30, 1882, was $157,546,121.

NEW ORLEANS is now fighting for a uniform horse-car fare of five cents. San Francisco made a similar fight and won years ago.

ON the Clark's Fork division of the Northern Pacific there are 3,450 men engaged in grading the road-bed. Of these, 2,800 are Chinamen.

THE Senate has passed a bill to enable California to take lands on the line of the 16th and 36th sections when found to be mineral lands.

THE past four months show that the imports of France have increased 78,000,000 francs, and exports 133,000,000 francs, chiefly in manufactures.

THE London Amateur Rowing Association has announced that its object is for representative British crews to compete with foreign and colonial crews.

THE land sales of the Northern Pacific railroad company last month amounted to $503,863, an increase of $444,547 over the same month of the previous year.

THE smallpox is reported raging among the reds in Montana, and is spreading on the Canadian side. The commissioner at Winnipeg, has sent out a large supply of vaccine virus.

THE House Committee on Naval Affairs will make an effort to pass, under a suspension of the rules, the bill to provide a permanent construction fund for the navy, by the sale of unserviceable supplies and vessels.

AN Austrian physician, who visited the Jews in the hospital at Odessa, states that there are 125 horribly mutilated persons there, the Russians having poured petroleum into their wounds.

THE Arizona *Citizen* says that a Tombstone man lately bought a ranch in Cochise county for $200, which, if it were not for the cowboy difficulties, would be worth anywhere from $5,000 to $10,000.

THE first passenger train from Kansas City to Denver, by the Atchison, Topeka and Rio Grande roads, arrived Sunday. This gives Denver another through standard gauge to the Missouri river without change.

RAILS are being laid on the Northern Pacific railroad at the rate of a mile to a mile and a quarter a day, and the road is already completed to the mouth of Froze-to-death creek, about 85 miles west of Miles City.

THE Colusa *Sun* reads the farmers of Colusa county a lesson, and points out to them that if they had a few acres of their ranches laid out in fruit trees and vineyards they would not be so bad off now that the wheat crop is a failure.

A SPACIOUS pleasure pavilion is being built on Telegraph hill, adjoining Pioneer park, on the north side of the hill, a site accessible only to pedestrians. The base, or first story of the building, is nearly square, 55 ft. long by 60 ft. wide. The second story is octagon-shaped, surmounted by an observatory for sight-seers.

IT is reported at Port Townsend that work will begin within the next two months on a 50-ton furnace, to be built near where the present structure now stands at Irondale. Also, that the old furnace will probably be fixed up, and both combined will have a capacity for turning out nearly 60 tons of first-class iron every 24 hours.

THE Central Pacific railroad company is pushing forward work on the 36-mile section of railroad from Willows to Tehama. This will give farmers west of the Sacramento a channel for transporting their produce direct to the bay, via, Benicia. The work of construction on the northern line from Redding is being energetically pushed forward.

THE logging business on the Skagit, W. T., is assuming vast proportions. The amount of logs on hand along the river at the opening of the season was about 10,000,000 ft. There are now about 20 camps in active operation along the Skagit, the owners or managers of which have organized a company for the booming and corraling of the logs in the river.

AN oak tree was recently cut down on a ranch near Newville, in Colusa county, that measured seven ft. and four inches through at the stump. There was cut and split 400 posts 7½ ft. long, and 75 cords, two tiers to the cord, of 20-inch wood out of it. One man worked 42 days continuously, and two men 10 days. The posts are worth 20 cents apiece, and the wood $2 per cord. It therefore paid $230.

COL. CHAMBERS SCOTT, who has been collecting information with reference to the proposed terminal port, near Point Lobos, in the Gulf of California, has returned to San Francisco, and will be occupied for the next two or three weeks in preparing his report. The railroad company desire to employ white laborers in the construction of their line, and will give free transportation to all who desire employment to Mohave station. Track-layers, graders, teamsters and laborers are wanted. Applications should be made at the offices of the Central Pacific R. R. Co.

Longfellow's Last Poem.

The *Atlantic* for May contains the last poem which Mr. Longfellow wrote, the revised proofs of which were read by him but a few days before his death. The poem is entitled "Mad River, in the White Mountains," and represents a colloquy between the traveler and the river, the traveler seeking to learn the river's song, and to know the reason for its hurry. The traveler asks:

Why dost thou wildly rush and roar,
Mad river, O Mad river?
Wilt thou not pause and cease to pour
Thy hurrying, headlong waters o'er
This rocky shelf forever?

What secret trouble stirs thy breast?
Why all this fret and flurry?
Dost thou not know that what is best
In this too restless world is rest
From overwork and worry?

The river's answer is thus expressed:

A brooklet nameless and unknown
Was I at first, resembling
A little child, that all alone
Comes venturing down the stairs of stone,
Irresolute and trembling.

Later, by wayward fancies led,
For the wide world I panted;
Out of the forest dark and dread
Across the open fields I fled,
Like one pursued and haunted

I tossed my arms, I sang aloud,
My voice exultant blending
With thunder from the passing cloud,
The wind, the forest bent and bowed,
The rush of rain descending.

I heard the distant ocean call,
Imploring and entreating;
Drawn onward o'er this rocky wall
I plunged, and the loud waterfall
Made answer to the greeting.

And now, beset with many ills,
A toilsome life I follow;
Compelled to carry from the hills
These logs to the impatient mills
Below there in the hollow.

Yet something ever cheers and charms
The rudeness of my labors;
Daily I water with these arms
The cattle of a hundred farms,
And have the birds for neighbors

Men call me Mad, and well they may,
When full of rage and trouble,
I burst my banks of sand and clay
And sweep their wooden bridge away,
Like withered reeds or stubble.

Now go and write thy little rhyme,
As of thine own creating,
Thou seest the day is past its prime;
I can no longer waste my time;
The mills are tired of waiting.

Compensation.

"Ach, I have no letter from home!"

We were sitting, Herr Schenning and I, in the shade of some redwoods, far up in the mountain side, having strayed a little from our own band of picnicers. The trees, scarce moving in the light breeze, dropped their long shadows down the grassy slope, where, in the sunny places, the yellow butterflies flitted in and out among the purple lilies. The madronas spread their broad and shining leaves to the sun, delighting in its fervent heat, and making cool shades where the deer might rest when there were no picnician revels to desecrate their solitude. Through our sympathy with this beautiful spirit of solitude there had fallen upon us a long silence.

"What news have you from home?" I asked Herr Schenning at last, merely by way of saying something.

Without the movement of a muscle to show that he had heard me, he continued to gaze at the mountains, or rather far beyond them, to some white clouds slowly sailing through the blue. I was about to repeat my question, but paused, seeing the color deepen on his dark German face, and presently, with a great sob, as the flood-gates burst, came the cry:

"Ach, I have no letter from home!"

He buried his face in his hands, and, with dismay, I saw the swift-falling tears slip through his fingers, but the storm was as brief as it was intense. Herr Schenning was not one to give way to maudlin grief.

"You must think I am a glittering idiot," he said, as he laughingly shook the last tears from his fingers.

"No," I answered; "I think you are homesick, and I know the misery of that malady."

"Yes; in fact, I had a sudden and overpowering attack of it. Your question was a drop added to my heart's full cup. That tree (pointing to a fir tree that towered to the sky, with its great wavering and whispering boughs, had borne me far through yonder calm sky to the Fatherland. I was a boy again, and had strayed to my favorite fir tree at the edge of the forest; rocked in its branches, I heard the wild songs of the woodland; I saw the silver gleaming of Murg flowing down the Rhine; I saw the blooming orchards, the bird-haunted grove, and the little white house of Blumenwald. The fragrance of its flower garden came to me across the meadow, and I knew who walked there, wearing in her golden hair the blue flowers that I loved—my little Barbara. I cannot remember the time when I did not love her and think of her as mine. For her, I studied and struggled, and won my school-day prizes; for her, I sought to make myself wise and honored; for her sake, who had no gold for her dower, only her sweet self, more precious to me than all the gold of California—Heaven knows how precious, I thought, to be degraded by the slavery of our old-world life of poverty—for her dear sake I put aside her little clinging hands and kissed her pleading mouth, and came away to this great golden land of America. I, so wise with my Latin and Greek, so skillful in metaphysics, so deep in all the subtle science of the old-world's savants, came to California to make my fortune. I laugh to think how I have groped and stumbled in the broad bewildering light of this splendid young world, while those who can scarcely write the plebeian names they bear, dig into the mysterious earth and lift their hands glittering with treasure. At home, I might have walked with princes. Here, poor, ill-clad—shall I say it?—sometimes weak with hunger, I wander uncared for, except when some gentle heart like yours brings me, for pity of my loneliness, into a pleasant day like this. But forgive me for showing you such a broken spirit."

"Broken! Oh, dear!" I exclaimed, struggling wildly with my tears. "I should think it would be like that of Mrs. Plovinst's father—pulverized; crushed quite out of you. Herr Schenning," I added abruptly, "why don't you put your pride in your pocket and go home?"

He laughed.

"Alas, my pockets are too small, and besides, it would not be accepted for fare. No, I have committed suicide; I have no place, there or here. If I should one day slip from these sun-loved hights into some black abyss, where even the starlight fails, I should not be missed."

"What!" I said, "not even by little Barbara, who is waiting for you in her Blumenwald?"

"Heaven!" he cried, in another excess of despair, "there is no one waiting for me! Think you such a fool, such a beggar as I should be worth that? No, the father was right; he did well to marry her to Herr Heimsteher, whose broad orchards stretch to the verge of our loved forest. Frau Barbara is rich, I trust, and happy, with her fair-haired children clustering at her knee. If she ever thinks of the lover who left her so long ago, it is to smile at the airy-like future he promised her, though I dare to hope that sometimes, when the voice of my fir tree comes to her through the twilight, or when she plucks those blue flowers from her garden, she will remember me with a little throb of the old love. God bless her—and pity a poor wretch like me!"

The fir tree waved its long arms in the freshening breeze; the shadows crept up from the gorges and spread along the hillsides, as if seeking him who had spoken of their dark retreats; the bold outline of the Palisades showed stern and frowning against the sky, but the face of St. Helena, grand and sweet, lay smiling toward the west, waiting for the sunset glory and the solemn starlit night.

How it could have happened to the ever-splendid Ulrich and myself to lose our way, I cannot imagine, but we achieved that brilliant feat. Driving quite by ourselves in the rear of the small picnicing procession, we fell into farther talk of California ways. I was trying to impress Meinherr with the fact that he was too young to call his life a failure; that no one, at any age, in California, need despair, unless he lay down like a coward and let the crowd rush over him; that he must fight, and keep on fighting; that so often as he was thrown, so to speak, he must get up and rush at it again; that just as sure as fate there was a competence, if not a fortune, for every brave man here. Then I repeated my well-tried motto, "For every woe there is some compensation"—and just then we discovered that we were out of sight of our companions. Herr Schenning touched the horse, and we sped over the road at a pace that promised to soon bring us up with them; but, to our surprise, we neither saw nor heard them. The way began to seem strange. Herr Schenning adjusted his spectacles and took a survey of the surroundings.

"It is altogether the wrong way," he said, "but if we make haste backward we may reach home before it is very late."

My heart sank a little, for the way over which we had come was particularly mountainous. There were places which I hardly cared to pass after dark, and Herr Schenning, with his short sight, was, as he himself said, "not a pretty good driver." And how they would laugh at us! However, there was nothing for it but to retrace our way as swiftly as possible. Our conversation drooped somewhat; we both seemed to have a good deal of thinking that would not bear putting into words, although we made a brave joke, now and then, to keep up the illusion of not caring.

"But you are getting chilled," said Herr Schenning, anxiously.

I was, indeed, shivering in the cold night wind that came rushing down the canyons.

"Will you please to put on my coat?" he implored, in comical distress.

I stood but a moment upon ceremony, then allowed him to wrap the warm garment about me.

"Now," I said, laughing, "if you contract an acute bronchitis through your gallantry, I shall take you home and take care of you."

"Thank you," he answered, fervently. "To be taken home and taken care of seems to me, just now, to be the greatest good. If you would kindly conduct me to some asylum for the 'imbecilious,' I should be forever grateful. What compensation, think you, can there be for our present woes?"

"Let us await developments," I replied, with, I confess, a sort of tremor in my faith.

I looked at the frowning cliffs and glanced at the yawning gulfs below. The sun had set long since—the night was deepening. I felt all courage fading. I did not care now "what they thought." I wanted to be out of the terror of this way, safe under some roof.

"Herr Schenning, do you remember that snug ranch we so much admired as we came along this way?"

"Yes, we must be near it, and there indeed is the light from the little house."

We soon reached the gate. The moon at that moment rose grandly above the mountains, and poured her radiance down upon the cottage with its clustering outbuildings, its embowering shrubs and trees, the orchards and vineyards stretching far along the hillside. The fragrance of the mignonette and roses came down from the garden like old friends to welcome us.

"How lovely!" I exclaimed involuntarily.

"It is a little Blumenwald," said Herr Schenning, with a tremble in his voice.

Our first greeting came from the porch, a cloud of smoke from a generous pipe, and from its neighborhood came an unmistakable German voice, making an answer to Herr Schenning's salutation. A rapid conversation in their own language seemed to put us in the right light, for our host ushered us cordially within the cottage.

"I dinks you must be quite shilly," he said, placing a chair for me near the hearth, where a pleasant fire added its glow to the hospitality of the kindly voice. "It is zo cold auf der mountains; it is petter you taste dis vine. Mein frau will pooty quick come; she is mit der shildren. Ach, she is come," he added, as a fair-haired, rosy young matron entered. "Katrina, dese pe zome young people vat got lost from a pignig."

"Ach, zo!" exclaimed Katrina, compassionately looking at us, as if she thought we might be the veritable Babes in the Wood grown up. At that, and the touch of womanly sympathy in her look and tone, I burst into hysterical weeping. Her arms were about me in a moment; and what with her droll English, her humorous expressions and comforting assurances, I soon recovered my composure, and glanced at Herr Schenning to see how it was with him. Pale, and with lips tensely set, he was gazing at Katrina as if intent upon penetrating some mystery.

Katrina, in her enthusiasm, was running about the room, and putting supper on the table, quite ignoring the fact that we belonged to a picnic. Taking up a book that lay upon a table beside me, I started at reading the name, "Frau Heimsteher," and gave Katrina such a look that she came to see what was on the page.

"Ach, yes; that is pring me from Germany by mein sister. She comes pooty soon. She makes asleep mein kleine mann, mein leetle Ulrich, what she gave him de name. It is," she added, confidentially, "de name of von she lofe long, long ago. He is dead now—poor Ulrich. Ach, what a peety! So nice he vas, so vise, and she zo much lofe him! She vill never get married to any odder von. Ach, no!" said Katrina, pensively returning to give another touch to the neatly-spread table.

Herr Schenning sat with bowed head, his face hidden. I heard soft footsteps approaching, and a faint odor of violets came through the door. I looked. There in the doorway, with the little Ulrich slipping from her arms and clinging to her dress, stood a golden-headed woman, fair and sweet as any pictured Marguerite, although a little past the time of blooming youth. She looked beyond me, her blue eyes slowly dilating, to Herr Schenning, who had risen and was gazing at her as if spell-bound by an angelic vision. Her sweet face flushed like any rose, till, with an ineffable smile and cry of joy, she reached out her arms to him.

"Ulrich!"

"Barbara, liebling!"

* * * * * * *

When, some months after this, Herr Schenning had taken out citizen's papers, and, with his little frau, settled upon some Government land adjoining Herr Heimsteher—who, after all, hadn't stayed at home, and hadn't married Barbara—and, as a climax, discovered upon his ranch a gold mine that promised to pay for working, I asked him what he thought of the law of compensation.

"It is divine!" he answered fervently.

MOSQUITOES AS DISEASE CARRIERS.—The discovery that mosquitoes carry filaria in their probosces and infect the human subject with that much-dreaded worm parasite, has attracted considerable attention among English microscopists. Particulars of various cases are given, in which it is proved that those suffering from filaria had received the contagion from mosquitoes, and the latter have themselves been found infected with filaria. The latter are very minute worm-like parasites, which, on entering the human body, breed until they increase to countless numbers. They are also said to have the power of entering and leaving the body at pleasure—usually invading the circulation in the evening, increasing till midnight, and then retiring to other parts of the system.

Probate Confiscation.

The complaint is general, and not wholly without cause, that the estates of deceased persons are to a great extent absorbed in the costs and attorney fees attending their settlement. The father or the mother owning real estate dies intestate, leaving minor children, and, not only is it necessary that the estate of the deceased be probated, but the estate going under the operation of the law to the children must needs be kept in court through their entire minority, and often at such cost to the estate that little remains for distribution.

As most persons know that this result can to a great extent be avoided by making a will, I suppose no one who reads this and has anything to devise expects to neglect this important duty; but as he or she is not expecting to "shuffle off this mortal coil" just yet, the matter is likely to be postponed until too late. The title to the real estate is generally in the husband, who as generally neglects the matter of making a will, and the widowed wife is for years compelled to consult the probate judge as to how she shall educate and how clothe her children, and render consecutive accounts of every item of expenditure in their behalf, and pay large fees for the inestimable privilege.

This is not according to the desire of the deceased, but rather the result of a pernicious custom and gross carelessness.

The title to real estate acquired during marriage should, as a rule, be placed in the husband and the wife jointly, and each should make a will, leaving all of his or her property to the other and dispense with the necessity of any bond. Very few husbands and fathers desire, in case of their death, the nurture and education of their children placed in the hands, substantially, of others than the mother, and yet, as above indicated, this is generally the operation of the law as applied to the custom of putting the titles to real estate in the husband's name, and failing to invest the wife and mother with the titles by will.

The following form of a will, sufficient for the purposes suggested, is submitted as simple, plain, and concise, and in the hope that it may induce many to act, who have hitherto been content with good intentions.

The last will and testament of ——— ———.
In the name of God, Amen.

I, ——— ———, now residing at ———, do declare this to be my last will and testament: That, after the payment of my debts, if any, and funeral expenses, all my property and estate, of whatever sort or description and wheresoever situated, shall go and belong to my beloved husband (or wife, as the case may be) ——— ———, to have and to hold unto my said husband (wife) heirs and assigns forever. And I appoint my said husband (wife) to be executor of this my last will and testament, and request that —— be not required to give any bond as such executor, the necessity of security being given being hereby waived.

Witness my hand and seal this - ---- day of ———, 188-

{L. S.}

The foregoing was signed and sealed by the said ——— ———, in our presence, and we, in his (her) presence, at his (her) request, and in the presence of each other, sign hereto as witnesses,

——— ———,
——— ———.

—*Inter-Ocean.*

Comments.

Believing that some of our readers might be helped to record their wishes by the above, we submitted it to our legal adviser for an opinion as to its character. He replies:

The article contains good advice and it is applicable here. However, if there is nothing but community property, there is no need for the wife to make a will, for "upon the death of the wife, the entire community property without administration belongs to the surviving husband."—Civil Code, Sec. 1401.

Would make a single improvement in the form for the attestation of a will. The will given in "Probate Confiscation" is good, down to the attesting clause of the witnesses. There I would put this:

"The foregoing instrument was at the date thereof by the said——— ———, signed and sealed in our presence and by him published as, and declared and acknowledged to us to be is last will and testament, and we, at his request and in his presence and in the presence of each other have subscribed our names as witnesses thereto.

——— ———,
——— ———.

(Two witnesses, with their places of residence.)

SILENCE OF FRIENDSHIP.—Only real friends understand silence. With a passing guest or ceremonial acquaintance, you feel under an obligation to talk; you make an effort to entertain him as a matter of courtesy; you may be tired or weak, but no matter; you feel that you must exert yourself. But, with a very dear, intimate friend sitting by you, there is no feeling of this kind. To be sure, you may talk if you feel able, pouring out all of confidence, relieved and refreshed by interchange of thoughts and sympathies. But if you are very tired, you know you do not need to say a word. You are perfectly understood, and you know it. You can enjoy the mere fact of your friend's presence, and find that it does you more good than conversation. The sense of that present and sympathetic affection rests you more than any words. And your friend takes it as the highest proof of your friendship and confidence, and probably never loves you so vividly as in these still moments. No matter that twilight is falling, and that you cannot see each other's faces—the presence and the silence are full of brightness and eloquence, and you feel they are enough.

Chaff.

A YOUNG man who was presented with 11 Queen Anne penwipers on Christmas day by his lady friends, continues to wipe his pen on his coat tail.

"IT'S no use to feel of me wrist, dochter," said Pat, when the physician began taking his pulse; "the pain is not there, surr; it's in me hid entoirely."

A SLIP OF THE TONGUE.—She (encouragingly): "Your step suits mine exactly." He (nervously): "So glad to hear you say so; I know I'm such a bad waltzer."—*Judy.*

A YOUNG lady who didn't admire the custom in vogue among her sisters of writing a letter and then cross-writing it to illegibility, said she would prefer her epistles "without an overskirt." Sensible.

A LITTLE girl nine years old, having attended a soiree, being asked by her mother on returning how she enjoyed herself, answered, "I am full of happiness; I couldn't be any happier unless I could grow."

"MA, am I all made now?" said a little miss of three and one-half years, at the breakfast table yesterday morning. "Why, dear?" said the fond mother. "Because I have had my ears pierced, and was vaccinated yesterday," said little Tot.

SCENE: A Chinese Sunday-school not far from this office. Time: The end of the session. Pupil (who has been taught that day by a gentleman)—"Me no likee teacher." Superintendent—"Why not?" Pupil—"Me want old gal!" —*Congregationalist.*

THE medical faculty in England were discussing the question whether or not to attend a reception in evening costume. Prof. Charcot, who had not yet learned the niceties of the language, remarked: "As for me, I shall go in my nightdress."

CAPT. PERCIVAL, a Cape Cod mariner of the old school, was once awakened in his bunk by a shipmate with the announcement that the vessel was going to eternity. "Well," replied the captain, "I've got ten friends over there to one in this world; let her go." And he turned over and went to sleep again.

A LADY taking tea at a small company, being very fond of hot rolls, was asked to have another. "Really, I cannot, she modestly replied. "I don't know how many I have eaten already." "I do," unexpectedly cried a juvenile upstart, whose mother had allowed him a seat at the table. "You've eaten eight; I've been countin'!"

Always in a Hurry.

Reposeful women are a delight to their friends; one can almost forgive slovenliness when it is accompanied by an air of complete ease from care; and air which says: "I am always ready to talk with you or listen to your list of joys or sorrows." On the contrary, the woman who is continually "on the go" is extremely tiresome. We have before our eyes a girl who is a fair representative of the latter type. She is wasting her nervous force and her life in a lamentable manner. She expends enough force and energy in a day to last one so slim of stature for a week. Nothing she does is done slowly or deliberately. Always in the hottest possible hurry, her life seems to be wound up to the highest possible pitch. She dashes about the house, slams doors, and bolts her food in half the time that more sober people take to eat theirs. With her trifles are momentous; her tongue seems to be incapable of uttering a soft sound; her temper is all afire at a moment's notice; her adjectives are all superlatives, and sometimes she is ready to weep because she has no bigger and more expressive superlatives to use. Her energy, if properly engineered, would almost stem Niagara; she never moves except as if she were a Maud S., and going for a wager. Fervidness and rapture are daily food. Where will all this end? We answer—in the madhouse or the grave. It is the pace that kills; it is this pace which renders nervous prostration one of the most prolific diseases of the day. Let those of our women who are always intense, take a thought for the next generation, in whom the seeds of this abnormal haste are being sown with fatal effect.

STILL A WEST TO WHICH TO MIGRATE.—This year a regular fever for migrating to new and wild regions appears to have broken out in what was formerly the Western States. There is for many something romantic about thus setting out for unexplored lands. Even the old men and old women feel it, and at setting forth are filled with a new life and fire that makes them young again, while the young kick up their heels like so many baby colts. The rush is now into the far northwest, the Custer region being a grand central point. Gen. Brisbin, in a recent letter, dated Fort Keogh, Custer, Montana, speaking of this rush, says: "The cry is, still they come. I never saw such a rush of people westward. All trains are loaded down. The Ripon colony passed here yesterday—115 families, 506 souls—bound for Clark's Fork bottom. They had an immense train, and bring all their stock, horses, wagons, milch cows, plows, harrows, household furniture, tents and six months' provisions. They had a band of music, an editor, a doctor, etc. They will tent out till fall, and build their houses slowly. It seems to me it must be fun to come West in this way, when one has a jolly crowd and music."—*Virginia Enterprise, 5th.*

YOUNG FOLKS' COLUMN.

Our Puzzle Box.

Numerical Enigma.

I am composed of seventeen letters.
My 17, 9, 3 is a play upon words;
My 1, 2, 5 is a domestic quadruped;
My 10, 13, 4 is a foundling;
My 14, 6, 5, 15 is a long-drawn breath;
My 7, 16, 8 is to contend.
My 12, 9, 11 is a rude dwelling;
My whole was the dying utterance of a great warrior.

JERRY.

Letter Changes.

1. Change the initial of a curse as many times and obtain successively: A short stick, an inhabitant of a certain European country, a female name, hair about the neck of certain quadrupeds, an instrument to indicate the direction of the wind, and to decrease.
2. Change the central of a bower and obtain in succession: Zeal, and a protecting dress.
3. Change the final of a poet and successively form: A sailing vessel, a building for animals, rods, and an abbreviation of an English title of nobility.

KATHARINE.

Decapitations.

1. Decapitate a weight and leave a preposition.
2. Decapitate a place for sitting and leave to consume.
3. Decapitate the noise of a donkey and leave a beam of light or heat.

LEAR.

Names of Towns.

1. My first is used to cross my second.
2. My second should arise before my first.
3. My first is often found in my second.
4. My first is a body of water much larger than my second.
5. Small, a weight.

SOLOMON.

Reversals.

1. Reverse a hollow stalk and make an animal.
2. Reverse novel and make a tumor.
3. Reverse a conjunction and make a wooden vessel.
4. Reverse a weight and make an adverb.
5. Reverse flat and make the same.
6. Reverse a falsifier and make a bar.

F. J. R.

Answers to Last Puzzles.

CROSS-WORD ENIGMA.—New Orleans.

BURIED CITIES AND TOWNS.—1. Oswego. 2. Oxford. 3. Buffalo. 4. Windsor. 5. Dickens. 6 Hanover. 7. Allen. 8 Linde.

CHARADE.—Peep-in (n).

REVERSALS.—1. Wolf, flow. 2. Am, ma. 3. Ned, den.

CURTAILMENTS.—1. Beet, bee. 2. Bee, be. 3. Heron, hero. 4. Boat, boa.

The Cobbler Who Kept a School in a Workshop.

Did you ever hear of John Pounds? Probably not, and yet he was one of the world's benefactors. He was born in 1766, in Portsmouth, England.

In early life he learned the trade of a shipwright, but was so injured by a fall that he had to abandon this. He then mastered the art of mending shoes, and hired a little room in a weather-beaten tenement, where for a while he lived alone, except for his birds. He loved birds dearly, and always had a number of them flying about his room, perching on his shoulder or feeding from his hand.

In the course of time a little cripple boy, his nephew, came to live with Uncle John and the linnets and sparrows. The poor child had not the use of his feet, which overlapped each other, and turned inward. The kind uncle did not rest until he had gradually untwisted the feet, strengthening them by an apparatus of old shoes and leather, and finally taught them to wak.

Then he thought how much more pleasantly the time would pass for the boy if he knew how to read and write, and so he began to instruct him. Presently it occurred to him that he could teach a class as easily as he could manage one pupil. So he invited some of the neighboring children in, and as the years went on this singular picture might be seen:

In the center of the little shop, six ft. wide and about 18 ft. long, the lame cobbler, with his jolly face and twinkling eyes, would be seated, his last or lapstone on his knee, and his hands busily plying the needle and thread. All around him would be faces. Dark eyes, blue eyes, brown eyes, would shine from every corner, and the hum of young voices and the tapping of slate pencils were mingled with the singing of the birds which enjoyed the buzz of the school.

Some of the pupils sat on the steps of the narrow stairway which led up to the loft which was John's bedroom. Others were on boxes of blocks of wood, and some sat contentedly on the floor. They learned to read, write and cipher as far as the rule of three; and besides, they learned good morals, for much homely wisdom fell from the cobbler's lips.

Hundreds of boys who had no other chance—for he gathered his scholars from the poorest of the poor—learned all they ever knew of books from this humble teacher. His happiest days were when some sunburned sailor or soldier would stop in his doorway, perhaps with a parrot or a monkey in his arms, saying: "Why, master dear, you have not forgotten me, I hope?"

John Pounds taught his little school for more than 40 years, never asking or accepting a cent of payment from any one.

At the age of 72, on Jan. 1, 1839, he suddenly died, while looking with delight at a sketch of his school which had just been made by an artist. For many days the children of the place were inconsolable, and by twos and threes they came and stood by the closed door, which, in John Pound's time, had always been open to the needy.

A life like this, so lowly yet so useful, contains lessons for us all.—*Harper's.*

GOOD HEALTH.

Flesh Worms on the Face.

The black points, flesh worms, technically termed comedones, which are found in the face, and especially near the nostrils, are not at all produced by the accumulation of the particles of dirt or dust, as has generally been believed, but by pigmentary matter, which is soluble in acid. It is known, in fact, that black comedones, which accompany and often appear, not only on persons exposed to dust, or rather careless of their person, but also on chlorotic young girls who live in good circumstances. Besides, observation shows that the discoloration not only exists on the surface of old comedones, but descends always to the lower parts. Accepting this fact, Unna has used successfully acids in the treatment of comedones. He generally prescribes: Kaolin, 4 parts; glycerine, 3 parts; acetic acid, 2 parts, with or without the addition of a small quantity of some ethereal oil. With this pomade he covers the parts affected in the evening, and if need be during the day. After several days all the comedones can be easily expressed, most of them even come out by washing the parts with pumistone soap. The same results can be obtained by bandaging the parts affected for a long time with vinegar, lemon juice, or diluted hydrocloric acid. The author concludes by saying that the acids act like cosmetics, as they transform the black color into a brown and yellow shade, and destroy it gradually altogether; they produce a quicker desquamation of the horny bed which interrupts the exit of the comedones and brings to the surface the glandular openings.—*Archives de Virchow.*

"HARDENING" THE BODY.—A young man was an earnest advocate of a theory that the human body can accommodate itself to any temperature in which it may be placed. One winter he determined to harden himself by wearing no covering for his ears; they were badly frozen on a very cold day, and were tender for several years after. He grew wise and abandoned the hardening process. A young woman heard an eloquent lecture on the importance of fresh air in chambers at night. The lecturer said there was no danger from a window slightly opened; the body would soon harden itself so as to resist the effect of the exposure. She tried the experiment one cold night and caught a severe cold, which lasted the entire winter. She lost faith in hardening against cold. A young mother maintained that children ought not to be brought up too tenderly. Arms and legs ought to be hardened by exposure in early years, and not be made tender by warm coverings in winter. She lost her two oldest children by croup and pneumonia, induced, as the physician said, by insufficient clothing. She gave up the attempt to harden the others. The best way to harden the body is to protect it well from extremes, both of cold and heat, and build up a strong constitution by good food, good sleep and good exercise.

OUT DOOR AIR AND EXERCISE.—The surest of all natural prophylactics is active exercise in the open air. Air is a part of our daily food and by far the most important part. A man can live on seven meals a week, and survive the warmest summer day with seven draughts of fresh water, but his gaseous nourishment has to be renewed at least 14,000 times in 24 hours. Every breath we draw is a draught of fresh oxygen, every emission of breath is an evacuation of gaseous excrements. The purity of our blood depends chiefly on the purity of the air we breathe, for in the laboratory of the lungs the atmospheric air is brought into contact at each respiration with the fluids of the venous and arterial systems, which absorb and circulate it through the whole body; in other words, if a man breathes the vitiated atmosphere of a factory all day and a close bedroom all night, his life-blood is tainted 14,000 times in the course of the 24 hours with foul vapors, dust and noxious exhalations. We need not wonder, then, that ill-ventilated dwellings aggregate the evils of so many diseases, nor that pure air should be almost a panacea. Out-door life is both a remedy and a preventative of all known disorders of the respiratory organs; consumption, in all but the last stage of the delirium, can be conquered by transferring the battle-ground from the sick room to the wilderness of the next mountain range.

THE BORACIC ACID TREATMENT OF DIPHTHERIA.—Dr. T. D. Harries, of Aberystwith, reports in the *Lancet* a very successful treatment of diphtheria by the local application of boracic acid in solution. The solution is prepared and applied as follows: Boracic acid, two drams; glycerine, half an ounce; water, half an ounce; to be applied freely to the fauces every hour at first, diminishing in frequency with the disappearance of the deposit and general symptoms. The application should be continued for some days after the throat has become perfectly clean. If discontinued too abruptly, the deposit is almost certain to reform, with a return of the general symptoms; and with the view of warding off this danger, I make it a rule to continue painting up to the eighth day, after which date the patient may be considered comparatively safe. The solution seems to have no injurious effect when swallowed, as I have frequently applied an ounce during 24 hours in the cases of children of from four to five years of age.

DOMESTIC ECONOMY.

HINTS ABOUT FROSTING.—A little cream of tartar mixed with the sugar of which you are to make boiled frosting will improve the frosting greatly; it will harden at once, and you will be spared all anxiety in the matter. A good rule for making this kind of frosting is this: Two cups and a half of sugar, two-thirds of a cup of water; boil until it candies, that is, until it will drop from the spoon in threads, or will harden in cold water. Then add the whites of three eggs beaten to a stiff froth; stir it briskly for a few minutes, till it is perfectly smooth; add the juice of one lemon. This quantity will be enough to put between the layers of a medium-sized cake, and will also frost the top and sides. If you wish to frost the top and sides only, one cup of sugar and one egg will be enough.

WAFER GINGERBREAD.—Half a pound of flour, half a pound of the coarsest brown sugar, one-quarter of a pound of butter, one dessertspoonful of allspice, two of ground ginger, the peel of half a lemon grated and the whole of the juice; mix all these ingredients together, adding about half a pound of treacle, so as to make a paste sufficiently thin to spread upon sheet tins; beat it well, butter the tins, and spread the paste very thinly over them. Bake it in rather a slow oven and watch it till it is done. Withdraw the tins, cut it in squares with the knife the usual size of wafer biscuits, and roll each around the fingers as it is raised from the tin.

ALMOND JUMBLES.—Ingredients: One pound of sugar, one-half pound of flour, one-quarter pound of butter, one teacupful of loppered milk, five eggs, one tablespoonful of rose water, three-quarters pound of almonds, one teaspoonful of soda, and use boiling water. Blanch the almonds and chop fine, but do not pound them; dissolve the soda in boiling water; cream, butter and sugar; stir in the beaten yelks, the milk, the flour, the rose water, and the almonds; lastly the beaten whites very lightly and quickly; drop in rings or round cakes on buttered paper, and bake quickly. Grated cocoanut may be substituted for the almonds.

CONCERNING TOWELS.—Never put a new towel in the wash until you have overcast the fringed edge. The use of this is obvious the moment one is told of it, though a dozen towels might be worn out before one would discover it. If when towels are washed the fringe is shaken well before they are hung up to dry, the fresh appearance will be preserved for a long time. If vigorously shaken, that is all that is necessary; otherwise it is best to have the laundress whip the fringe over the clean back of a kitchen chair. This is much better than any combing process. Besides it does not wear the fringe so much.

BLACK COFFEE.—To make coffee good it should never be boiled, but boiling water should be poured on it just the same as for tea. A great deal of the aroma of coffee is lost unless it has been freshly roasted, and one reason why Germans and French excel in their coffee is simply because they roast each day sufficient for the day's needs. It should never be ground until it is wanted for use. To make excellent, strong, black coffee, allow one and a half ounces or one and a half tablespoonfuls of ground coffee for each person, and to every ounce of coffee allow one-third of a pint of boiling water.

BRETON CAKE.—Ingredients: One cupful butter, one and one-half cupfuls sugar, five eggs, one and one-half teaspoonfuls baking powder, one and one-half pints flour, one pint cream, and three-quarters of a pound of prunes. Soak and stone the prunes, cutting each into three pieces. Rub the butter and sugar to a cream; add the eggs one at a time, beating two minutes between each addition. Sift the flour and powder together, which add to the butter, etc., with the cream and prepared prunes. Mix into a batter moderately thick, and bake in a steady oven 45 minutes.

BEEF TEA.—A quick way to prepare this is to chop a pound of lean beef fine and put in a bowl, covering with cold water. Let it stand for 15 minutes onward—that is, longer if you have time. Then pour beef and liquid into a saucepan and boil from 15 to 30 minutes. Strain off the liquid; season slightly with salt. It is better to let it cool and take off the fat; also to let the beef soak a long while, as that draws out the juices. Soak in cold water.

OMELETS.—A simple and acceptable omelet is made by beating three eggs and adding a cupful each of new milk and bread crumbs. Turn into the frying pan, which should be warm and contain enough drippings to prevent the omelet from burning fast. Cook rather slowly, and as soon as done sprinkle with salt and pepper, and roll up like jelly cake. Serve at once.

COCOANUT CAKE.—One and a half cups of sugar, half a cup each of butter and milk, one cup of cocoanut grated fine, two cups of flour, three teaspoonfuls of baking powder. Bake in pans, with dry cocoanut sprinkled over the top.

EGGS IN CAKE.—If you wish to make a cake which will keep well, use the yelk of eggs only; they make it much more moist and less liable to dry than the whites do.

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SAN FRANCISCO:

Saturday, May 20, 1882.

TABLE OF CONTENTS.

GENERAL EDITORIALS.—Window Gardening; A Grievous Frost, 389 The Week; Overcoming Summer Heat; Shortening the Route to England; The Fruit Outlook; The New Grain Exchange, 396 Beef Prices; Improving Wheats by Selection, 397. Santa Barbara Roses; Notices of Recent Patents, 400. The Dangers of a Late Season; The Deering Twine Binder; Temperance, 405

ILLUSTRATIONS.—Design for Window Garden, 389 Striped and Spotted Diabroticas; The Saw Fly and its Larvæ, 397. The Deering Twine Binding Harvester, 405.

CORRESPONDENCE.—Transportation of our Products; Lake County Notes; Napa County Notes, 390. Around the Lower Bay, 405.

POULTRY YARD.—Broken Down Fowls; More about Incubators, 390.

SERICULTURE.—Silk Culture in California, 391.

PATRONS OF HUSBANDRY.—A Speech that Was Not Spoken; The Grange; Little Things; The Grangers and the College of Agriculture; Grangers' Business Association; Danville Grange Meeting, 392.

AGRICULTURAL NOTES, from the various counties of California, 392-3

NEWS IN BRIEF on page 393 and other pages.

HOME CIRCLE.—Longfellow's Last Poem, (Poetry); Compensation; Probate Confiscation, 394. Chaff; Always in a Hurry, 395.

YOUNG FOLKS' COLUMN.—Our Puzzle Box; The Cobbler Who Kept a School in a Workshop, 395.

GOOD HEALTH.—Flesh Worms on the Face; "Hardening" the Body; Out-door Air and Exercise; The Boracic Acid Treatment of Diphtheria, 395.

DOMESTIC ECONOMY.—Hints about Frosting; Wafer Gingerbread; Almond Jumbles; Concerning Towels; Black Coffee; Breton Cake; Beef Tea; Omelets; Cocoanut Cake, 395.

QUERIES AND REPLIES.—Grapevine Knot or Cancer; Currants and Raspberries; Millets, 397.

ENTOMOLOGICAL.—Squash Bugs; The Saw Fly, 397.

Business Announcements.

Thoroughbred Sheep—J. H. Trowbridge, Haywards.
M. C. Hawley & Co., Agricultural implements, S. F.
Geo. A. Davis, Harvesting Machinery, etc., S. F.
P. Steinhagen, Fruit and Commission Merchants, S. F.
Live Stock Auction, Oakland, May 21st,
Fruit Pitter, J. W. Terry, Healdsburg, Cal.
Anderson's Springs, Lake Co., Cal.
To men out of employment—Jackson & Truman.
Sackett School for boys—Oakland, Cal.
3 Gopher Traps for $1, G. W. Jolly, Pariaso Springs, Cal.
65 Gold motto birds, O. A. Brainard, Hagganum, Ct.
50 large size Chromos, Todd & Co., Clintonville, Conn.
Jackson & Truman, Farming Implements, S. F.
Barnard's Business College, San Francisco.
Agricultural Implements, Baker & Hamilton, S. F.
Agricultural Machinery, Seymour, Sabin & Co., Oakland.
Hay Presses, Jacob Price, San Leandro, Cal

The Week.

The picnic season is advancing and the bands are filling the air with stirring melody. The environs of San Francisco are almost daily invaded by hosts of armed men or men clothed in regalias and bearing banners. Every organization is having its annual outing, and its wife and children are getting a breath of rural air and a chase for wild flowers. In the country the roadways are filled with gay family carryalls and speeding teams, and the laughing loads of children make a music sweeter than the measured peals of city bands. It is a joyous season, and California enjoys it to the utmost. It is not to be wondered at that a writer for an Eastern paper dubs California the "picnic State." It is well to have hosts of these merrymakings to smooth away the lines of toil and worry, and to increase sociability and sympathy.

Next week we expect to have something extra in the way of a RURAL suited to interest and guide the hosts who go out at this season for a vacation at the resorts, with which California is well supplied.

Overcoming Summer Heat.

The time is approaching when the thermometer will do its best work in the hot valleys of our State, and aids to withstand the heats may be valuable. It is generally known that the lofty marks to which the mercury sometimes ascends are not true measures of heat effects upon men and animals, because, through the dryness of the air, there is none of the prostration which accompanies great heat in countries with a moist summer. Nevertheless, there are times when it is quite valuable to be able to reduce the temperature a few degrees. The best way to do this is by using the coolness which proceeds from the evaporation of water. Perhaps a lesson can be learned from East India contrivances. According to *Chamber's Journal* they use in India what is called a "tattie," a large curved or sloping screen, which accurately fits into each door or window facing the west, and is made of the roots of the khuskhus grass (*Andropogon muricatus*), which singularly combines strength and porosity with the most delicious and refreshing fragrance. These screens are about an inch in thickness, and, during the hot and dry west wind, are saturated from outside with water, which immediately commences evaporating under the fierceness of the blast; and as evaporation always implies cold, the wind which, in the veranda, would raise the thermometer to 120° Fahr., passes into the house at 75° to 80°, laden with a delicious fragrance. While tatties are in working order all other cooling appliances are unnecessary.

In the neighborhood of Gwalior and Jhansi there is another form of tattie. A small, creeping, thorny variety of the ber (*Zizyphus jujuba*) is largely found in the jungles; this is collected and dried, and at the proper time the whole west veranda is inclosed with thorny walls nine to ten inches thick, and these being saturated from the outside, all doors are thrown open, and a delightful temperature is secured. Tatties are of no use during the easterly wind, which ushers in and accompanies the rains. Laden with moisture it is a damp wind, and therefore retards evaporation. The creeping thorny plant, *Zizyphus jujuba*, is growing in different parts of this State, and is known as the jujube, and could be had for tatties, if the growers wished to sacrifice the fruit which they are growing it for. But it is not at all necessary that we should take the time required to weave the thorny jujube into brush-cloth. All that is needed is to get some material which will hold the water in contact with the air as it passes through. No doubt our tules would make good tatties, and the evaporation of water thrown on the leaves of vines thickly covering the sides of the veranda would produce as much coolness as a hedge of brambles. There is great chance for ingenuity in choice of materials and methods of using them, but the principle is constant, to wit, the evaporation of water before admitting the hot wind to the domicile. A good hot summer norther will certainly furnish the wind power to dry out miles of tatties.

Shortening the Route to England.

We notice that our English exchanges are quite interested in the promised carriage of wheat by rail and ship from New Orleans, and commenting upon the likelihood of such quick delivery from our fields affecting values there. The way they describe the old and the new method of shipping our wheat is something like this:

The railway rates are expected to be, between California and the ports of the Gulf of Mexico, about 11s per quarter, and the freights thence to Europe 2s per quarter—in all, 65s to 70s per ton. Now on several occasions freights from California direct to London, by sailing vessel, have been under 60s per ton, but at other times they reach 80s to 90s per ton. Thus by competitive transit, part land and sea, and wholly by the ocean, it is probable future rates will be more even than they have been hitherto, say, as an average, 12s to 13s per quarter, and against the drawback of the long sea route will be the disadvantages always attendant on shipment and carriage through hot southern countries. The chief point is, that by saving of time in the transit of grain from the Pacific coast to Europe, great opportunities will be given to California and Oregon to supply Europe all the year round, so as to uninterruptedly affect our markets. Taking the present date as an instance, Californian wheat for shipment is now neglected by buyers because its arrival can only take place after, and, or in the midst of harvest; whereas if it could be had not later than June, it would compete with such other supplies from Russia, Australia and India that alone are reckoned with. Like the Suez canal to India, the Southern Pacific railway may prove to California. Anyhow, freights and continuous supply are more and more growing hostile to British farmers, and there can be no good in withholding this truth.

There can be no doubt that the shortening of time in transit will be a great advantage to California growers, and enable them to realize speedily whatever movement there may be in the market, but to be sure of such advantages we must be assured some other things. One is that the healthy competition between ship and rail shall be maintained, and that we shall not be left without ships so that the rails can enjoy a monopoly of the carriage, for in such cases freight rates have been known to advance very rapidly. Another thing which should be assured, and that is, that wheat in the upper part of the San Joaquin valley shall not have to pay local rates to tide-water in addition to the through rate; in other words, that wheat which is 150 miles nearer New Orleans than Stockton, shall not have to pay considerably more than wheat from Stockton. If there is a fair competitive rate, and if discrimination is not shown, but wheat is taken from all nearer points at the through rate, then as our English friends perceive, the cut-off via New Orleans will be of great advantage to California wheat growers.

The Fruit Outlook.

Once in a while a year seems to get out of sorts, and often a bad beginning seems to lie at the bottom of the trouble. The year 1882 began cold and dry, and although there were signs of mellowing up and moisture in February, the recovery was never fully effected, and we have shivered along almost into summer-time with a short supply of water and a long supply of cold, drying winds. Now the season is so far advanced that there is little hope of more water, and the prospect is that the growing crops will be hastened to maturity before their growth is fully accomplished. The result will be a moderate amount of grain for export, instead of the magnificent surplus which has been anticipated from the increased acreage sown last fall.

Fruit, too, seems to have fallen into evil ways. Last week we had a letter from Haywards noting the general dropping of immature fruit in that district. Since then we have heard of similar experience in other fruit counties. The pear crop has been exceptionally afflicted. We hear that agents of Eastern fruit-shipping houses have already taken to the field to corral the Bartlett pears, and acknowledge that they have had poor success, because the yield promises so little. The pears have shown especial tendency to drop, so that those who counted on large crops will have but little. It is quite likely, too, that the Eastern fruit trade may be affected by the lateness of this year's fruit harvest, as the chance for our fruit lies, to a certain extent, in its being ready some weeks before similar fruits ripen at the East.

It is quite possible that some of our fruit growers may have to possess their souls in patience this year. They must not slacken in their efforts at insect destruction. It is possible that the cost of the fight may fall heavily if this year's receipts should be lessened, but if the work should be neglected the promise of next year's rewards is endangered. There have been several good years, and there are good years to come. Let courage be sufficient for the present vexations and disappointments.

NEW WINE-MAKING PROCESS.—Adolph Reihlen, of Stuttgart, has invented a process of wine-making, which, says the Vienna *Free Press*, opens a new era in wine industry, because it affords a means of thoroughly utilizing the grapes. An increase in the quantity of wine produced is attained without, as in the case of Petiot's and Dr. Gall's method, affecting its quality. Riehlen operates as follows: The berries are gently pressed, the must heated to boiling, and the marc mixed with the boiling must for three or four minutes, whereby the coloring matters, tartar, aroma, and other valuable substances are extracted, and at the same time the injurious albuminous substances are rendered insoluble. The marc is, however, not quite exhausted by this process, but is capable of imparting the rest of its still valuable contents to weak wines, so-called fruit wines, and saccharine liquids generally. By this method (which has been in operation since 1880), when purple grapes are worked up for wine, a deep bluish-red must is obtained in a few minutes without fermentation, the quantity of coloring matter extracted by the boiling must being from three to seven times as much as that extracted according to the old method after three months' fermentation. Reihlen further prepares the marc of purple grapes in such a way that even after years this will impart a color to red wines which have become bleached, or revive the taste of deteriorated wines. The process can be applied to both red and white wines, and the bouquet peculiar to the Reisling and Traminer grapes admits of being imparted to the must from other kinds of grapes.

ALFALFA BLOAT.—A Pajaro man, in Santa Cruz county, went home the other day and found his cow puffed up like an angry hoptoad. Several remedies had been tried on the cow before the arrival of the owner, but to no good purpose. Her speedy death was prophesied, and would no doubt have taken place had not her owner cast his eye upon a piece of ¾-inch rubber hose. He grasped that hose, smoothed and greased the end of it, pushed it down the cow's throat as far as her first stomach, and that bloated cow immediately collapsed to her natural size. The bloat gas escaped through the hose, and the cow escaped death. The man's name is Easterday. Let him be remembered as a bovine benefactor.

THE legislative, executive and judicial appropriation contains an appropriation of $29,720 for the office of Assistant Treasurer, of San Francisco; for San Francisco mint, salaries for officers etc., $43 600; wages $242,000; incidental expenses, $70,000. For the mint at Carson—salaries, etc., $29,550; wages, $54,000, and incidentals, $25,000.

NEARLY 7,000 immigrants landed on Monday at New York.

The New Grain Exchange.

The first meeting of the Grain Exchange which has been formed in connection with the San Francisco Stock and Exchange Board, was held this afternoon in the hall of the Stock Exchange on Pine street. The room was well attended by brokers, and the visitors' seats were well filled. The brokers were in the best of humor, and venturesome bidders were greeted with applause and laughter. A manifest ignorance of the qualities of grain was noticeable among the talkative bidders, and many cereal absurdities were referred to.

The Executive Committee of the Exchange has been at work several months in perfecting arrangements, and now is fairly prepared for work. The call is held on the floor of the Exchange while in the basement of the building is an apartment which is designed as a general rendezvous or assembly-room for the grain brokers and their patrons. This room, although very small, is well fitted up, and on neatly designed bulletin-boards are given the latest grain quotations from Chicago, St. Louis, New York and Liverpool, all prices thereon given being reduced to the cental, which is the basis of trade here, instead of the Eastern and foreign bushel, which is old-fashioned and only confuses the California dealer. These bulletins are a decided improvement over those of the Produce Exchange, but the standards of grain exhibited are very far out of the way. For instance, the standard of No. 2 wheat is really very good No. 1, being strong, clean, plump and of good color. On the other hand, No. 1 feed barley is nothing more nor less than a very fair specimen of dark brewing. The Grain Exchange should revise its standards of grain. In barley, there is no distinction between brewing and feed, and should the buyer of "No. 1" insist on No. 1 brewing, on the maturity of the contract, he could easily make trouble for the seller. The assembly-room will be open from 9:30 A. M. to 4 o'clock P. M.

The meeting was called to order by the President, Homer S. King, who spoke a few preliminary remarks concerning the object of the meeting.

George T. Marye, President of the San Francisco Stock and Exchange Board, then took the floor and addressed the meeting. After speaking of the difficulties encountered and overcome in forming the present enterprise, he said:

The impression has prevailed, though I believe that it has now been removed, that the Grain Exchange was the Stock Board under a different name. But that is far from being a fact. The only connection between the two institutions is that all the members of the Stock Exchange became charter members of the Grain Exchange, and that they participated actively in launching the enterprise; but there are many members of the Grain Exchange who have no connection with stocks, and who are identified entirely with the grain trade. We have been encouraged in our undertaking by the conviction that a properly constituted Grain Exchange has long been a want in San Francisco. An Exchange which will bring in a reasonable amount of speculation, and thereby lighten the burden now borne almost entirely by the farmers and producers of the State in carrying the crop, often for the exclusive benefit of the tonnage manipulator and the foreign dealer. Of course, excessive speculation is not to be desired, and our rules have been framed with a due regard to the experience of older exchanges. We have made corners impossible, or at least extremely unlikely, by making them unprofitable, as will fully appear from a careful perusal of our by-laws, especially articles 10 and 13. And it is interesting and gratifying to note that they have introduced into the Chicago Board of Trade an amendment to their law making it in this particular substantially the same as ours, and that they also propose to make No. 1 wheat deliverable against No. 2 contracts which is already the rule of this Exchange. We have already recognized that it is not the only province of a well organized Exchange to furnish facilities for sales and transfers, but that it should also collect and disseminate among its members information of importance to them in their business. We have therefore made arrangements, at a heavy expense, to have transmitted to us daily from the Eastern and European markets information not before received here by telegram. There is one other point that I would like to dwell upon at greater length than I feel justified in doing on this occasion, and that is the close and intimate relations that our Exchange is desirous of establishing between its members and the farmers and producers of the State. The benefits of our organization to the business community at large, and particularly the farmers, or at least some of those benefits, have been briefly pointed out by us before now, but I would like, on a fitting occasion to explain them more fully. In the meanwhile we ask the co-operation of the farmers, and invite them to join our Exchange, in the conviction that our success will be their advantage. The business and benefits of the Exchange may not come at once. We all remember how long it took before the business of the Stock Exchange grew until they sold the Comstock over and over again a dozen or a score of times in a year. And it will be the same with the Grain Exchange. It may not come at once, but it will come, when we will sell the entire crop of the State many times over.

At the conclusion of Mr. Marye's address the caller of the Stock Board, Howard B. Coit, proceeded to call the sales and asked for bids. The following sales were made: 200 tons feed barley, No. 1, at $1.20; 100 tons wheat, No. 1, $1.59½; 100 tons wheat at $1.60; 100 tons wheat at $ 1.64; 100 tons wheat at $1.62½, and 100 tons wheat at $1.63.

The Exchange was only in session about 10 minutes. Daily meetings are to be held at 1:30 in the afternoon.

POTASH AND KEROSENE.—Much injury has been done to trees in Santa Clara county by the use of petroleum. At the last meeting of the county horticultural society, Mr. Vestal, of the Standing Committee on Insect Pests, said that where oil had been used on pear and apple trees with caution, no special injury had been done; but he should lay down the general rule—for stone fruits avoid oil and put on potash. The committee had found that it was still problematical whether it were better to use kerosene or lye.

QUERIES AND REPLIES.

Grapevine Knot or Cancer.

EDITORS PRESS:—More or less has been written in the journals of this coast in regard to a disease of the grapevine denominated "black knot." It has been some time since we read a description of the disease, but we presume the disease is prevalent in this vicinity. I believe some writers attribute the disease to late trimming, and to the effects of late spring frosts, which, in some localities, injure the new growth or shoots. But this disease (at least the one prevailing in this vicinity) is met with on rather dry, sunny slopes, inclining to the south, where very little frost is ever seen, as well as where the contrary conditions prevail.

The vine is affected with a fungus growth or warty excrescence, which is found either above ground or near the surface. It is soft, tender, but somewhat woody in character when green and growing in spring and early summer, but becomes hard and flinty during fall and winter. When green it is easily removed with a knife, or even with the hand or thumb; and, when found at or below the surface (at this date, May 9th), contains in its cavities, or in soil immediately around it, small worms from one-sixteenth to three-fourths of an inch in length; very slender; of a lightish yellow or yellowish-white color, and, when not magnified, resembles a small wire worm. The sap will be found oozing out, and will in one or two years kill a vine; at least some vines will die in that time, and, if a remedy is not found, will exterminate certain varieties. I have not, so far, found it on the Mission vines, but it prevails alike on Muscatel and Black Hamburg. In addition to the small worms found there is a chrysalis found of about three-fourths of an inch long, encased in a mud or dirt cylinder; also other insects or plant lice, and larvæ of a white or almost transparent color; many ants also inhabit the roots of the diseased vine. I send samples of insects and fungus. The first-named vermiform articulates found seem to be of two kinds, and belonging to the order *Meriapoda*. One is of the family of which the *Scolopendra* forms an example; the other, from its more round body and manner of curling up, certainly belongs to the other group (*Chilognaths*), to which the *Julus* belongs, and, if such, are carnivorous, and their presence would indicate that other insects were there, which they devour. The other insects may come to feed on the sap flowing, or they may cause the disease by perforating the vine. The query is, what causes the disease, and remedy therefor.—H. J. DENNISON, Nordhoff, Cal.

All the remains which were sent us, except the chrysalis, seem to belong to insects commonly found in decaying wood. The chrysalis resembles that of the cockchafer or some other beetle. Supposing that our correspondent has made the correct classification of the centipedes and millipedes, we would only remark that some species of the genus *Julus* feed on decaying vegetation as well as on animal matter, such as decaying earth-worms, snails, etc. All the insects, except the chrysalis, as we have said, are those which would be likely to live on the debris of the diseased vine rather than as a cause of the trouble. All the examinations we have made of the knotty material from grapevines would indicate the trouble to be from some disease of the vine rather than the work of insects. The subject is one of great importance, and should be studied by all who have opportunity for observation.

Currants and Raspberries.

EDITORS PRESS:—Which kind of currant would be the most profitable to plant? as I am just commencing agriculture and don't know of any other way to find out than by asking you. Also the same of raspberries, as well as the average price either would bring wholesale.—J. P. LANG, Calistoga.

EDITORS PRESS:—When I came to St. Helena, about 12 years ago, I made the same inquiries as your correspondent, Mr. Lang, as to the best variety of currant for this section. Knowing that Mr. J. Lewelling was one of our oldest fruit men on the coast, I called on him and he advised me to plant none but the cherry currant. He kindly gave me a few cuttings—enough for family use—which I planted in rich soil and gave the best of care. They bore quite satisfactorily while young, but soon began to show signs of disease and decay. Observations since among my neighbors' gardens disclosed the same results. I think the climate of the upper Napa valley too dry and hot for the successful culture of the currant for market purposes. There may be, however, some other variety better adapted to this section. I have seen no other than cherry variety in cultivation here. I would advise Mr. Lang to procure several standard varieties for trial before planting largely of any one variety. Select a cool, moist, rich soil—not too wet—and if partially protected on the south side from the glare of the mid-day sun, all the better. All varieties of the currant succeed admirably in the cool, moist climate of the seaboard, and have been raised at a great profit on the borders of the bay in Alameda county.

After a trial of several varieties of the old standard sorts of raspberries, I find what is known here as the Red Antwerp the best. Planted on good, rich soil and well cultivated they give good satisfaction without irrigation. —JNO. MAVITY, St. Helena.

Millets.

EDITORS PRESS:—Please to inform me through the columns of your paper, and oblige, are "Evergreen" millet and "Pearl" or "Egyptian" millet the same grasses or of different species, and where is the seed of the same to be had?—G. L. LEWIS, Riverside, Cal.

One can hardly tell what one is talking about in using the popular names, for they vary with the persons using the terms. As we take it, however, all the plants named are different, to wit: "Evergreen millet," *Sorghum halapense*; "Pearl," or East India millet," *Penicillaria spicata*; "Egyptian corn," or "millet," *Sorghum vulgare*, variety *cornua*. The seed of all can, no doubt, be had of the seedsmen advertising in our columns.

THE RAILROAD EXTENSION TO TEHAMA.—In a recent issue it was stated that the railroad was to be extended from *Winters* to Tehama, to give a new route to Shasta county. It should have been from *Willows* to Tehama.

ENTOMOLOGICAL.

Squash Bugs.

EDITORS PRESS:—I send you three kinds of bugs. The small bugs are old varieties; the large ones are new in this valley. They first made their appearance here last year. They are very destructive on squash vines. I also send a piece of potato vine, with eggs of the large bug. What is the best way to keep them from eating up our gardens?—H., Watsonville.

These are all old pests—to memory hateful. The two small ones are the "striped cucumber bug" *(Diabrotica vittata)*, and the "twelve-spotted diabrotica" *(Diabrotica duodecempunctata)*. The former will be remembered by all who had gardens at the East. The 12-spotted rascal has done most of his evil work in California, where he has eaten everything, from ripe fruit to rose petals. The large insect is the old Eastern "squash bug," big, black and abominable pest as he is. When crushed, his remains exhale a disagreeable odor, and the

Striped and Spotted Diabroticas.

boys' name for him is the "stink bug." These pests can be best routed on squash, melon or cucumber plants by dusting with air-slaked lime, or powdered gypsum, or soot. The striped bug, however, feeds largely on the under side of the leaf, and is not so easily reached by dusting. If shingles are laid on the ground near the vines, most of the large squash bugs will congregate under them during the night, and can be crushed at daylight. If the vines are manured with a compost of human excrement and loam, the growth will be stimulated and the bugs disgusted. If young plants are surrounded by a box from which top and bottom have been removed, and the top covered with gauze, the tender leaves will get their first growth uninjured and will have a better chance to outgrow the pests.

Fig. 1.

Fig. 2.

THE SAW FLY AND ITS LARVÆ.

The Saw Fly.

EDITORS PRESS:—Much injury is being done to fruit trees by a small green caterpillar, which seems to have some connection with a short stocky fly, which is also found on the trees. What is it, and what can be done for it?—N., Alameda county.

The insect mentioned is no doubt the saw fly and its larva—old offenders in different parts of the State. Mr. Cooke, in his report on injurious insects, gives the following account of the pest, accompanied by the engraving which we reproduce:

The larva of the saw-fly, *Nematis similaris*, in the last few years has done considerable damage to foliage of pear trees in the vicinity of Sacramento. In 1881 it was reported from several counties. The young larvæ appear about the time the trees are in leaf, and commence feeding on the foliage. (In 1880 we visited an orchard where we found pear trees of the Winter Nelis variety almost entirely stripped of foliage.)

The egg is laid by the female fly in a cut made in the leaf by the saw-like apparatus of the female, and hatches in a few days. At first it eats a short track along the leaf, then a small hole, and fastens itself by pro-legs. (Fig. 1.) When about one-third grown, it leaves this hole, and either commences eating on the edge of the leaf or on the edge of another leaf, which it generally destroys (devours) entirely, continuing from one leaf to another. (Have counted six larvæ on one leaf.)

The larva, full grown, measures one-half of an inch in length, has six thoracic legs, 12 pro-legs, and two anal pro-legs; is a green color; the head is yellowish-green, the eyes black. When it ceases feeding the larva drops to the ground, or into the crotches of the trees or branches, and hides itself. It spins a tough, dark-brown, oval cocoon. In this cocoon it hibernates as a larva. (We judge from specimens kept through the winter of 1880 81, and from specimens now in our possession.) Only one brood has appeared each season.

The adult insect (Fig. 2) is about three-tenths of an inch in length; expanse of wings, about three-fifths of an inch; the upper part of head and thorax, black; abdomen, yellowish, with a black transverse band on dorsal half of each segment; wings, hyaline (clear), of a brownish hue.

When the trees are planted in sandy soil, build a cone of sand around the base of the tree, then shake the branches; the larvæ, falling to the ground, cannot reach the tree over the sand placed around the base; or, place a greased cloth band on the tree, then shake the branches; the larvæ, falling off, cannot ascend the tree over the greased band. This should be done before the larvæ are full-grown. Or spray the foliage with solutions of whale-oil soap and sulphur.

Beef Prices.

It seems that it is a time of exceedingly high beef prices throughout the length and breadth of the country. It was anticipated that the stimulus given to the cattle interest of the great central States and Territories by the demand for shipment would so stock those wide pastures that no scarcity could be experienced; but it seems otherwise, and the country has become cleared of ready beef in spite of the great increase in the breeding interest.

Inquiry as to the cause of the present abnormally high prices of beef has elicited the following points from parties in Chicago, who profess to understand the matter:

1. Probably as many as 15% of the cattle on the plains were killed by the extraordinarily bitter weather of the winter of 1880–81. These were chiefly the younger animals, they being least able to bear and survive the exposure, and the loss thus fell among the very class of cattle which come into the States in the fall. It is reported that $30 per head was paid about a month ago in Montana for two-year-olds, to be taken upon ranches where the destruction had been the most severe. Also the large immigration of last year caused a much larger demand for cattle to stock new farms, which was a further drain upon the available supply.

2. The scarcity of corn in many sections, and its high price everywhere, has prevented a great many cattle from being fed into killing condition. There were thus fewer to market, and those that were marketed cost more to fit them for the hands of the butcher. The number of animals that were kept waiting for grass feed was sufficiently large to make a decline in prices probable when they come freely on the market a few weeks hence.

3. From New Years' day to date Chicago receipts of cattle are larger than for the corresponding time in 1881; but during the last three or four weeks this is reversed, and the smaller supply is met by an increasing demand for export of animals and meat. Five to six thousand animals now leave our shores weekly for Europe. There is recently an increased demand to supply the manufacture of canned beef. Two new factories have sprung up in Chicago during the past few months. The growing demand for canned meats is possibly connected with the falling off in the export movement of pork products.

RESTORING WORN COINS.—Recently, while Dr. A. H. Best, of Savannah, Ga., was silver-plating a small article with silver cyanide solution, he used an old Spanish silver coin as anode. The coin was worn perfectly smooth and had been hammered to twice its original size; yet in a little while after it was put in the bath every letter and figure became plainly visible. The date, 1800, though defaced so as to be beyond deciphering with a powerful glass, became plain.

Improving Wheats by Selection.

EDITORS PRESS:—I am certainly greatly indebted to you for the very flattering editorial made upon an extract of my essay on "Cross-breeding and Hybridization of Wheats," in the last issue of the RURAL PRESS of May 6th. If I may be allowed, I will add a word suggested by a remark you make in closing your editorial, viz: "While our richer grain growers are importing new varieties from all parts of the world," etc.

It is the prevailing opinion among farmers that "imported" wheats will do better than any of their native or acclimated standards, which opinion is true in most cases, when the imported are compared with their own. But when the farmer selects his seed wheat with as much care as he does his seed corn and gives it any reasonable amount of attention, he will find all importations far in the back-ground. In three years ninety-nine hundredths of the farmers will permit their seed wheat to retrograde at least an eighth and even a fourth, whereas, if half as much care as neglect should be bestowed upon its improvement *by selection* alone, not one would ever import to procure better seed.

Importations should never be made except for two purposes—for experimental work and a supply where no seed is to be had in the country. It takes two years to make a wheat No. 1 and pure by selection, and 3 to 10 to make a successful hybrid. The mere operation of crossing one wheat upon another to produce a new variety can be learned in a very short time; but the knowledge required to select varieties with the proper elements, that they, when combined, may produce an offspring better than either parent, both for the field and the mill, is something very few attain. It is not necessary for the farmer to obtain this knowledge; he can and should, however, understand the rules and laws of improvement *by selection*.

For 10 years, and more, I have found wheats made upon the soil where they are to be raised far better in every respect than any others, native or imported. I am now improving all your California varieties, and find, after two years, they improve so materially that your own farmers cannot recognize them in sheaf or shelled. I take the liberty of sending you a few samples—numbered—for your farmers to "guess on." They are sent you just as they came into my room from the thresher; they have not been recleaned nor graded in the least—only improved by *selection* for two years.

I have sown—and they are growing nicely now—this spring 181 different varieties, the seed of which I obtained from every country in the world and from many islands. Many I receive are winter wheats, which I have converted into spring wheats. Of all the samples received, not one was as good, or begun to be as good, in any respect as the very poorest I now have. The wheats that are nearest those I have improved came from Oregon.

I took with me 33 varieties to Washington last January. They were analyzed by the chemist and found to be "the best he had ever received or tested." I would very much like to have your Prof. Hilgard see the analyses and my wheats, too.

I have not written this letter for publication. You may, however, when an opportunity presents itself, extract some portions of it. We have just had three inches of rainfall—an unprecedented occurrence. A. E. BLOUNT.

State Agricultural College, Fort Collins, Col.

Comments.

We are glad to have these notes of Prof. Blount's experiments. They will, no doubt, prove of much value in this State as well as in Colorado. If the powers which be will make provision for the continuance of experiments at our State University, there will be results to compare with Prof. Blount's. Hardly anything can be more important than the improvement of our cereal grains, for grain growing is one of our greatest interests, and anything which will improve the weight and quality of the product will return much gold to the growers. Such work as Prof. Blount's should go speedily forward here and everywhere.

We learn by a Colorado paper that the Colorado Agricultural College comprises 240 acres of valuable land, of which 100 are under cultivation, not counting the hay land. Prof. Blount has been experimenting since he came here three years ago, principally with wheats. He has planted 160 different varieties, 13 of oats, and 11 of barley. These experiments have been more than flattering and reflect great credit upon the experimenter. He has succeeded, after crossing 32 wheats, in getting one of the best varieties ever produced. It is known as "Blount's Hybrid, No. 10." The department at Washington analyzed it, and said it was the finest wheat they had ever seen. The Professor, as already stated, has had 32 hybrids, 11 of which failed, leaving 21 that are successes in every particular. Prof. Blount received eight kinds of new wheat from New Zealand, and six kinds from Manitoba, and several kinds from Scotland. He will experiment with them this season to see if they are adapted to the soil and climate of the State. The Professor last year raised 1,800 fold. The college farm has all the necessary machinery and perfected arrangements for carrying on farming in all its different branches.

Science Club.—No. 8.

All communications for this department should be addressed "RURAL PRESS Science Club," Berkeley, Cal.

In filling out an order for a botanical collector on this coast we wish to obtain the following plants. Those who will furnish us any 20 good specimens selected from this list we will send in exchange Keep's "Common Sea Shells of California."

Viola [illegible], Linnaea borealis, Lonicera ciliosa, Phlox adsurgeus, Phacelia bolandri, Newberrya spicata, N. [illegible], Hastingsia alba, Prosartes parviflora, Cypripedium californicum, Geranium incisum, Brodiaea crocea, Polygala californicum, Collinsia linearis, C. rattani, C. grandiflora, Pentstemon rattani, Chelone nemorosa, Rosa spitharnea, Silene campanulata, S. hookeri, Aquilegia truncata, Brodiaea laxa, B. lactea, Calochortus [illegible], Calochortus [illegible], Cornus californica, Dicentra formosa, Gilia tricolor, Lilium rubescens, L. pardalinum, Lupinus albicaulis, Pentstemon neterophylla, Psoralea [illegible], Rhododendron californicum, Viola sarmentosa, V. ocellata, Fritillaria lanceolata.

The secret of having good specimens in the herbarium is rapid drying. This may be done by boards and weight. Place the plants with the leaves and all other parts, spread as flat as possible between sheets of blotting paper, and these between the boards, and then apply a heavy weight. The blotting paper should be changed daily. With tact and skill the most common weed will become attractive when placed on a sheet of white or tinted paper. The roots should not be broken off, and the plant should be fastened to the paper by very small strips of paper adhered to the main sheet by mucilage.

Exchanges.

R. W. Bailey, Westminster, Los Angeles county, has ferns, mosses, and sea shells for exchange.

Lorenzo Jared, Santa Maria, Santa Barbara county, sent us a box of sea shells lately, nicely prepared. This gentleman is one of the most enthusiastic and diligent of our botanical collectors. Those interested in the plants of California will find him a prompt correspondent.

A subscriber residing in Los Angeles sends us the following shells for naming.

1. Cardium quadragenirum; 2. Pachydesma ceassatelloides; 5. Hemicardium [illegible]; 6. Mytilus californianus; 7. Acmæa scabra; 8. Cirostoma nuttalli; 9. Ranella californica; 10. Pomaulax undosus; 12. Littorina planaxis; 13. Conus californicus; 16. Muricidea incisa; 17. Ocinebra intrafossa; 19. Chlorostoma aureotinetum; 20. Donax californicus; 22. Cerithidea sacrata; 23. Chione succinta; 24. [illegible] spectrum

Three of the numbers we could not make out, but the remaining shells, besides the duplicates, were Macoma secta, Chione simillima and Muricidea feveolata. All were named from duplicates in the collection made by the "Geological Survey" in the State University museums.

Another reader wishes to buy the "Ornithology" of the "Geological Survey" from any one who will sell it for a reasonable price. Please address "RURAL PRESS Science Club."

G. W. Michaels, Jr., Morro, San Luis Obispo county, and John H. Orcutt, San Diego city, have named sea shells to exchange and for sale. We have received from them some carefully prepared boxes, and we are glad to find such earnest collectors on our beaches. Our State has a long sea-front, and those interested in conchology inland, and in the East, must look especially to our southern coast for their main supply. The difference in color and rotundity between shells of the same species that we have gathered in Mendocino county, and those of Morro bay and San Diego is very marked. Those from the south have a much more robust form and brighter color. We can detect them easily even when mixed together.

A. R. Brewster, Pala, San Diego county, has shells for exchange. Miss P. L. Parker, Rio Dell, Humboldt county, Cal., has dried and pressed plants. She will also send them fresh, packed in wet moss, and will exchange for minerals and plants. The Eel river, near which this lady resides, is a very interesting locality.

J. B. Hickman, Watsonville, Santa Cruz county, has a large collection of botanical specimens for exchange.

Henry E. Dore, 512 Sacramento street, S. F., wishes to obtain the addresses of those who will exchange shells. He also wishes to know the names of the

Best Works on Conchology.

We answered this question in a former number, but as some of our readers may wish to know, we will state that Tryon's is considered the best, but it is expensive. The cheapest form is $3 a part, or $12 a year. The finest conchological library we have found yet is that of the State Capitol, in Sacramento. But when we made a visit there a few months ago and sat for three or four days in the alcove, where some 40 conchological works were shelved, and deliberately cut the leaves for the first time, of books bearing dates from 1845 up, rare old works out of print, many of them, and then thought of our sea coast, we felt rather sad.

Miss E. McMeekan, Arcata, Cal., has fossiliferous rocks and pressed plants for exchange. These plants she will press or dry in sand. She has minerals also for exchange.

Arthur F. Gray, Davenport, Mass., sends a long list of desiderata that we would like to reprint if we had room. He wishes American land shells, and offers a liberal exchange for several of our rarer species. He also wishes slugs properly preserved in alcohol.

M. A. Mitchell, Waldo, Florida, writes: Please inform your readers that my collection is exhausted, but I hope to be able to offer 100 or more species of shells next winter, and also send me another copy of your paper.

Miss Ida Wilmer, Newcastle, Alabama, wishes to renew her exchanges with the "Club." Miss Wilmer keeps a large stock of specimens on hand, all done up in boxes ready for exchange at any time. "Black Band" iron ore, "Red Mountain" iron ore, "Needle" iron ore, limestone, etc., also, coke made from Black Creek coal. For these she would like to obtain nicely stuffed birds and stuffed squirrels, coral, minerals, plants and fresh-water shells.

On account of recent absence from Berkeley, we have fallen somewhat behind in our work. Besides exchanges, we hope next time to be able to present you with an article on science, as usual. Prof. Keep, of the Alameda High school, Supt. Gilson, of Oakland, and A. W. Jackson, of the State University, will furnish articles for our "Club" shortly, and we hope, with the good wishes of our friends and collectors, that our "Club" will grow and prosper.

Taxation of Imitation Wines.

The Martin L. Clardy bill, at the present time before the United States House of Representatives, is a much-needed and a just measure, which, on the first announcement of its provisions, was hailed by upright and honest business men as an installment of justice, and as the forerunner of another measure of more ample scope, capable of meeting the case of all fraudulent dealing, equally in wholesale as in retail business.

That thieving by adulteration and spurious imitation of genuine goods is very general in most branches of trade, is an accepted truth. And the results of analyses hitherto made of many articles indispensable in daily life, serve only to throw more and more light upon it.

Now the particular class of falsifications, if not adulterations, which have called for such a measure as the present, have a live significance in California, for they aim a deadly blow at her newest, most promising, as well as her most lasting industry, viz., wine of all kinds, and the product of wine—pure brandy. Moreover, the quarter from which it emanated is the very one to take steps to protect the vineyard interests—the State Viticultural Commission, the members of which are all and each deeply interested in wines and vineyards and know the wants of vineyardists, and the value of an untarnished name for their products in the markets of the world—on which account their action merits serious consideration at the hands of legislators.

Now, one reason for my offering this communication is because the controversy, as it is being carried on in the press, appears just now in danger of being marred by the raising of false issues and confusing of ideas; and so a few words of explanation and definition of terms may be useful to keep matters straight. Champagne wine, wherever made, is a definite thing; a delicious, wholesome and necessarily an expensive production, when prepared in the only way in which it can be perfected, viz., by fermentation in the bottle, during which process the carbonic acid, to which it owes its persistent briskness and life, is produced in a nascent state, and which is to a considerable extent so incorporated with the liquor as to be only with some difficulty, and the employment of heat, completely driven off, as every scientific chemist who has experience in the analysis of wine knows.

Wine charged with carbonic acid gas from a gas machine is another thing altogether. It is not champagne at all; and when offered for sale, disguised with imitation labels and capsules, so as to cheat any but the experienced, it is a blazing, effulgent fraud. And be it observed right here, that the contention is not about wholesomeness or unwholesomeness—that will be dealt with afterwards—but about imposition and rascality, as opposed to fair dealing and honesty.

Here on the table at which I am writing are two of these spurious wines, one labeled Golden champagne, and the other, Sillery Mousseux, Imperial, *qualite superieur*, extra dry! These are bottled and fixed at all points, only the corks bear no name, just like the genuine articles, but are only clever and mischievous frauds, well calculated to deceive the inexperienced.

Now, when the Clardy bill becomes a law, by simply requiring a stamp to be affixed to the bottles the public will know what they are paying for, and any attempt to evade the stamp will soon bring the offender to his senses in the U. S. Revenue Courts. Lastly: This bill is not *ex parte* legislation, but a measure solely to protect fair and just business. It can do the upright preparer of injected wines no harm. He will sell his manufactured article openly, and the rest will depend on the liking or otherwise of his customers.—*John I. Bleasdale, in Bulletin.*

COUNTRY SCHOOL YARDS.—Nothing seems to make the country college with a single professor—the school-house—so attractive as pleasant surroundings. A grove, or even a few handsome trees, serve to give it an air of quiet pleasantness which nothing else can. Yet there are many public school buildings in this country that are destitute of this agreeable feature. Every teacher, though he should teach but a single term in such a place, ought himself, if the directors will not, plant some shade trees around his rural academy. A few hour's labor, itself a benefit to the worker, and the task would be accomplished. Every teacher should see the work done. It would be an investment that would return large permanent dividends, not to the original investors only, but to all his successors.

The Anti-Debris Convention.

The Anti-Debris convention called by the Supervisors of Sacramento county, met on Wednesday, May 3rd, at Sacramento.

P. H. Beckley, Chairman of the Board of Supervisors of Sacramento, called the meeting to order, and appointed a Committee on Organization.

The Committee on Permanent Organization reported the following:

For Permanent Chairman, Hon. William Johnston, of Sacramento.

For Vice-Presidents, Supervisors Wright, of Yuba, Inglis, of San Joaquin, Quint, of Colusa, Brock, of Sutter, Beckley, of Sacramento, Newton, of Yolo, and Mayor Brown, of Sacramento.

For Secretaries, T. H. Berkey and A. S. Greenlaw, of Sacramento.

The report was adopted, after Mayor Bingham, of Marysville, was added as a Vice-President, on motion of General J. F. Sheehan.

The Chair then named W. S. Green, of Colusa, James McClatchy, of Sacramento, J. C. Campbell, of San Joaquin, George Ohleyer, of Sutter, and E. A. Davis, of Yuba, as the Committee on Resolutions.

President Johnston on taking the chair made a brief address.

Mayor Brigham, of Marysville, made a speech pointing out the great damage done by hydraulicing; how the Yuba's channel is filled; the Bear river a wanderer without a bed; the Feather river filling and threatening the crops of the Butte basin and wandering away among rich farming lands, and the Sacramento river threatening to go over at Gray's bend, and find a new channel through Yolo county because of slickens bars at the mouth of the Feather. In that event Sacramento will be left miles from the river and on an unnavigable, currentless slough.

George Ohleyer, of Sutter, spoke to the same effect, and said he feared the damage was already too great to be repaired, as the Sacramento river, with no freshet, is flowing through its banks in half a dozen places into the tule basin, and is thereby loosing its carrying power. He illustrated the condition at Gray's bend by a map, and also a diagram of the Feather river, and pointed out how that river is on the eve of being diverted.

At the evening session the following resolutions were adopted:

WHEREAS, At least 100,000 acres of the finest lands in the Sacramento valley have already been destroyed, and hundreds of thousands of acres of such lands are now in imminent danger of destruction by the unrestrained flow of detritus from the hydraulic mines on the headwaters of the several tributaries of the Sacramento and San Joaquin rivers: and whereas, the said flow of detritus has already filled the channel of many miles of the navigable rivers of the State, and its continuance must result in a very short time in the complete destruction of said rivers and their tributaries, throwing them, in broad, shallow, muddy streams, over the fairest portion of the State, annihilating not only the productiveness of the lands, but the cities, towns and villages; and

WHEREAS, The navigation of the bay is now imperiled, and the harbor itself must at no distant day succumb to this devastating agency, and ruin overtake the metropolis of the Pacific, thus completing a picture of desolation never before beheld by the civilized world; and

WHEREAS, There are but few individuals or corporations comparatively engaged in this species of mining; and

WHEREAS, This condition of things has already led to an exodus of good citizens from the State, the end of which no man can see; therefore, be it

Resolved, That it is the duty of the State of California, as a moral person, endowed with rights, and resting under obligations, to defend herself against such fearful mutilation, and protect the people of the valleys in the peaceful and undisturbed enjoyment of the fruits of their labor.

Resolved, That we indorse the action of Attorney-General Hart, in bringing suit against some of the hydraulic mining companies, in the name of the State, to test the right of one man in the pursuit of wealth to destroy the property of another, as well as the common heritage of this and future generations—the navigability of the rivers of the State.

Resolved, That, as experience has taught us that the water will readily carry off, without serious consequences, the washings of quartz and drift mining, we wish to say in the most emphatic manner to the miners of the State that we have no contest with any one engaged in such mining.

Resolved, That we have no contest with those hydraulic mines which take care of their debris, but it is against those, and those only, which wash great areas of earth into our streams.

Resolved, That the political party that does not recognize the just principle that every man must so use his own as not to injure his neighbor, is not worthy the support of the people.

Resolved, That the attention of the press of the State, especially the metropolitan press, is called to the immense importance of this matter, and to the fact that it has, in our judgment, failed to take that comprehensive view of the subject which its importance demands.

Resolved, That the people of the Sacramento valley demand of the executive, legislative and judicial branches of the State that just protection of our property for which governments are established and maintained.

Resolved, That the contest already begun against this system of desolation and destruction of our State is a sacred cause, which should enlist the sympathies and active co-operation of all her people; that the burden of the conflict should not be borne by the few who have heretofore struggled to stay this great destroyer, but should be shared by all the people of our great valley; that in order to reinforce those who are now at the front to concentrate all efforts in united action, we do most earnestly recommend that the several Boards of Supervisors present on this occasion meet together and take such action in the premises as will enable their several counties to contribute that aid and encouragement which only united action can bring; and we hereby pledge ourselves to the support of such action.

Resolved, That the action of the Board of Supervisors of Sacramento county, in calling this convention together, meets the unqualified approval of the people of this valley.

The Supervisors' Meeting.

On the day following the convention the Supervisors of the river counties met in Sacramento. I. N. Brock, of Sutter, was chosen President, and T. H. Berkey, County Clerk of Sacramento, Secretary. After remarks by the chair, S. D. Wood offered the following preamble and resolutions:

WHEREAS, It has become apparent that there must be an organization of the counties of the valleys threatened with destruction by the flow of mining debris; therefore be it

Resolved, That an organization be and is hereby formed by the Boards of Supervisors of the counties of Yuba, Sutter, Yolo, San Joaquin, Butte, Sacramento and such other counties as may hereafter unite with them, to be known as the Anti-Debris Association.

Resolved, That there shall be an Executive Committee, composed of one member from each Board of Supervisors—to be elected by the board—whose duty it shall be to meet and elect one of its members as chairman, to meet from time to time at the call of the chairman, or as may be otherwise provided, to consult for mutual protection and to propose measures for the common good. Also to report the same back for action and approval by the several boards, and to carry out generally such measures in connection with the object of the association as the committee may determine upon or the Boards of Supervisors of the several counties may order or direct

The resolutions were adopted with this amendment:

That the various supervisors proceed to form an Executive Committee—consisting of one member from each board—for the purpose of gathering information in regard to the debris question, and ascertaining the best method of dealing with it.

The resolutions were then signed by Chairman Beckley, of Sacramento; Chairman White, of Yuba; Chairman Quint, of Colusa, and Chairman Brock, of Sutter. Newton, of Yolo, would wait for n expression of the will of his constituents before giving his approval.

Each Board then selected its member of the Executive Committee as follows: Yuba, S. D. Wood; San Joaquin, Wm. Inglis; Colusa, E. R. Graham; Sutter, I. N. Brock; Yolo, R. W. McGowan; Sacramento, P. R. Beckley. A copy of the resolutions and minutes was ordered sent to all the counties represented, and to Stanislaus county. The Executive committee then organized, with P. R. Beckley Chairman and John McFetrish Sec'y. After remarks by various gentlemen the meeting adjourned, Supervisor Beckley, on behalf of Sacramento county, thanking the Supervisors from abroad for their attendance.

CANALS ON THE PLANET MARS.—A curious discovery, made by Signor Schiaparelli, Director of the Royal Observatory at Milan, seems to start again that old and unanswerable question, "Are the planets inhabited?" This Italian astronomer is one of the most assiduous watchers of the planet Mars. It was he who, in 1877-78, first detected the many dusky bands which traverse and subdivide the ruddy portions of the martial orb. Again, in 1879-80, when the position of the planet was favorable, he re-identified these strange lines; but during last January and February he has been able to observe and map out, in more than 20 instances, duplications of the dark streaks "covering the equatorial region of Mars with a mysterious network, to which there is nothing remotely analogous on the earth." The Italian astronomer has styled them "canals," for they bear the appearance of long seaways, dug through the martial continents, as if a mania for short cuts had seized the inhabitants of the planet, and everybody residing there had become an active M. de Lesseps.—*London Telegraph.*

APPROPRIATION FOR CALIFORNIA.—The House Committee agree to the following appropriations: For continuing the improvement of Oakland harbor, of $200,000. This amount is granted without any conditions such as have proved embarrassing in the last two appropriations for Oakland harbor. For the improvement of Humboldt bay $40,000; for Wilmington harbor $75,000; for San Joaquin river $40,000; for Sacramento and Feather rivers $250,000. This amount is granted simply for the improvement and protection of the channels of the Sacramento and Feather rivers. The debris question, it will be observed, is not mentioned in the phraseology thus employed.

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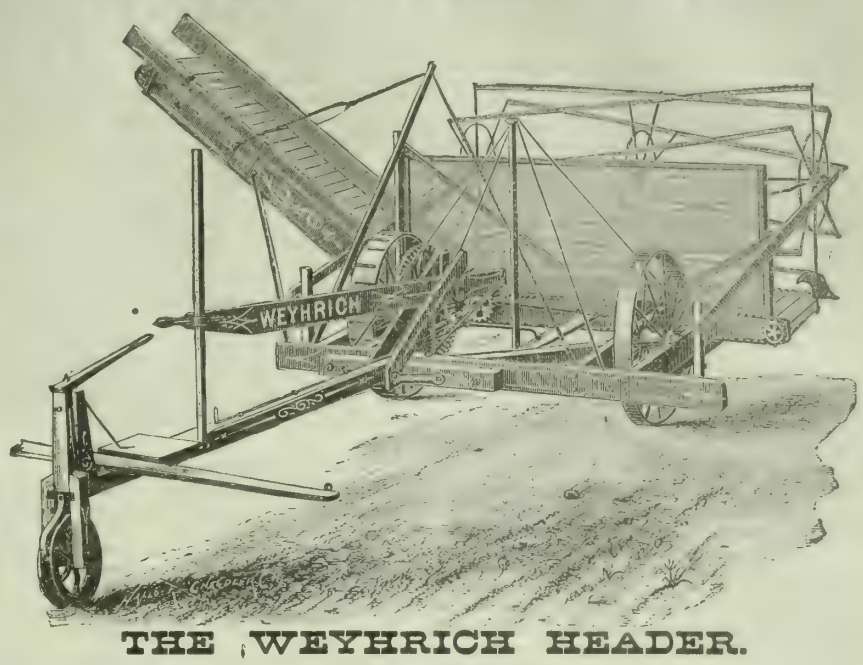
Hand Lever Rake, Weight, 285 lbs $35.00
Self-Dump Rake, " 291 " 40.00



THE WEYHRICH HEADER.

Points of Superiority:

First. Its gearing is arranged between the driving and grain wheel, which counter balances the overhanging weight of elevator. Second.—Its positive and equal sickle motion. Third. Its adjustable lever requiring no weights. Fourth.—Its aprons driven from extreme end of platform. Fifth.—Its durability of construction and adaptability to all conditions of work.

The marked superiority of our Header has long since ceased to be questioned. They have fought their way to the front against the most determined opposition. Our long experience in manufacturing has taught us to know that he who manufactures an article with a view to establishing permanency in his business, should always make first-class work. This axiom of truth you will more fully understand when you examine the merits of our machine.

PRICES.—10 ft. Single Gear Header, 40 in. Draper, $350.00; 12 ft. Single Gear Header, 40 in. Draper, 375.00; 14 Single Gear Header, 40 in. Draper, $400.00

THE DEERING NEW Iron Enclosed GEAR MOWER.

LIGHT, STRONG AND DURABLE.

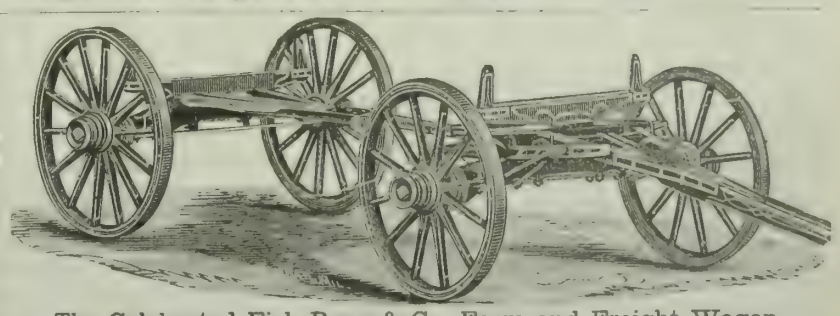
Must be seen to be appreciated! It has light draft! Weighs only 575 lbs., and is easily managed. Has all modern appliances for convenience of handling, and is fully warranted.

Cuts 4 feet 3 inches.
PRICE.....$100.00.
☞ SEND FOR DESCRIPTIVE CIRCULAR.

The cut presented here is a genuine representation of the New Deering Mower. It is emphatically a Light Mower, weighing only 575 lbs. when ready for the field. It is emphatically an Iron Mower, as there is not a single piece of wood used in its construction, excepting in the pole, levers being made of iron. The gearing is completely inclosed, so that no dirt nor dust can mix with the oil to wear it out, and so that it cannot catch the reins or the fingers. The gearing is wonderfully perfect in its working, causing the Deering Mower to run with great ease, and almost without noise. The bearings are made with great care, and can be easily replaced if they become worn. The draft of the Deering Mower is very light, which is caused by its very light weight, draft connections, etc. The lifting lever is remarkably easy and efficient in its operation. The drag-bar is hinged to the cutter-bar in such a manner that when it is desired to fold the cutter-bar it is tilted back on the drag-bar, throwing all its weight on the latter. The end of the track-clearer rod is then fastened to the frame, holding the cutter-bar very securely. This is the most convenient, simple and secure method yet invented. The tilting-lever is so connected with the cutter-bar as to allow the latter to have an easy rolling movement, which enables it easily to pass over knolls and stones, and other obstructions.

WHEELER'S PATENT THRESHERS AND CLEANERS —AND— Railway Powers.

1 Horse Double Geared Railway Power	$175.00
2 " " " " "	225.00
3 " " " " "	325.00
Wheeler's Patent 26 inch Thresher and Cleaner	275.00
" " 30 " " "	300.00
" " 34 " " "	320.00
Trucks for mounting 1 and 2-Horse Powers	70.00
Trucks with Frame and Windlass, for 3-Horse Powers	90.00
Trucks for mounting 26 inch Thresher and Cleaner	70.00
" " 30 " " "	75.00
" " 34 " " "	100.00



The Celebrated Fish Bros. & Co. Farm and Freight Wagon,

Superior in Strength, Durability and Lightness to any Wagon Manufactured
Warranted to run lighter and wear longer than any other Wagon in America.

REVISED PRICE LIST Extra Prices for Extra Wide Tires.	Estimated to carry.	Gears only with Neckyoke, Whiffletrees, etc.	Wagon with Eastern Double Box, Cal'forna Brake, etc	Wagon with Cal'forna Stake Rack and Roller Brake
2¼ Thimble-Skein Wagon	2,500 lbs	$80 00	$120 00	$125 00
3 " "	3,000 "	85 00	125 00	130 00
3¼ " "	4,000 "	100 00	145 00	150 00
3½ " "	5,000 "	110 00	155 00	160 00
3¾ " "	6,500 "	130 00	175 00	185 00
4 " "	7,500 "	145 00	190 00	200 00
1½ Iron Axle "	3,500 "	100 00	140 00	145 00
1⅝ " "	4,500 "	110 00	150 00	155 00
1¾ " "	5,500 "	120 00	165 00	170 00
1⅞ " "	6,000 "	130 00	175 00	180 00
2 " "	6,500 "	140 00	185 00	195 00
2¼ " "	7,500 "	175 00	220 00	230 00

HEADER WAGONS.

3¼ in Thimble-Skein, with Hounds Tires, 2¼x¼ in	$85 00
3½ " " " " "	90 00
1½ " Iron Axle " " "	110 00
1¾ " " " " "	115 00
2 " " " " "	125 00

TULE WAGONS.

3¼ in. T. S. Gear on'y 5 in. Tire, Holmes' Pat. Oilers	$120 00
" " " 6 " " "	125 00
" Iron Axle Gear 6 " " "	140 00
" " " 6 " " "	145 00

PRICES OF WAGON BEDS—10 ft Eastern Box, with Spring Seat, $40; 11 ft Eastern Box, Spring Seat, $45; 11 ft, Rack with Tool Box and Seat, $45; 12 ft. Rack, Tool Box and Seat, $50; 14 ft Rack, Tool Box and Seat, $55.

Santa Barbara Roses.

Mrs. Col. Otis writes the Los Angeles *Times* an appreciative account of the recent rose fair in Santa Barbara, which we take pleasure in reproducing: There were about 300 varieties of roses displayed, not so large a number as usual, but still enough, when added to the infinite variety of other blossoms, for artistic effect and brightness. The large audience-room of the theater was thrown open for the exhibition. Entering, this is the picture that greeted the eye. Spreading fan-palms and branches of the graceful date-palm arranged in pretty and quaint designs upon the walls; long, drooping festoons of evergreen encircling the entire front of the galleries, and at the points where they were caught up, hanging baskets filled with trailing ivy and brilliant flowers; the pillars supporting the galleries trimmed with wreaths formed of the slender sprays of the pepper-tree. Stately pagodas 15 ft. in height, with roofs of evergreen and spires of scarlet geraniums, the sides formed of roses, pink, and white, and red, of creamy roses with blushing hearts, of roses yellow as gold, and roses of crimson dyes, and under the open arches, banks of roses piled till the hand could lose itself in their depth; alternated by beds of sweet peas of every shade and hue in which their fragrance blossoms, and petunias, with their rich

Kaleidoscope of Colors,

And in the center a magnificent pyramid of calla lilies. Then there were tall flower-built temples, carpeted with green mosses and ferns, with miniature gardens of blossoms on every hand, and glass globes filled with pretty gold-fishes, shining like sunbeams in the water; massive crosses of evergreens mingled with the rich, glossy, deep-veined loquat leaves, with center of pure white flowers; a tall easel covered with drooping ferns and flowers, and in its center a landscape formed of green leaves and flowers, with an adobe building represented by bits of bark; along the sides of the room great

Glowing Banks of Roses,

Of every shade and color, from pure white to deep royal red; from those with creamy petals touched with blushing pink, to those of a deep reddish orange, glowing and warm as a gorgeous sunset; singing birds in gilded cages among the flowers; large jars filled with pure white callas, date palms heavy with blossoms, orange buds and blooms; pretty striped grasses and tall bunches of feathery pampas plumes; richly dressed ladies, and children in bright colors, like happy butterflies flitting hither and thither—a picture bright enough for the old garden days when the world was young. In the center of the room were long tables covered with flowers of every description and every clime, arranged in bouquets, banks, pyramids and various beautiful and curious devices. Among other bright things, I noticed a new variety of the

Passion Flower.

It was much larger than the ordinary purple one, and was of a deep rose color. Near it was the flower of the *grevilla robusta*, with its long, slender, orange-colored petals rising like a crown above its green leaves. Camellias were there in rich profusion, red and white, with their smooth, waxen-like petals. The red blossoms were gathered from a bush that has yielded 3,000 of these beautiful flowers since the 1st of January last. Great masses of fuchsias, of every known shade and color, dropped their graceful heads among the other plants, and calla lilies, white and pure, were arranged in huge bouquets and pyramids. Immortelles, pink and white, lay

Like a Blush

Upon the tables, while the meek-eyed pansies nestled in their velvety softness in the fragrant bloom about them. Daisies white, with golden hearts, nodded to the dainty garden pinks, and the orange lipped nasturtians gleamed like a sunset cloud beside the pale white of the clustering Japanese snowballs. One of the tables was beautifully fringed with the delicate spray of the tree-fern, and close by it was laid a leaf and pretty blossom of the fan-palm. Cactus blossoms were shown in rich profusion, and the showy purple and crimson blossoms of the *cineraria*, and beside them the tulip shaped orange-colored blossoms of the *trittania*. Masses of laburnum looked into the faces of scarlet and pink poppies that nodded sleepily above the pretty blossoms of the *exocharda grandiflora*. Pinks and sweet peas mingled their perfume with the odor of the Eastern lilac. *Chorezemas ilicifolia* were clustered near the shining aloes, and a pile of strange-faced purple blossoms. There were two beautiful Santa Barbara

Seedling Roses,

Which challenged particular admiration. One was of a creamy white, large and many-leaved—child of a red rose—yet it was as fair as a lily, and rich in fragrance. The other, and smaller one, was a lovely blush rose, its delicate pencilings of finish most exquisitely shaded. Near by were the long, flowering sprays of the tamarisk, an African plant, with small, delicate, pinkish-brown blossoms; and not far from these, a stately golden Marguerite daisy showed its head. Azalias and grand crimson-colored, velvety-looking lilies, with their rich tracery of old gold, clustered in a brilliant group, and tri-colored amaranths, petunias, chrysanthemums and perfumed mignonette kept charming company. One private table alone showed

Seventy Varieties

Of tea roses. They were from a garden containing 127 varieties of the tea rose. From another garden were great flowering "snow-balls," 18 inches in circumference; and a strange freak of nature was shown in a double cala lily, about twice the size of the single flower. Among the many charming floral devices was a dove, formed of the tiny white Banksia roses. It was suspended by a slight wire frame from the ceiling, its white wings spread as if for flight, and in its mouth the olive branch of peace. On the table beneath it was a large tablet, formed of red, white and pink verbenas, with the name of the florist in delicate evergreen sprays. Near this was a beautiful basket of choice roses of every shade, size and color, and resting upon its front a star made of white verbenas, with center of yellow immortelles, like

A Pale Gleam of Light.

At a little distance stood a cross of pure white roses, and beyond a large anchor of royal purple bloom. Upon the end of the table lay a large horse-shoe, formed of the bright yellow flowers of the Scotch broom. Upon another table was an exquisitely beautiful lyre about five ft. and a half in hight (a native of California) the upper part formed of deep crimson roses, the sides of roses of varied hues, the strings of slendor branches of the Banksia rose, with the tiny white blossoms, like hanging bells, pendant from the stalks. There was but one sign of esthetic craze in all this wide display—

One Solitary Sunflower,

Bright and large-eyed, peered from the mazes of bud and blossom, august in size, and yellow as the face of the sun it bares. In spite of all burlesques and "crazes," who does not love that watching, faithful sentinel of the sun?

Around the Lower Bay.

EDITORS PRESS.—It was the writer's good fortune to recently make a flying trip to San Jose, going down on one side of the bay and returning on the other. A more delightful trip, for a short one, could scarcely be taken anywhere at this time of the year. The native flora is now in perfection, and more beautiful than pen or brush could possibly picture. Any lover of nature, possessed of leisure and means, could not spend a few hours more pleasantly than by making a hurried trip through the wonderfully fertile Santa Clara valley at this season. Here are some of the oldest, and perhaps most remunerative orchards in the State. And though the past years have developed insect pests to a degree threatening the total destruction in instances of some of the most valuable fruit trees; yet in every direction may be seen evidences of intelligent energy exercised by orchardists to cope with them. They will, if they have not already, obtain the mastery, and their faith in the future of fruit growing is evidenced by the thousands of young trees planted during the past season. The "measuring," or "canker worm," is doing much mischief in some apple orchards, and fighting them is entailing no little expense to their owners. But they will succeed in their destruction, for they have "enlisted for the war." There are many fine fields of grain which bid fair to return their owners good crops, but it is feared that not a few acres will be cut for hay. Intersected as this valley now is by the best managed railroads in the State, and the facilities which it enjoys of frequent and cheap transportation for passengers and products to the metropolis, may it not be that these lands can all, or nearly all, be more profitably used in other crops than grain? COR.

SALE OF HORSES AND CATTLE.—All interested in fine stock should make a note of the large sale of horses, Jersey and Ayrshire cattle, which is advertised in the PRESS this week. The sale will no doubt draw a large concourse to the Oakland Trotting Park (near Shell Mound), and the occasion will be an interesting one. The animals are the property of two owners, part from Thornburgh estate and part from the famous Yerba Buena ranch of Henry Pierce. Catalogues of the animals which will be offered can be had as stated in the advertisement.

THE CALIFORNIAN FOR MAY.—The May issue of the *Californian* has a most excellent portrait of Longfellow from a recent photograph. Prof. Sill has, in the body of the magazine, an article on the dead poet that is at once discerning and appreciative. A profusely illustrated series of "Studies of the California Missions," by Frances F. Victor, is begun in this number. So much that is romantic and fascinating in the earlier history of California is connected with the missions, that these articles will prove of unusual interest. Pictures are given of the missions San Gabriel, San Luis Obispo, Carmel, San Diego, San Buenaventura and San Juan Capistrano. That of the Carmel mission is a full-page sketch by the well-known artist William Keith. A character poem by J. Russell Fisher is also accompanied by a spirited engraving, "Only a Tramp." Amelia W. Truesdell has a poem entitled "The Lost Jeannette," and there are numerous other articles of ability, including several stories of marked power. James O'Meara tells the story of the celebrated Mier prisoners. Altogether this is one of the best issues of the *Californian*, and it should be duly appreciated.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co.'s SCIENTIFIC PRESS PATENT AGENCY, 252 Market St., S. F.

FOR THE WEEK ENDING MAY 2, 1882.

257,273—RIDING SADDLE—Joseph Bassler, San Jose, Cal.
257,213—TACK—A. J. Culbertson, San Andreas, Cal.
257,306—STATION INDICATOR—Michael Farley, Portland, Oregon.
257,166—WATER AND AIR WHEEL—David B. James, S. F.
257,350—POCKET—David Lubin, Sacramento, Cal.
257,351—PIN—David Lubin, Sacramento, Cal.
257,352—ENVELOPE—David Lubin, Sacramento, Cal.
257,178—OIL CUP—John S. McBride, Sacramento, Cal.
257,357—UNDERGROUND CONDUIT FOR ELECTRIC WIRES—A. F. McGrew, S. F.
257,234—CAR COUPLING—Frank Miller, Olema, Cal.
257,350—SELF ACTING BLOW PIPE LAMP, ETC.—Thos. Poyser, S. F.
257,239—UTILIZING SPENT LIME FOR BRICK AND TILES—E. L. Ransome, S. F.
257,241—PLOW—Milton Ross, San Jose, Cal.
257,244—CAR COUPLING—A. Schulenburg, S. F.
257,249—BRAKE BLOCK—Edward G. Spencer, Iowa Hill, Cal.
257,254—TWO WHEELED VEHICLE—Samuel G. Thompson, Santa Rosa, Cal.
257,420—NUT LOCK—Wm. C. Watson, Puyallup, W. T.
257,219—ENDLESS TRACK FOR SEAMING CYLINDERS FOR CANS—Joseph P. Haller, S. F.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co. in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast Inventors transacted with perfect security and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of special mention:

ENDLESS TRACK FOR SEAMING CYLINDERS FOR CANS.—Joseph P. Haller. Assigns one-half to S. Wagenheim, San Francisco. No. 257,219. Dated May 2, 1882. For making the body of a can there are usually three operations: First, the material is fitted around a forming or seaming cylinder, its meeting or overlapping edges being held in place by a knife attached to the cylinder. Second, the seam is soldered; and lastly, the knife is raised and the soldered can removed from the cylinder. The work is ordinarily performed by one man, and requires his attention to three distinct operations, so that while using his hands to get the material upon the cylinder, or to remove it, his soldering tools must be laid aside. Therefore, there is loss of time. This method is open to the further objection, that it does not distinguish between work requiring skill and work calling for no skill. The second operation—that of soldering the seams—requires skilled labor, while the simple fashioning upon or removing from the cylinder may be done by boys. This brief statement of the method now employed will serve to show the object of this invention. It is an endless track for seaming cylinders for cans, the object of which is to facilitate the work of soldering or seaming cans, and to make it possible to separate skilled from unskilled labor, whereby more of the former may be utilized. The invention consists of a circular guide or track rigidly bolted upon a table upon which track the seaming cylinders slide. A boy stands at a treadle with a seaming cylinder before him. He presses down a treadle and mechanism raises the knife. He fits the material around the cylinder, and, taking his foot from the treadle, allows the retaining knife to press down and hold the edge. He slides the cylinder along the track and directs his attention to another one. The first cylinder is immediately soldered by the skilled workman, who stands beyond the boy. He slides the cylinder along to another boy, who removes it.

TACK.—Andrew J. Culbertson, San Andreas, Calaveras county. No. 257,213. Dated May 2, 1882. This tack is intended more particularly for securing layers of leather or other material together. The tack is made of copper or other malleable substance, and consists of a round and nearly straight body, with a bar head resembling the letter T, and it has a tapered and slightly flattened point, so that when driven through the leather and into contact with a piece of iron upon the reverse side, this point will be turned back and enter the leather from that side, so as to clinch or rivet it firmly. The tack is specially useful in securing the parts of harness together and in the formation of long, heavy loops, the work being done more quickly than by sewing, and it will not rip.

BRAKE BLOCK.—Edward G. Spencer, Iowa Hill, Placer county. No. 257,249. Dated May 2, 1882. This is an improvement in brake blocks for vehicles, and it consists in the improvement in the details of construction in fastening the block to the brake beam, whereby it is held securely and may be readily removed when necessary. The method of fastening would be difficult to describe without engravings, but it is done by means of clamps and nuts in such a way that it cannot get loose.

STEAM ENGINE GOVERNOR.—Lee W. Andrews, Live Oak, Sutter county, Cal. No. 256,946. Dated April 25, 1882. This governor consists of a two-part cylindrical valve, reciprocating in a cylinder so as to alternately expose and cover ports which open through the sides of the cylinder. The two parts of the valve close against seats at the center, and are caused to close against these seats by springs acting against their outer ends. A rod, which is caused to reciprocate by connection from the engine shaft, passes longitudinally through both parts of the valve, and another rod, which also passes through both parts of the valve, is connected with an oscillating balance-wheel having a coiled spring. The first rod has a collar fixed to it midway between the cross-bars which extend across each part of the valve, and pawls which are hinged to the inner sides of these cross-bars engage this collar at each end, so that when the engine moves slowly, the two parts of the valve move simultaneously, each moving the full stroke without cut-off. The second rod has two arms secured to it and projecting up beside the first, so that their ends are just beneath the pawls before mentioned. When the engine runs faster than the oscillation of the balance-wheel, these arms engage the pawls, so as to lift them alternately clear of the collar, when the exterior openings will close each part of the valve as it is released, and thus cut off the supply of steam to the cylinder.

TWO-WHEELED VEHICLE—Samuel G. Thompson, Santa Rosa. No. 257,254. Dated May 2, 1882. This invention consists in a peculiar and novel arrangement of the shafts, axle, springs, body and foot-board, whereby the unpleasant motion or jogging of the horse is prevented from being communicated to the wagon. The novel arrangement first consists in hinging the shafts to the axle, thus making their movement an independent one, not communicated to the axle, and also providing for their removal for the substitution of a pole when desired. It consists, next, in providing against the too great play or movement of the seat and axle, which, by reason of not being rigidly fixed to the shafts, would naturally turn unpleasantly. This is accomplished by means of a supplementary spring connection, thus steadying the body by securing it to the shafts, and yet allowing the latter to have their independent play between limits without affecting the body. It also consists in hinging the foot-board and connecting it by a spring with the shafts or cross-bars between them.

CAR COUPLING.—Adolph Schulenberg, S. F. No. 257,244. Dated May 2, 1882. This improved mechanism for coupling or uncoupling cars consists of an arm suspended from a point near its middle beneath the end of one car, having a sort of ⊣-shaped head pivoted to its front end. The lower end of this head is formed to drop through a slot in a bar which projects from the opposite car. A latch is pivoted to the side of this head, and the upper end of the head is connected by a chain with a rod or lever, by which it may be raised out of the slot in the opposite bar, when the latch will hold it up until the cars have been separated. When the cars come together the slotted bar passes beneath the suspended arm, first described, and raises the coupling hook open, gliding beneath it until it reaches a point where the pin will fall through the slot and couple the cars.

SEWING MACHINE ATTACHMENT.—Albert A. Fisher and Albert Hart, S. F. No. 256 992. Dated April 25, 1882. This is a darning and braiding attachment. It consists in a plate adapted to hold and direct the braid, so that it may be sewed on underneath the goods, and thus leave the stamp clear above for the needle to follow; and in connection therewith, and in order to render the use of this braiding plate practical and facilitate the operation, it consists further in a peculiar plate secured to the presser-arm, and adapted to be struck by the oscillating needle-arm in such a manner that the cloth will be immediately relieved from the presser-foot, and allowed to make sharp turns upon the needle as a pivot point.

PLOW.—Milton Ross, San Jose. No. 257,241. Dated May 2, 1882. This relates more especially to certain improvements in those plows for vineyard and cotton-field work, or in such other places where it requires handling of the team and handles to allow the near and effective approach of the plow to the vines. It consists in such a construction as will enable one to throw the beam over to the other side, or adjust it in such position as may be required, and also to shift the handles to conform to the changed position of the beam.

CAR COUPLING.—Frank Miller, Olema, Marin county. No. 257,234. Dated May 2, 1882. This car-coupling device consists in combination with two horizontal coupling blocks adapted to meet each other and engage under an influence of springs, which impinge upon the back of each other, of peculiar sliding guards lying parallel with the horizontal books, which prevent said hooks from parting, and of a means of displacing said guards and throwing the coupling-hooks to one side to uncouple or release the cars.

WHITE LEAD.

USE NONE BUT HOME MANUFACTURE!

Guaranteed to be Superior to any imported. The "Pioneer" White Lead is an entire Pacific Coast Production, and it is guaranteed free from any adulterations. It is STRICTLY PURE. It is superior in COLOR, BODY, FINENESS and DURABILITY to any made elsewhere in the world. Use no other. The use of the "Pioneer" White Lead means the employment of every industrial interest on the Coast—the Miner is employed, the Farmer raises the oil seed, the Mechanic makes the machinery and kegs, and the laborer has occupation. The purchase or encouragement of Foreign manufactures, is SUICIDE to every manufacturing interest on this Coast, and to our dependence as a community, and integrity in the employment of intelligent labor and to the consumers of our natural and home productions.

No matter how specious arguments of others may be, reflect and consult interests, not of the moment, but of the future, your own happiness and welfare, and that of your progeny, and promote and establish it by using nothing but HOME MANUFACTURES. In your painting wants use nothing but PIONEER WHITE LEAD.

Every First-class California Storekeeper has it.

RUBBER PAINT.

THE PACIFIC RUBBER PAINT

Was the Original RUBBER PAINT introduced on this coast. At time of its introduction the Averill Paint Company, since changed to the California Paint Company, was the only manufacturer of Mixed Paints in California. Our advent with an article of Paint, the manufacture of which was the result of a PRACTICAL experience of over 30 years, so completely retired the paint of our competitors that they in their utter ignorance of all business courtesies or honor, counterfeited our trademarks and labels. We ask the question, if they had confidence in their own stuff, why not make an honorable stand-up fight on the issue of QUALITY and merit. But they displayed their cowardice and contemptible littleness by evading an honorable and business issue, and resorting to putting up their mixtures under a title—RUBBER PAINT—which we had made for years before a record for, as the "Best Mixed Paint" made in the world—a record earned by our practical experience and public trial.

DON'T TAKE ANY MIXED PAINT EXCEPTING THE PACIFIC RUBBER PAINT. SEE THAT THE WORD PACIFIC IS ON EVERY LABEL.

Any other so-called RUBBER PAINT is a Miserable and Contemptible Imitation.

If your Storekeeper don't keep it, send to us direct, and we will with pleasure give you color cards, prices and such other information as you may desire.

WHITTIER, FULLER & CO.,

Manufacturers Pacific Rubber Paint. - - - - - - - - - San Francisco.

REDLANDS.

The owners of the Redlands tract having disposed of a large portion of their lands, now offer for sale one hundred and fifty acres only, at $125 per acre, this being all that will be offered the present season.

Redlands is located on the south side of Mill Creek Ditch, between Old San Bernardino and Crafton.

The lands are a clayey loam, very similar to the lands at the head of Magnolia Avenue in Riverside.

There are no fences on the land and no brush to clear off.

The tract is being put on the market as rapidly as the water can be put upon the lands, and no faster.

One thousand acres of the tract have just been surveyed and platted, about nine hundred acres of which have already been sold. The price of the remaining tracts is $125 per acre.

The third five hundred acre tract will not be put upon the market before the winter of 1882–3. In the meantime the system of irrigation will be completed by finishing the large reservoir conducting the waters of the Company to the reservoir in pipes and flumes, and laying concrete pipes through the tract to carry water from the reservoir to the highest point on each tract.

The main avenues are one-quarter mile apart, 100 feet wide, and run from northeast to southwest for convenience of irrigation. The course of the sea breeze is parallel with these avenues.

The cross streets are sixty feet wide, and run at right angles with the avenues every half mile.

The tract is subdivided into ten-acre lots, with a town site composed of smaller blocks.

Its situation is the finest in the San Bernardino Valley, the view being unequalled, and the elevation near 2,000 feet above the level of the sea.

The climate is unsurpassed, the location being so far inland that fogs and northers are almost unknown.

The title to the land is United States patent, and is therefore beyond question.

The Water Right is ample and beyond dispute. It consists:—

First—Of fifty shares in the Sunny Side ditch, one of the oldest ditches in San Bernardino county. This water will be conducted from the Sunny Side ditch to the Redlands reservoir in a ditch flumed part or all of the way, so that no water will be lost by seepage. The ditch is already constructed and will be flumed before the next irrigating season. This is good for 500 acres of land.

Second—An eighty-inch stream developed in Santa Ana Canyon. This stream is being piped down to the head of the Redlands ditch, so that the entire water supply will be handled without loss. This stream is good for 500 acres more of land.

Third—Two reservoirs will be constructed. The work on these is now in progress. The largest reservoir will have a capacity sufficient to cover 500 acres of land 9 inches deep with water. There is an abundance of winter water to supply this reservoir. The second reservoir will be much smaller. The large reservoir will cover 17½ acres of land, and will be 60 feet deep in the deepest place

Fourth—The water will be conducted from the reservoirs to the highest point on each ten-acre tract by means of concrete pipes, thus saving expense and wastage in the distribution of the water. These reservoirs will irrigate another 500 acres.

These water rights, reservoirs, pipes, flumes, ditches, etc., are the property of the Redlands Water Company,—a company incorporated to furnish water to the Redlands tract of 1,500 acres, with 1,500 shares of stock. One share of stock goes with each acre of land, so that when the land is all sold the owners of the land own and control the water, and they only charge such price for the water as is absolutely necessary to pay running expenses for handling the water in the most economical manner possible, as there are no ditches to clean.

Lands shown and business attended to promptly six days in the week only, on the tract.

☞ Send for Circular containing Map and further information.

Postoffice address, SAN BERNARDINO, CAL.

JUDSON & BROWN.

REDLANDS, 1882.

California Wheat and Flour.

We make about 1,700,000 barrels of flour a year, most of which is consumed here and in the Pacific States surrounding us such as Nevada, Arizona, Idaho, Montana and Colorado. Last year we exported nearly 500,000 barrels leaving about a million barrels for consumption at home and in the territories. As our population increases we shall consume a correspondingly large proportion of flour on this coast. The extension of the Southern Pacific and the opening up of connections with Texas insures us a market with Mexico and the Gulf generally for our flour, which will doubtless be quite important, though it remains for the future to say what the extent of that shall be.

The exports in 1881 were as follows:

	Barrels.	Value.
England	3[illegible]	$1,[illegible]
China	2[illegible]	1,127,912 78
Central America	75,291	351,162 41
Ireland	34,000	[illegible]
Hawaiian Islands	[illegible]	[illegible]
Japan	[illegible]	[illegible]
Panama	[illegible]	51,181 [illegible]
British Columbia	[illegible]	[illegible]
Tahiti	[illegible]	42,546 [illegible]
Siberia	[illegible]	25,270 00
Asiatic Russia	[illegible]	27,055 13
Mexico	1,422	[illegible]
Ecuador	[illegible]	4,238 90
United States of Columbia	[illegible]	8,750 52
Cape Town	5[illegible]	2,825 00
Peru	272½	1,357 01
Apia	250	1,565 00
Fiji	25	[illegible]
Germany	7	42 00
Norway	6	33 00
New York	2	10 00
Total	791,232	$3,557,392 78

This is by much the best showing that we have ever made—it being 250,000 barrels more than in 1880, and more than three fold the export of 1872. The principal increase was to Great Britain and Ireland, which took over 372,000 barrels or not far from fifty per cent of the whole. China takes the second rank last year though the value of the flour exports exceeded a million dollars. As to the rest on the list of countries to which we export is rather medium, though the quantities are small when compared with those already given. Taking in British Columbia, Siberia, Japan, Saigon in Cambodia, Fiji, Tahiti, Apia, Peru Ecuador, United States of Columbia, Central America, Panama, Mexico and the Hawaiian Islands, thus girdling as it were the Pacific, South Africa, Germany and New York were not forgotten in the distribution of our farinaceous favors, while even far distant Norway was remembered. France, Spain and Italy are also open to us and many of the countries previously noted can take a great deal more than they have ever yet purchased of us.

There is positively no limit to our possible exports of flour. Brazil for one customer is open to us as soon as ever we make up our minds to meet the East there on equal terms, and as soon as the Panama Canal has mixed the waters of the Caribean to those of the Pacific. Eastern Mexico, Venezuela and the larger portion of the United States of Columbia will also be open to our shipments.

As to China, the field for export there is illimitable. The consumption of a very small quantity of flour per head by even a per centage of the natives would take more than all the mills that could be erected on this coast for years could produce. Let but one-tenth of the population of that vast empire but become consumers and they would need 45,000,000 barrels a year. As it is now a considerable portion of them are acquiring a taste for California flour, though as a rule only superfine is shipped there. But a better description will ere long take its place.

The development of our flour trade this year is very promising. For the first three months of the year we shipped 182,398½ barrels or 25 per cent more than 1881, in and if this proportion should be continued through till the end of the year we would have shipped a round million barrels. As usual Great Britain took the lion's share, over 108,394½ barrels, while China took over 26,000 barrels; Central America, 22,730 barrels and the Hawaiian Islands about 6,000 or the rate of nearly 24,000 barrels per annum. This may seem as an indication of the probble future extent of this growing trade.

Our Present Markets for Wheat.

We exported in 1881 over 30,000,000 bushels of wheat, most of it from San Francisco, some from San Diego and Wilmington, which are becoming important outlets for the product of Southern California. The following table gives the destination of exports from this city:

Countries.	Ctls.	Value.
Europe	12,112,788.85	[illegible]
England	4 231 778.03	6,450 118 39
Belgium	[illegible]	2,470 736 12
France	[illegible]	1 935,170 97
Cape Town	[illegible]	[illegible]
Azore Islands	[illegible]	[illegible]
Germany	[illegible]	22,000 00
Central America	[illegible]	[illegible]
Hawaiian Islands	2,863 04	[illegible]
Japan	[illegible]	576 00
Tahiti	291 76	[illegible]
China	282 05	[illegible]
Australia	117 76	447 04
British Columbia	68.77	[illegible]
Asiatic Russia	50.06	[illegible]
Mexico	35.04	64 60
New Zealand	27.00	62 00
Total	19,393,760.17	[illegible]

Now before entering into an analysis of this table we will say that the total is as nearly double the 1880 export as possible, while it is 2½-fold that of 1878. This shows that the doubling up of our export to Great Britain did not seriously effect our prospects in that market, though the Eastern shipments increased at the same time. It did, however, interfere with Russian exports which have been smaller, showing conclusively that our improved machinery and dear labor can beat the backward cheap labor of Russia in the markets of the world. But Russia will not consent to be thus shouldered out even if the price of wheat should have to go lower. The result would be not only lower prices, but increased consumption as well, so that the increased production of this coast would not go to waste.

In the table by much the greater portion of the exports, indeed four-fifths of the whole is credited to Ireland. This, however, means that most of this is cleared to Cork, which is one of the leading call ports of Europe. On arriving at Cork the wheat if sold is directed to its destination in England or the continent; if not it remains till sold, or proceeds to Falmouth, another important port of call in the south of England. It thus appears that the exports from the Pacific Coast may be distributed over a much wider area than the above table shows, and that the distribution would have probably to be modified considerably.

England, which is credited with a little over one-fourth, probably takes by much the greater part.

Belgium and France which are credited with comparatively small exports most likely receive a good deal more ordered from Cork. It is probable that our direct exports thither will largely increase and be as important in future years as that of England herself.

Cape Town which used to take an occasional cargo from us is increasing its orders. We shipped a cargo to the Azore Islands and a partial one to Germany. We think that Germany may be relied upon in the future to take larger quantities. The distribution to other places may increase, but not to the extent of cargoes as our flour is handier for them.

Spain and Italy may be looked upon as future customers, and Holland to the north as well. This will, we think, be the extent of our customers for wheat, but we shall probably increase our shipments vastly. Other customers will want our flour rather than our wheat.—*S. F. Journal of Commerce.*

The Minute Size of Germs.

It is altogether beyond the power of the mind to conceive the minute size of some of the germs which in their subsequent development work such wondrous changes, and which have such important influences on health and several industrial processes. We read of the experiments of Pasteur, Tyndall, and others, but we seldom realize the infinitely small size of the organisms and germs referred to, for some are undoubtedly so minute that the most powerful microscope fails to detect them. There are some interesting remarks on this subject in a recent number of *Knowledge*, which we quote: "The minute organisms capable of inducing changes analogous to the fermentation caused by yeast, have received great attention of late years and several important diseases are distinctly traced to them. Bechamp estimated that 8,000,000,000 of germs of one micro ferment only occupied one cubic twenty-fifth of an inch. Not one of these minute bodies could develop except by carrying on complicated processes of a chemical nature, involving very active movements of its atoms and molecules.

The mathematicians have made calculations founded on the pressure exerted by the gases, and other considerations, which show that a particle of the sort of matter, such as albumen and protoplasm, chiefly concerned in life processes, contains in a space of one cubic thousandth of an inch more molecules than any one could possibly form any conception of. Sorby, taking a probable mean of such calculations, supposes one cubic thousandth of an inch of water to contain 3,700,000,000,000,000 molecules. A sheet of ordinary note paper is about one-hundredth of an inch thick. One-tenth of this would, of course, be one-thousandth of an inch, and a little square box of that size each way would hold the amazing number of water molecules mentioned. Perhaps a few thousands of such molecules may suffice for some manifestation of life, but even if many millions should be requisite for the structure of the humblest and simplest germ, we could never expect to see the actual beginnings of life.

MELTING POINT OF FATS.—The method adopted by the "Society for the Mineral Oil Industry," in Halle, is to be preferred for the safest and most accurate results above all other methods. Instead of determining the melting point they use the solidifying point as a basis for their results. The following method is recommended as giving accurate results for the direct determination of the melting point: A cylinder having thin walls is heated in a beaker containing water or oil. In the cylinder there is a thermometer whose bulb is only partly dipped into the fat. The temperature is determined at the moment when the fat begins to become transparent.

A SECRET TELEPHONE.—The National Secret Telephone Co. recently filed articles of incorporation in Albany, N. Y.; capital $5,000,000, with power to increase it to $10,000,000. The route of the line is from New York to Albany, thence to Buffalo, with the right and privilege to extend the route to other States and Territories. The company, which has not yet been fully organized, was incorporated to manufacture and put in operation a telephone invented by Prof. J. Harris Rogers, of Washington. It is called the "secret telephone," because when two persons are talking no one else, although he may be on the same line, can listen to the conversation. The inventor claims great advantages for his instrument over the ordinary telephone. Instead of being suspended, the electrodes float in mercury, which gives distinctness in sound and enables the telephone to be operated at long distances. There are many other minor differences between the "secret" and the common telephone, but the advantages urged are the secrecy and the superiority in transmission. In an experiment in Washington, conversation in a low tone at a distance of 25 ft. from the transmitter was heard plainly two and one-half miles away.

Enterprise Windmills.

Horton & Kennedy wish to have everybody know that they still continue to handle the old reliable, and only genuine Enterprise Windmill with all the latest improvements. Mills of this make in use on this coast 12 years that have not cost one cent for repairs. Anyone who at anytime contemplates buying should consider the merits of these mills before giving an order for any other. It should be remembered that this make of mills comes only through Horton & Kennedy. General office and supplies (as always before) Livermore, Alameda Co., Cal. San Francisco agency, Linforth, Rice & Co., 323 and 325 Market street, S. F. Circulars free

Blacksmith Stand.

Mr. Truman P. Williamson, of the firm of Matteson & Williamson, has invented what might be termed a blacksmith's stand, that is worthy of being classed with notable improvements of the day. It is a square stand with drawers underneath, and a perforated tool-holder on three sides. Resting on hinges, on the back side, is a small cupboard or offset, which folds down upon the top of the stand and locks itself when not in use. With some additional improvements which have been suggested, it is an ornamental, useful and labor-saving invention, and something that every shop should have.

Ruhl's Pumps.

Fred Ruhl's Force Pump is gaining in popularity, the demand being from Tulare, Merced, Los Angeles, Visalia and New Mexico. Mr. P. R. Fairchilds, of Tracy, says: "I have had Ruhl's pump in over a year and nothing the matter yet. I pump for irrigating my garden and all my live stock, some 30 head." As Mr. Ruhl says he received orders from Butte county, Los Angeles county, and different portions of the State on account of his advertisement in the RURAL PRESS.

Volunteer Testimonials from Those Who Have Used Booth's Exterminator.

I have used the Squirrel and Gopher Poison of Mr. Booth's, and find it to do all he claims. Have used it on a small flat of four acres, riddled with gophers, and a week ago I could only see one gopher hill. I do not find the gophers or squirrels dead on the ground, but turn them up with the plow constantly.

SAN LUIS OBISPO, CAL., August 9, 1880.

The undersigned Committee, appointed by San Luis Obispo Grange, P. of H., No. 28, have used the Squirrel and Gopher Poison prepared by A. R. Booth, at the Eagle Drug Store, San Luis Obispo, during the growing season, when there was plenty of green things for squirrels and gophers to live upon, and we find they take the poison above described at this season of the year, and that the effect is as destructive as could be wished; and it is the cheapest and best Squirrel and Gopher Poison with which we are acquainted, or ever experimented with.

Attest: A. T. Mason, Sec'y P. of H., No. 28. E. W. STEELE, F. F. WHITE, L. M. WARDEN, } Committee.

ORANGE CULTURE IN CALIFORNIA, by T. A. Garey, is a very attractive little volume of 230 pages, which abound with information of great value to all engaged in citrus culture. Mr. G. is a pioneer in this industry and in his book he has given the reader the practical facts which years of experience have taught him. Without doubt it is the best work ever published on this subject in the United States, and it should be in the hands of every person who is in any way connected with orange, lime or lemon growing. In flexible cover it retails at $1, in board at $1.25. Address, PACIFIC RURAL PRESS.—*Semi-Tropic Californian, Los Angeles.*

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LAKE COUNTY, CALIFORNIA.

NINETEEN MILES FROM CALISTOGA,

Napa County, Five miles from Middletown, and 10 miles from the **Great Geysers**, between which and ANDERSON'S SPRINGS there are good wagon roads.

Hot Sulphur and Steam Baths

For the Cure of

Rheumatism, St. Vitus' Dance, Paralysis, Dropsy, Etc.!

Cold Sulphur for Dyspepsia, diseases of the Stomach and Kidneys.

SCENERY UNSURPASSED!

CLIMATE MILD AND EQUABLE!!

CONSUMPTIVES generally improved in health, and asthmatics are invariably relieved.

TROUT FISHING IN THE GROUNDS!

Deer Hunting in the immediate vicinity.

NEW COTTAGES for the better accommodation of guests, Cooking good.

Summer Resorts.

SODA BAY HOTEL,

A NEW AND BEAUTIFUL

SUMMER RESORT.

SODA BAY, on Clear Lake, Lake county, Cal., the favorite lacustrine resort, is justly regarded as combining greater advantages and affording more attractive and interesting natural features than any other watering place in the State. The climate, as a relief from the severe winds of the coast, is invaluable for the health of children and delicate persons—indeed, for all requiring the change demanded annually by the residents of San Francisco. While entirely free from the fog, the wind and the chill of the sea coast, the climate is greatly modified from the heat of the interior by the proximity of the beautiful lake, upon the margin of which, for a distance of two miles the grounds are extended. A splendid grove of live oak, pine and manzanita trees, of great age and gigantic growth, affords the most delightful shade. A beautiful bathing beach offers the choicest facilities for aquatic pastime, far from the danger of the sea surf or chill.

The Great Spring, Indian name, OMAR-ACH HAH BEE, emitting not less than a million gallons daily, of delicious effervescing soda water, is one of the most interesting natural curiosities of California, and the bath in its exhilarating fountain has an electrical effect that is as delightful as it is beautiful. Extraordinary solfataric action au around the shore of the bay, due to the presence of innumerable mineral springs and chemical action upon a vastly extended scale, has given the place the name by which it is known—Soda Bay.

Daily excursions are made to Borax Lake, Sulphur Banks, and other points of interest. A new trail leads to the summit of Uncle Sam, 4,400 ft. above the sea.

Ample provisions are made for the entertainment of the patrons of this popular resort. The Hotel and the cottages are furnished with comfort and taste. Among the diversions of the place are boating and sailing—yacht and steamer, bowling, billiards, croquet, equestrian exercise, fishing and hunting, and a beautiful pavilion for music and dancing; in short, nothing is lacking for the enjoyment of those who seek rest and recuperation or interesting and healthful recreation beneath the shady oaks and by the ever beautiful lake, in a climate which, for health and for comfort, is acknowledged to be unsurpassed, if, indeed, equaled in the world. Billiards, croquet, ten pins, and baths, free.

To reach Soda Bay from San Francisco, go by train to Calistoga or Cloverdale, thence by stage to Kelseyville, at which place a carriage from the hotel will meet passengers. Through time, 11 hours. For further information address,

A. K. GREGG, Uncle Sam P. O., Lake Co., Cal.

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JOHN SPAULDING, - - - - Proprietor.

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Right at hand for the accommodation of invalids. Baths of any desired temperature.

The SIEGLER SPRINGS STAGE will connect with the stage from CALISTOGA at LOWER LAKE on MONDAY, WEDNESDAY and FRIDAY, at GLENBROOK on TUESDAY, THURSDAY and SATURDAY. Time from San Francisco, TWELVE HOURS. These Springs have no equal in the State for speedily and permanently curing Rheumatism, Gout, Stiff Joints, Dropsy, Scrofula, Skin Diseases, Gravel, Diabetes, Female Diseases, Dyspepsia, Catarrh, Chronic Dysentery, Chills and Fever, Lead Poisoning, Painters' Colic, Constipation of the Bowels, and all diseases of the Stomach and Liver, Bright's Disease of the Kidneys and impurities of the Blood. The Hotel will be kept open summer and winter, the water proving equally efficacious the year round. Important improvements have lately been added, including new

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Address all communications to "SIEGLER SPRINGS," Lake county, Cal. W. T. GARRATT, Manager.

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VERY BEST THE MARKET AFFORDS.

The Long Experience of the Proprietor enables him to make the

TAMALPAIS

The Most Desirable Country House on the Coast. The Salubrity of the Climate and

BEAUTY OF THE SCENERY

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Stage connections made at LOS GATOS with MORNING and AFTERNOON trains of the Narrow-gauge Railroad.

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ROOMS CAN BE SECURED

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Saratoga, Cal. Proprietor.

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Forty miles West of Williams, Colusa county, on the main traveled road from Colusa to Mendocino.

Three Different Routes to the Springs,

One via WILLIAMS, one via CLOVERDALE LAKEPORT and UPPER LAKE, one via CALISTOGA and LOWER LAKE, and all connecting with the train

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Fare will not exceed TWELVE Dollars either way. Daily Mail via LAKEPORT, Semi-weekly mail via WILLIAMS. Post Office, Express Office and Telegraph Office here all the year through.

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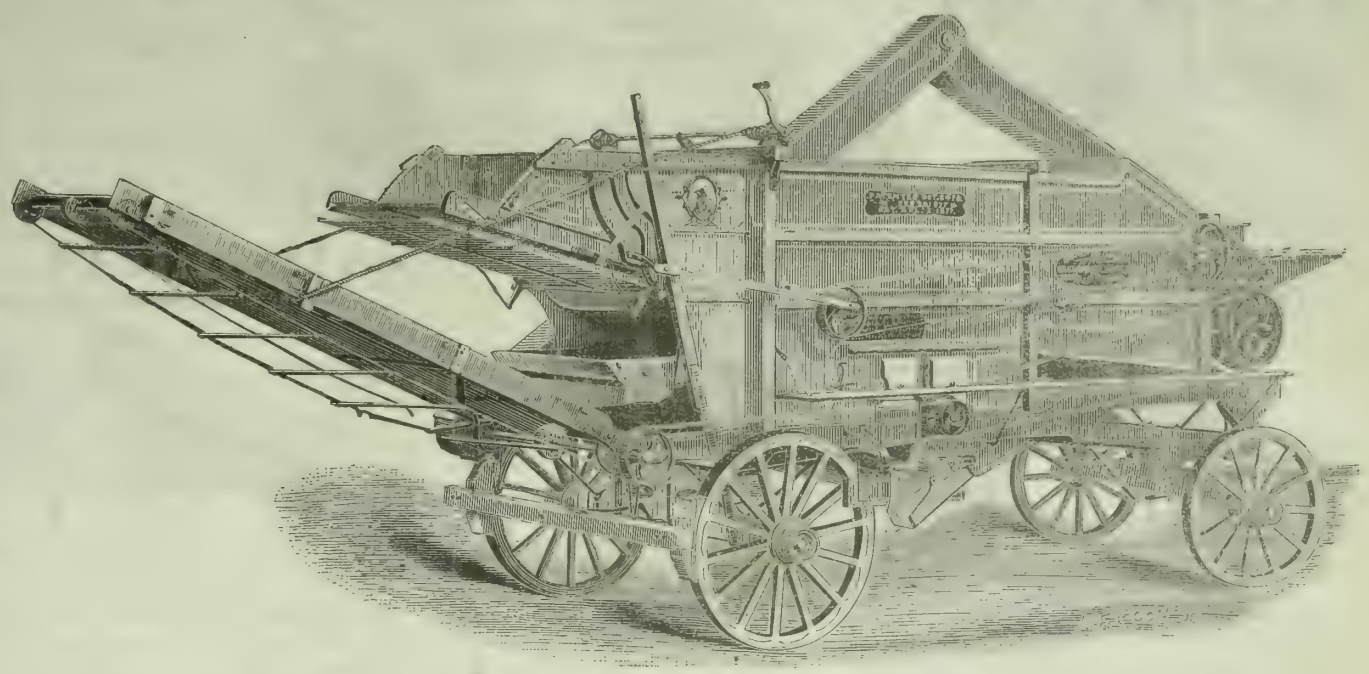

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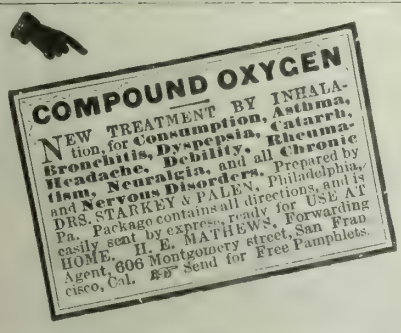

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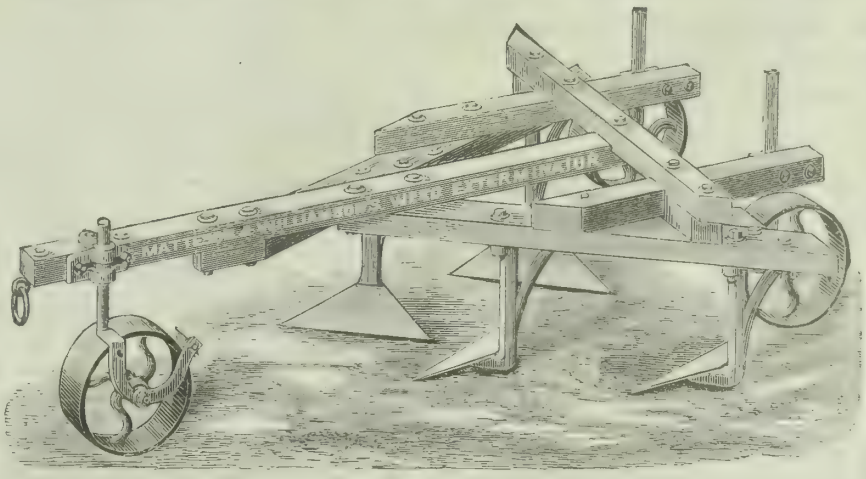

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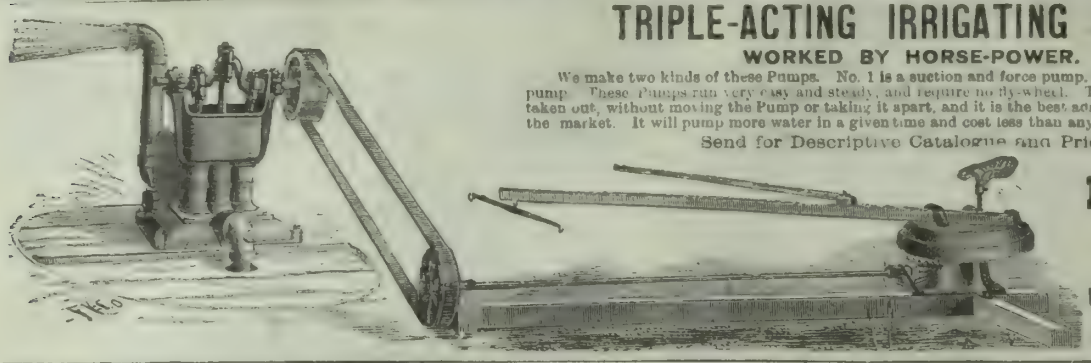

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We make two kinds of these Pumps. No. 1 is a suction and force pump. No. 2 is a suction and lift pump. These Pumps run very easy and steady, and require no fly-wheel. The valves can be very easily taken out, without moving the Pump or taking it apart, and it is the best adapted Pump for irrigation in the market. It will pump more water in a given time and cost less than any other irrigator.

Send for Descriptive Catalogue and Prices.

F. W. KROGH & CO.,

Manufacturers
And Sole Proprietors,

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A PUBLISHER WANTED.

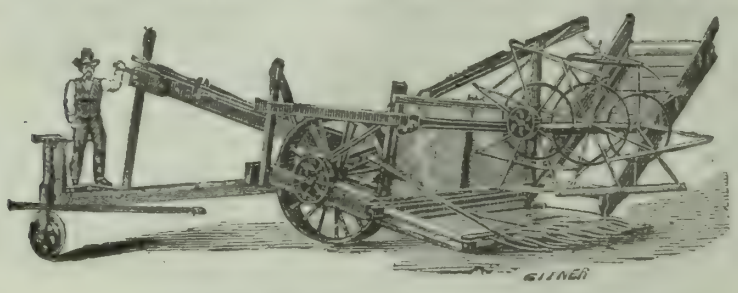
A good printer, or a steady and able business man, with a good reputation and a little means, can purchase (at less than two-thirds its value) the whole or a part of a long and well-established and paying newspaper and job printing office, in one of the rising business centers of this State.

Principals only need apply, (and that soon) to DEWEY & CO., at the office of this paper.

P. S.—A first-class printer can secure a permanent situation by applying soon. Also, a steady country boy a situation as janitor.

RICHARDS' IMPROVED HEADER.

"The Stockton Chief!"



FOUR DRAPERS.

The Farmers call it the "BOSS HEADER OF CALIFORNIA." Built especially for California Trade

THE OPERATOR CAN STOP THE DRAPER AT WILL. CUT 10 FT. TO 16 FT.

IRON FOUNDERS AND MANUFACTURERS OF

FARMING IMPLEMENTS!

DERRICKS AND FORKS,

Plows, Harrows, Cultivators, Steel Road Scrapers, Etc.

Call at the old Stand or Send for Catalogue and Price List. Liberal Discounts to the trade

Orders for the "STOCKTON CHIEF" HEADER

Should be forwarded early, as the demand is so great that it is difficult to fill late orders.

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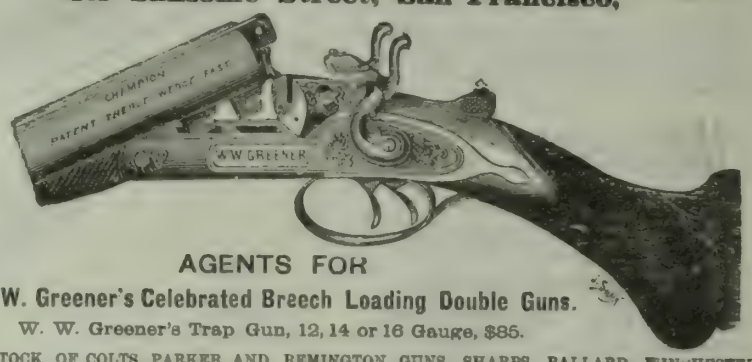
Corner of Main and California S s., Stockton, California.

Nathaniel Curry & Bro..

113 Sansome Street, San Francisco,



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W. W. Greener's Celebrated Breech Loading Double Guns.

W. W. Greener's Trap Gun, 12, 14 or 16 Gauge, $85.

FULL STOCK OF COLTS, PARKER AND REMINGTON GUNS, SHARPS, BALLARD, WINCHESTER, KENNEDY, MARLIN, and REMINGTON SPORTING RIFLES; PISTOLS OF ALL KINDS.

Ammunition in quantities to suit. A liberal discount to the trade. Price List on Application

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DAVISVILLE, CALIFORNIA.

Portable Derricks, Price, $160 00. Nets for Header-bed, Price for one wagon, $12 50. Grab Forks, for unloading Hay, Grain, or Straw, with the Derrick, Price $15 00.
Portable Press for Baling Straw for Fuel or Hay, Price, with Wagon, $280.00. Price, without Wagon, $200.00
Golden Gate Washers, $20.00

THIS WASHER WILL BE SENT ON TRIAL TO RESPONSIBLE PARTIES,

And Can Be Returned if it Does Not Give PERFECT SATISFACTION
The above articles will be FORWARDED ON ORDERS, to any RESPONSIBLE MERCHANT in the State, and a LIBERAL COMMISSION allowed. Please send for Circular.

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OUR U. S. AND FOREIGN PATENT AGENCY presents many and important advantages as a Home Agency over all others, by reason of long establishment, great experience, thorough system, intimate acquaintance with the subjects of inventions in our own community, and our most extensive law and reference library containing official American and foreign reports, files of scientific and mechanical publications, etc. All worthy inventions patented through our Agency will have the benefit of an illustration or a description in the MINING AND SCIENTIFIC PRESS. We transact every branch of Patent business, and obtain Patents in all countries which grant protection to inventors. The large majority of U. S. and Foreign Patents issued to inventors on the Pacific Coast have been obtained through our Agency. We can give the best and most *reliable* advice as to the patentability of new inventions. Our prices are as low as any first-class agencies in the Eastern States, while our advantages for Pacific Coast inventors are far superior. Advice and Circulars free. DEWEY & CO., PATENT AGENTS.

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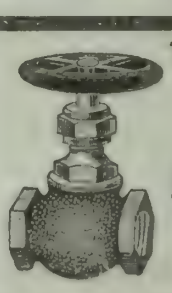
MILDEW-PROOF AND RUBBER-LINED,

Will positively Not Break in the Kinks, Split Open, or Burst. Very Light, Easily handled, does not deteriorate with age, and is extremely durable. Also, Cotton and Linen Fire Hose. Call and examine it.

W. T. Y. SCHENCK, Agent.

36 California Street, - - - - San Francisco



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Manufacturers of the

NEW IMPROVED

Althouse Vaneless Windmills.

Importers of

PUMPS

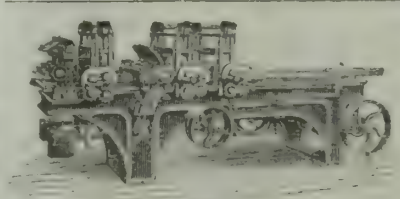
Of every description,

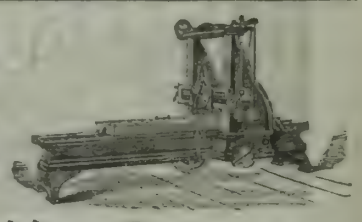
For Hand, Windmill and Power Use.

BRASS GOODS, HOSE, TANKS,

GARDEN TOOLS, ETC.

Send for New Catalogue and Prices.





Berry & Place Machine Company,

PARKE & LACY, Proprietors.

No. 323 and 325 Market Street, - - - San Francisco, Cal.

Importers and Dealers in every Variety of

WOOD AND IRON WORKING MACHINERY,

Stationary, Portable and Hoisting Engines and Boilers,

STEAM PUMPS, SAWMILLS,

Shingle Mills, Emery Grinders and Emery Wheels, Gardner Governors, Leather and Rubber Belting and Packing, together with a general line of Mining and Mill Supplies.

Catalogues and Price Lists furnished on application.

The Dangers of a Late Season.

The present season is about three weeks late. From this lateness of the season arise many dangers and disadvantages to our agricultural industries. The menace to our wheat crop is increased many fold from this lateness of the season. If our wheat had been in its present condition or stage of advancement towards maturity on the 15th of April, the prospect of a good crop would have been real and almost certain, instead of only apparent or deceptive. The lateness of the season has not generally enough been taken into consideration by those who have figured upon and published the crop prospects of the season. The farmers themselves have all been deceived, and we fear that many of them have been led into outlays and projects of improvements that the real situation did not warrant, and the outcome will not meet. If this be the case, those who have been placed in a false position will do well to face the fact and provide against emergencies as soon as possible. They will do well also to guard against a repetition of a like mistake in the future. It is better in all seasons to concentrate efforts and cultivate a less area of land, and cultivate this better, and thus guard against crop failures and their consequences. The loss of a crop on a small field does not hurt as does the loss of a crop on a large field, and when only a part of a farm is in wheat the balance is most likely to be cultivated in something else that will bring a success and thus help to make up the loss. The only hope of a fair harvest, even from the summer-fallowed grain, now is, that the damp southern winds will succeed to the dry north winds that have prevailed this season so far to an unusual extent. It is time for the change, and if our crops were three weeks earlier we might reasonably expect a good crop the State over. The lateness of the season is also a damper to the best chances for a profitable season for the fruit growers and shippers, which, perhaps, they have not taken into account sufficiently. Our fruit and grape crop is valuable for Eastern shipment in a green state, greatly because of its generally being laid down in the Eastern markets from two to three weeks earlier than the Eastern crops of the same kinds of fruit ripen. It is doubtful now if we secure this advantage this season, as our crops are much later than common. Unless the Eastern crops are also late, or unless they are cut off by unexpected cold weather, we shall have to forego Eastern shipments of green fruits, and depend for our profits on canning and drying. That our fruit growers may not experience a similar embarrassment from overestimates of profits, it may be well for them to inquire into this matter pretty closely. Our impression is, that the Eastern fruit is rather earlier than later than common at this time of the year; but cold, bad weather may change all this there, though our fruit cannot be brought forward except at the danger of injuring it.—*Record-Union.*

WATER REQUIRED FOR IRRIGATION.—How much water is necessary for irrigation purposes in southern California is a question that comes to the attention of both seller and purchaser every time a sale of real estate is made. And yet how few there are that thoroughly understand the question, when asked how much water is necessary to irrigate an acre of land, measuring the water under a four-inch pressure in a permanently running stream. As there are several tracts of land now being sold in this county where the basis of water supply is placed at one inch of water to eight acres of land, let us consider irrigation from this standpoint and see how much water we have. In order to figure easily, suppose we take a tract of 300 acres of land with a permanent stream of water that in mid-summer runs 37½ inches of water under a four-inch pressure; this is equal to three-fourths of a cubic foot of water per second. Dividing the 300 acre tract into 30 tracts of 10 acres each, we find that each 10-acre tract is entitled to the entire stream, 24 hours every month, or is entitled to a stream of 25 inches for two days and one night every month. Twenty-five inches of water is equal to one-half a cubic foot of water per second, and the 10-acre tract during the 36 hours will get 64,800 cubic ft. of water, which will cover the tract with water to a depth of one and eight-tenths inches every month. This is acting on the supposition that irrigation is so conducted that all the water is used. If half the water runs off the lower end of the tract, only half as much, of course, stays on the land. Of course land requires more water in summer than in winter, as the evaporation is greater and the trees being in active growth take up more moisture; but a season that gives five inches of water during the winter months keeps the orchards and vineyards in good condition for six months. If, in addition to this, the ground is given a good irrigation in winter or spring, when water is plenty, we consider the amount of water above estimated a great abundance to carry the orchard and vineyard through the months of July, August, September and October, when the streams run the lowest of the season. If a stream is measured July 1st, and a basis made on the flow at this time, it will be found that the stream decreases during July and August, but before the middle of September the waters of the stream increase in volume again, and by October 1st there is as much water in the stream as there is on the first of July, while during the months of April, May and June, the supply is much larger.—*Riverside Press and Horticulturist.*

The Deering Twine Binder.

The Deering Twine Binder, of which we give an engraving on this page, was first brought out in 1879; but it has been improved each year since then, and it comes forward in 1882 embodying the results of many tests and experiments. There were large sales made last year at the East, and it is claimed by the manufacturers that "no one now ventures to doubt that the gearing and weight of a binder must be in the rear, in order to keep the weight from the horses' necks. No one doubts that a binder must size its bundles automatically, pack and compress the grain before tying the knot, and that it must make a complete separation of every bundle."

It is claimed, farther, that the Deering binder runs at least one horse lighter than any other binder; it is hundreds of pounds lighter in weight; there is absolutely no weight on the horses' necks, as the weight of the binder is all at the rear; the grain is cut and elevated over the drive-wheel to the binder; no matter in what condition it comes over, when the grain reaches the rapidly moving adjuster, it is straightened and hurried on to the packers, which compress it into an even, tight bundle. When enough grain has accumulated to make the bundle, the binding mechanism is automatically started, the needle brings the twine around the sheaf, a few quick and easy movements of the tying apparatus are made, and the bundle is tied. Then the discharge arms advance and with great power force the bound bundle gently away from the binder and drop it on the ground. More grain is hurried into the binder, packed, compressed, bound and dropped, tied, on the ground. So the operation goes on with a regularity and certainty that could not be greater if the machine were human.

THE DEERING TWINE-BINDING HARVESTER

We are informed that the twine used in the Deering binder runs 700 ft. to the pound, which is much greater length than in other binders. The Deering Binder is represented on this coast by George A. Davis & Co., 327 and 329 Market street, from whom fuller information can be obtained.

SAFETY SHIELD FOR CIRCULAR SAWS.—A new self-acting safety shield for circular saws, designed to guard against the constant danger which threatens the workmen, is made of a plate of iron or steel about as thick as the saw, and curved to its radius, broad enough to give sufficient firmness. It is placed at a given distance from the teeth of the saw, and is furnished with movable plates and adjustment slides, and screws to suit the alterations in the diameter of the saw by wear, or the substitution of smaller for larger saws, or stuff deeper than the cutting part of the saw. The shield is attached to an arm hung upon a stud concentric with the saw mandrel, and is balanced with a counterpoise under the table. The semi-circular shield is about one and a half inches deep and the same thickness as the saw. The forward end is so formed that the piece of timber to be cut raises the shield, but the latter rests upon the timber and forms a guard which prevents the workman from bringing his hands or arms into contact with the cutting edge of the saw. As soon as the timber has passed from the saw the shield returns to its original position, entirely covering the saw, and so remains until raised by the next piece of timber.

A CANDIDATE FOR RAILROAD COMMISSIONER.—Dr. J. W. Gally, of Watsonville, Santa Cruz county, is spoken of by several of our exchanges as a probable candidate for Railroad Commissioner in the third railroad district. Dr. Gally is a miner, a farmer, and a man of letters—sound on the Chinese question, as his contributions to the RURAL PRESS and other California and Nevada publications will show. He has been a producer on the Pacific slope for 20 years—never a speculator—and it must be supposed that his sympathies are with the producer He is a Democrat of the Democrats, but *that* is no affair of ours.

Temperance.

At the Grangers' Reunion, April 6th, the following resolutions were adopted:

WHEREAS, The Grange was instituted for the welfare of mankind in general, and for the protection of society as a whole; and

WHEREAS, All organizations and societies having for their object the elevation of mankind and the good of our common country ought to unite in the suppression of any conspiracy which seeks to impede justice, trample upon law, defy authority, degrade American citizenship and dishonor the State; and

WHEREAS, The Supreme Court of this State, our highest judicial authority, has, by its recent decision, affirmed the constitutionality of these laws, commonly called the Sunday Law; therefore,

Resolved, That we look with positive disfavor and absolute abhorrence upon every effort, whether by league or otherwise, to defeat the execution of the will of the people, as expressed in the laws upon the statute books of the State, and affirmed by the highest judicial authority.

Resolved, That we will discourage such attempts that defeat and show resistance to the law of the land, by refusing to do business with any man or combination of men who enter into a conspiracy to retard, or otherwise prevent the operation of laws made for the purpose of suppressing intemperance and protecting the laborer from the exactions of labor on the day called the Sabbath.

FAST OCEAN STEAMING.—An old Scotch shipbuilder said, years ago, that if he were paid money enough he would build a steamer that would cross the Atlantic without breaking the Sabbath. At the time this was thought to be an idle boast. Twelve days between Liverpool and New York was then considered a fair passage, and 10 days was held to be a fast passage. But the confidence of the shipbuilder in the possibilities of the ocean steamer is justified by what is now being done every day on the North Atlantic. Although no steamer has yet made the passage within seven days, yet it is more than possible that that time will be made in the near future The average time of the passage has been reduced until eight and nine days is only considered good time, and the extraordinary runs of the *Alaska*, of the Guion line, is an indication of a still further reduction. The *Alaska*, on her last trip from New York, made the run between Sandy Hook and Queenstown in 7 days, 6 hours and 53 minutes actual time, and she arrived at New York from Liverpool, on April 16th, having made the run from Roche's Point to the bar in 7 days, 6 hours and 18 minutes, averaging 394.83 knots per day, or 16.45 knots per hour. To give an idea of her actual work per day, we will state that on her first day she made 380 knots; second, 383; third, 392; fourth, 417; fifth, 409; sixth, 397; and seventh, 419.

Signal Service Meteorological Report.

SAN FRANCISCO.—Week ending May 16, 1882

	May 10	May 11	May 12	May 13	May 14	May 15	May 16
HIGHEST AND LOWEST BAROMETER.							
	30.087	30.009	30.087	30.175	30.229	30.202	30.188
	29.992	29.938	29.943	30.056	30.174	30.150	30.115
MAXIMUM AND MINIMUM THERMOMETER.							
	74	61.5	55	57	56	58	58
	57	50.5	45	45	47.5	46.5	50
MEAN DAILY HUMIDITY.							
	61	66	54	66	68	67.7	67.7
PREVAILING WIND.							
	SW	W	W	W	W	W	W
WIND—MILES TRAVELED.							
	137	286	503	317	279	313	298
STATE OF WEATHER.							
	Clear.	Clear	Clear.	Clear	Clear.	Fair.	Clear.
RAINFALL IN TWENTY-FOUR HOURS.							

Total rain during the season, from July 1, 1881, 16.07 inches

Pacific Coast Weather for the Week.

[Furnished for publication in the PRESS by NELSON GEROM Sergt Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending 11:58 A.M. Wednesday, May 17th, at noon, for the stations named:

Date.	Olympia.	Portland	Roseburg	Red Bluff	Sacram'to	San Francisco	Visalia.	Los Angeles.	San Diego
Thursday.	.01	.06	.03	.00	.00	.00	.00	.00	.00
Friday....	.13	.00	.-	.00	.00	.00	.00	.00	.00
Saturday.	.—	.02	.01	.00	.00	.00	.00	.00	.00
Sunday..	.31	.06	.05	.01	.00	.00	.00	.0	.00
Monday..	.14	.14	.14	.00	.00	.00	.00	.00	.00
Tuesday.	.-	.11	.19	.00	.00	.00	.00	.00	.00
Wed'sday.	.00	.16	.00	.00	.00	.00	.00	.00	.00
Totals....	.59	.55	.42	.00	.00	.00	.00	.00	.00

CARPINTERIA.—Cor. Santa Barbara *Press*, May 9: The prospects for good crops were never better than at the present time; fruit also gives us a promise of plenty, so plenty, indeed, that if supports are not placed early, the limbs with their burdens of fruit must give way, which will destroy the symmetry of our trees, and leave ugly wounds which will give harbor for the enemies of our orchards.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

Hay Rakes.

The celebrated hay rakes manufactured by John Dodds, Dayton, Ohio, can be found in large stock at the San Francisco branch, 37 Market St. The old reliable Hollingsworth Rake has taken three Gold Medals at International Fairs. The Red Bird is cheap, simple and a great favorite. The new Reindeer is the strongest and most durable Self-Dump Rake on the market. The iron axle and wheels, rocker-frame movement, adjustable teeth, dumping device and other improvements make them the most desirable Rakes manufactured. See the agent, S. Gould, before purchasing, 37 Market St, S. F.

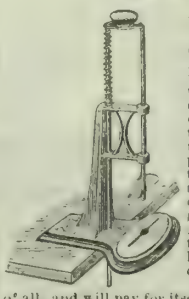
LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y

ANNUAL STATISTICIAN OF 1882.—"It is the most complete and accurate work of its kind in the world"—*S. F. Call*. Address L. P. McCarty, 502 Taylor St. Price, $4.

HORSES
AND
THOROUGHBRED JERSEYS
And AYRSHIRES
AT AUCTION,
Thursday, May 25th, at 10 A. M.,
At Oakland Trotting Park.
100 Head! Sale Absolute!
For Catalogue apply to
TAGGART & DINGEE,
460 & 462 Eighth St., Oakland,
And EASTON & ELDRIDGE,
22 Montgomery St., S. F.

Excelsior Fruit Pitter.
Invented by A. Donatella.



This machine recommends itself by the following good qualities:
Rapidity of work, one operator doing the work of four with knives. It cleans the pit perfectly, wastes no fruit, and leaves the plum in two equal parts. It is easily operated. Makes no litter, the pits dropping in a vessel under the table. The plum remaining between thumb and finger can be placed directly on the riddle for the Dryer. Simplicity of construction. Cannot get out of order. Will work equally well on green or very ripe Plums. Prunes, Apricots or Nectarines pitted with this machine dry more evenly and look nicer than when chipped off with a knife.
The low price comes within reach of all, and will pay for itself with two day's work. It is invaluable to the housewife for preparing fruit for canning and other purposes. Ask your hardware dealer for it. Try it and be convinced. For particulars address,
J. W. TERRY, Healdsburg, Cal

MOODY & FARISH,
WOOL
Commission Merchants.
NO. 210 DAVIS ST. - - - SAN FRANCISCO.
Wool Bags, Twine, Sheep Shears, all kinds of Sheep-Washes and Tobacco for Sale. Cash advances made on Consignments. Particular attention paid to sale of WOOL, HOPS, HIDES, SKINS, Etc.

50 LARGE SIZE New Chromos, with name 10c. TODD & CO., late Wise & Co., Clintonville, Conn.

ESTABLISHED 1860.
P. STEINHAGEN & CO.,
(Successors to J. W. GALE & CO.)
Fruit and General Commission Merchants,
And Wholesale Dealers in California and Oregon Produce, *Also, Grain, Wool, Hides, Beans, Potatoes, Cheese, Eggs, Butter and Honey*
Brick Stores: No 402 Davis Street, and 120 Washington St., S. F.
Prompt Returns. Advance Liberally on Consignments.

65 Gold Motto Cards, All Chromos, 65 styles, name on 10c. 6 packs 50c. O. A. Brainard, Higganum, Ct.

AMERICAN BARB WIRE

FENCING.

GALVANIZED, PAINTED OR JAPANNED.

The Handsomest, Stiffest, and Most Durable. No Rust. No Decay. Secure Against Fire, Flood and Wind.

IT IS THE ONLY BARB WIRE that will prevent small animals, such as rabbits, hares, pigs, dogs, cats, etc., from passing through, under or over it, the barbs are so near each other.

The Barbs being triangular-shaped, like the teeth of a saw, and close together, there is no *cruelty to animals*, as they cannot pierce the hide; they only prick, which is all that is ever necessary as *no animal will go near a Barb Fence twice.*

AS THE WIRE IS NOT BENT OR TWISTED, its tensile strength is much greater than the Wire in all other Barb Wire Fences, as they are all made of twisted or bent Wire.

HEAT AND COLD CANNOT AFFECT THE AMERICAN BARB FENCE, as it can be allowed to sag when put up, enough to cover contraction and expansion, *because it is a continuous Barb, and cannot slip through the staples one inch.* Each panel of Fence takes care of itself.

The Barbs cannot be displaced or rubbed off, and are not pounded on and indented into the wire to hold them in place, as in other Barb Wire, thereby decreasing the strength of the Wire The Barbs are short, and broad at the base, where strength is required.

THE PAINTED WEIGHS A POUND TO THE ROD, so that the purchaser knows exactly how much fencing he is getting. Galvanized weighs slightly more.

SEND FOR SAMPLES AND PRICES.

W. W. MONTAGUE & CO.,

110, 112, 114 and 116 Battery St., San Francisco, Sole Agents for the Pacific Coast.

THE OSBORNE MACHINES,

COMPRISING

SELF BINDING

HARVESTERS,

Front Cut & Rear Cut

Single Mowers,

AND

SINGLE REAPERS.

COMBINED

MOWERS & DROPPERS

Agent for STUDEBAKER Farm and Spring Wagons.

HEAVY TRUCKS with wide and narrow tires, RAKES, DERRICKS, BELTING, CORDAGE, OILS, FORKS, HARDWARE, Etc. Screen Engines and general repairing with large assortment of extras for Agricultural Implements, also the STOCKTON GANG PLOWS, REVERSIBLE MOLDS and LAND SIDES. Address,

P. O. BOX 9. JOHN C. ALNE, Globe Iron Works, Stockton, Cal.

CHEAPEST. BEST.

BOOTH'S SURE DEATH

To Squirrels, Gophers, Birds. Mice, Etc.

Endorsed by the Grange and all others who have used it

INFALLIBLE SQUIRREL and GOPHER EXTERMINATOR.

STRENGTH INCREASED. PRICE REDUCED

Put up in 1 lb., 5 lb., and 5 gallon tins. Manufactured by

A. R. BOOTH, Eagle Drug Store

San Luis Obispo, Cal.

FOR SALE BY ALL WHOLESALE AND RETAIL DEALERS.

NEW STORE AND LARGE STOCK!

AUSTIN BROTHERS,

IMPORTERS OF

HARDWARE, IRON, AND BLACKSMITH SUPPLIES.

Rope, Wire, Belting, Pumps, Pipe and Steam Fittings,

310 and 312 Main Street, Corner of America,

STOCKTON.

Agents Halladay Wind Mills.

THOS. POWELL'S PATENT ELECTRIC ELEVATOR.

THE ONLY

Perfect Stacker

NOW IN USE.

Sales are increasing.

Parties wishing them should

Send in their Orders Early.

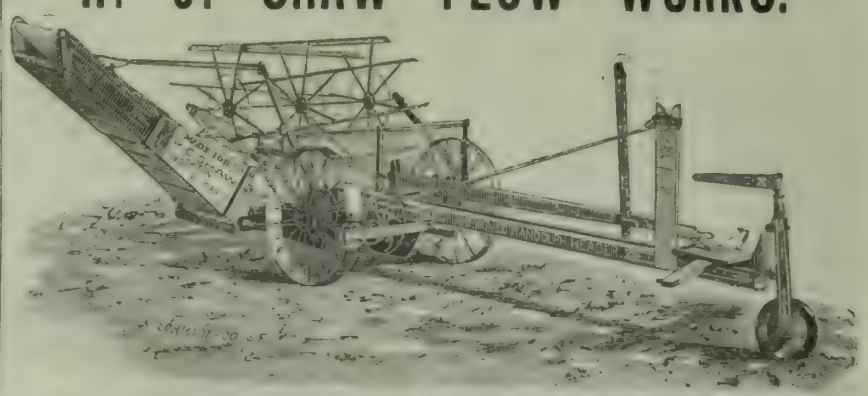
Address,

THOS. POWELL,

At H. C. Shaw's, 201 and 203 El Dorado St.,

Stockton, Cal.

H. C. SHAW PLOW WORKS.



GENERAL AGENTS

IMPROVED RANDOLPH HEADERS,

LIGHTEST DRAFT!! BEST ELEVATION!!!

Three Hundred Sold in Two Years.

Chieftain Sulky Hay Rakes,

H. C. SHAW Stockton Gang Plow,

ALSO, AGENTS FOR

WALTER A. WOODS' IRON MOWERS,

FISH BROTHERS' FARM AND SPRING WAGONS.

FURST & BRADLEY SINGLE AND SULKY PLOWS,

Powell's Electric Hay and Grain Elevator.

HEADER EXTRAS! MOWER EXTRAS!! PLOW EXTRAS!!!

(Send for Illustrated Catalogue and Price list.)

201-3 El Dorado Street, - - - Stockton, Cal.

The Most Perfect Thing for Ease and Comfort Ever Devised.

The Self-Adjusting Hammock Chair

THE HAMMOCK CHAIR

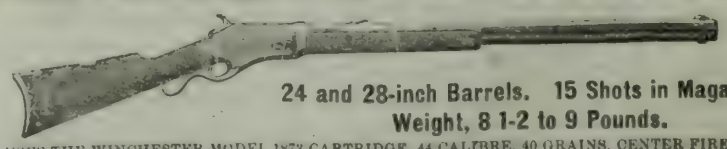
Adjusts itself to any desired position, from sitting to reclining or vice versa without effort, requiring no fastenings to hold it in place. The seat is of strong canvas or tapestry, which conforms to and supports the WHOLE body, thus affording entire relaxation and ease, and absolute freedom from cramped position. To the lovers of comfort or the tired professional and business man, mechanic or invalid, the enjoyment and perfect rest afforded makes this CHAIR worth more than it costs every week. They are adapted to the House, Office, Garden, Picnic and Camping Parties, or wherever solid comfort is desired. They are durable and light, weighing 11 lbs., and occupying only 4 inches in thickness when folded.

Price, $4.50, $5 and $8.

Shipped free of expense to your nearest railroad or steamboat station in the State, on receipt of price. Liberal discount to agents. Circulars on application.

O. J. LINCOLN, Sole Manufacturer, Santa Cruz, Cal

THE KENNEDY REPEATING RIFLE.



24 and 28-inch Barrels. 15 Shots in Magazine.

Weight, 8 1-2 to 9 Pounds.

USES THE WINCHESTER MODEL 1873 CARTRIDGE, 44 CALIBRE, 40 GRAINS, CENTER FIRE.

Out of 500 Glass Balls thrown from a trap, 479 were broken with this Rifle. Prices Low. Circulars on application to

E. T. ALLEN, Pacific Coast Agent,

416 Market St., San Francisco.

BREEDERS' DIRECTORY.

Six lines or less in this Directory at 50 cts a line per month.

CATTLE.

WILLIAM NILES, Los Angeles, Cal. Thoroughbred Poultry, Cattle and Hogs. Write for circular.

PETER SAXE & SON, Lick House, S. F. Importers and Breeders for past *eleven* years. Berkshires, "Jerseys," "Short Horns," and all varieties of Sheep, and their grades.

COTATE RANCH BREEDING FARM, Page's Station, S. F. & N. P. R. R., Sonoma County. Wilfred Page, Manager. P. O. address, Petaluma, Cal. Short Horn Bulls and Cows, Spanish Merino Bucks and Ewes, for sale at reasonable figures.

SYLVESTER SCOTT, Cloverdale, Sonoma Co., Cal., Breeder of Recorded Thoroughbred Short Horn Cattle and Spanish Merino Sheep. Jacks and Jennets for sale at reasonable figures.

J. ALEXANDER, Stockton, Cal. Breeder of first-class Dairy Stock and Berkshire Swine. Half and three-quarters Jersey cows and heifers for sale.

ROBT. BECK, San Francisco. Breeder of Thoroughbred Jersey cattle. Herd took Six Premiums of the eleven offered at State Fair, 1881.

GEO. BEMENT, Redwood City, San Mateo Co., Cal. Breeder of Ayrshire Cattle. Several fine young Bulls, Yearlings and Calves For Sale.

R. McENESPY, Chico, Butte Co., Cal. Breeder of Thoroughbred Devons.

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B. F. FISH, Santa Clara, Cal. Breeder of thoroughbred Jersey Cattle and Black Hawk Comet horses.

HORSES.

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L. U. SHIPPEE, Stockton, Cal. Importer and Breeder of Spanish Merino Sheep Durham Cattle, Essex and Berkshire Swine. High Graded Rams for sale.

J. B. HOYT, Bird's Landing, Solano Co., Cal. Breeder and Importer of Shropshire Sheep. Rams and Ewes for sale. Also, cross-bred Merino and Shropshire.

E. W. WOOLSEY & SON, Fulton, Sonoma Co., Cal. Importers and Breeders of choice Thoroughbred Spanish Merino Sheep. City office, No. 418 California St., S F.

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THE PACIFIC COAST THOROUGHBRED POULTRY ASSOCIATION. 1011 Broadway, Oakland, Cal., J. M. Halsted, Manager. All the leading varieties of land and water fowl for sale. Eggs from Plymouth Rocks, Buff and Partridge Cochins, Light and Dark Brahmas, Brown Leghorn, Black Spanish, Houdans, etc., $2 per dozen. Langshans, $3. Bronze Turkeys, $4. Dealers in Incubators, Brooders, Egg Testers, etc. Send stamp for circular.

TOULOUSE GEESE at $15 per pair; $20 per trio; Eggs, $3 per dozen. Bronze Turkeys, $10 per pair; Eggs, $4 per dozen. Address T. D. Morris, Sonoma, Cal., breeder and importer of all kinds of thoroughbred poultry

T. WAITE, Brighton, Sacramento Co., Importer and Breeder of Thoroughbred Poultry. Took Premiums at State Fair, 1880 and 1881, of Leghorns, Brown and White, S S. Hamburg, Plymouth Rocks and Pekin Duck's Eggs $3 per dozen.

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J. M. HALSTED'S NEW INCUBATOR. Price $30. No. 1011 Broadway, Oakland. Send for circular

I. L. DIAS, P. O. Box 242, Petaluma, Cal, agent new Petaluma Incubator. Send for circular and references.

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JOHN RIDER, Sacramento, Cal. Breeder of Thoroughbred Berkshire Swine. My stock of Hogs are all recorded in the American Berkshire Record.

TYLER BEACH, San Jose, Cal. Breeder of thoroughbred Berkshires of stock imported by Gov. Stanford

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J. D. ENAS, Sunnyside, Napa, Cal., Breeds Pure Italian Queen Bees. Comb Foundation.

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MARK SHELDON,

General Agent for the

"DAVIS," "HOWE," "HOUSEHOLD," "QUEEN," "SINGER," "SPRINGFIELD," and "STEWART"

Sewing Machines,

And Wholesale Dealer in Needles, Oils, Parts and Attachments for all Machines, removed from 130 Post to

9 & 11 FIRST ST., Near Corner Market, S. F

Silos, Reservoirs, Head Gates,

ARTIFICIAL STONE AND CONCRETE.

RANSOME, 402 Montgomery St., S. F. Send for circular.

CAUTION!!

THE MOST PALPABLE FRAUD!!!

Unscrupulous Persons Envious of the Fame and World-wide Reputation Fairly Won by

THE IMPERIAL EGG FOOD

Are, by fraudulently imitating the style of packages even to forging the very Trade Mark of the Imperial, endeavoring to put upon the market

WORTHLESS STUFF OF NO VALUE WHATEVER TO FOWLS,

Under a name so similar to the Imperial as to be easily mistaken for it at first sight. We take this means of cautioning our numerous customers against the fraud until the law has time to take the perpetrators into its own keeping.

The Imperial Egg Food is now used in every part of the United States, and its sale on this coast is simply wonderful, our order book showing that every customer continues to order, while every letter received is a testimonial for the Imperial. Numerous preparations have from time to time appeared called "Egg Foods," but as they did not conflict in name or trademark, were perfectly allowable, and, after due time, failing in their purpose, passed out of the market, while the Imperial continued to gain favor everywhere In purchasing, see that you get THE IMPERIAL and none other, no matter how nearly similar in name and appearance.

PRICES OF IMPERIAL EGG FOOD:

1 Pound Package, 50 Cents.
" " $1.00,
6 Pound Box, $2 00,
25 " Keg, 6.24

Sold by the trade generally, or address,

G. G. WICKSON, 319 Market St., S. F.

IMPORTANT!!!

That the public should know that for the past ELEVEN years our SOLE BUSINESS has been, and now is, importing (OVER 100 CARLOADS) and breeding improved Live Stock—Horses, Jacks, Short Horns, Ayrshires and Jerseys (or Alderneys) and their grades; also ALL THE VARIETIES of breeding Sheep and Hogs We can supply any and all good animals that may be wanted, and at VERY REASONABLE PRICES and on CONVENIENT TERMS. Write or call on us. LICK HOUSE, San Francisco, Cal., October 22, 1881 PETER SAXE & HOMER P. SAXE.

PETER SAXE & SON

Oakland Poultry Yards,

Cor. 17th and Castro Sts., Oakland, Cal.

GEORGE B. BAYLEY,

Importer and Breeder of all the best known and most profitable varieties of Land and Water Fowls.

Brahmas, Cochins, Houdans, Langshans, Leghorns, Polish Hamburgs, Bronze Turkeys.

And the new fowl, AMERICAN SEBRIGHT or EUREKA.

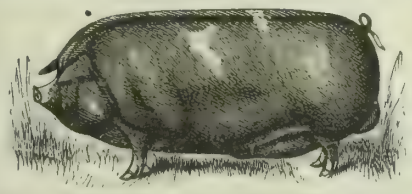
AGENT FOR THE PACIFIC INCUBATOR,

WHICH IS MADE IN THREE SIZES,

No. 1,	Capacity,	550	Eggs,	Price,	$90.
No. 2,	"	250	"	"	65
No. 3,	"	180	"	"	45.

Guaranteed to hatch NINETY PER CENT. of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season. For further particulars send stamp for illustrated circular to GEO. B. BAYLEY, Box 1771, San Francisco.

JONESA POLAND CHINA FARM.



ELIAS GALLUP, Hanford, Tulare Co., Cal.

Breeder of pure bred Poland China pigs of the Black Beauty, Black Bess, Bismarck, and other noted families. Imported boars, King of Bonny View, and Gold Dust at head of the herd. Stock recorded in A. P. C. R. Pigs sold at reasonable rates. Correspondence solicited. Address as above.

MAKE HENS LAY.

An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

STANDARD POULTRY.

American Sebrights, Langshans, Plymouth Rocks, and Brown Leghorns. Choice birds for sale in pairs, trios, or breeding pens. Eggs for hatching in season. Satisfaction guaranteed. Write for prices. Address,

O. J. ALBEE, Santa Clara, Cal

ITALIAN SHEEP WASH.

EXTRACT OF TOBACCO.

Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

SCAB OF THE SHEEP.

The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

For particulars apply to CHAS. DUISENBERG & CO Sole Agents, 314 Sacramento St., San Francisco.

50 All New Style Chromo Cards no two alike, name on 10 cents. Clinton Bros., Clintonville, Conn,

IMPROVED

EGG FOOD

To Keep Hens Healthy

AND MAKE THEM LAY.

1-lb. Boxes, 40 Cts 3-lb. Boxes, $1.
10-lb. Boxes, $2 50. 25-lb. Boxes, $5.

B. F. WELLINGTON, Prop'r.

Also, Importer and Dealer in Seeds.

425 Washington St., San Francisco.

SHORT HORNS FOR SALE.

I have for sale at my ranch, near Oroville, Butte county,

12 Young Short Horn Bulls,

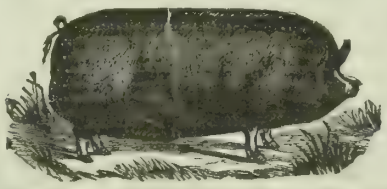
From one to two years old. Price from $100 to $200 each.

ALSO

50 Short Horn Cows and Heifers.

All these cattle are red Durham—all thoroughbred. They are offered at private sale to those wishing to secure good stock. MOSES WICK.

Oroville, Butte Co., Cal.



We have for sale at our farm at Mountain View, thoroughbred

BERKSHIRE PIGS

From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880. Pigs from Imported Boar and Sow, $25 each. From Imported Boar and Thoroughbred Sow, $10 to $20. Our Imported Pigs are as nice Pigs as there are in the State. Address JACKSON & TRUMAN, S. F.

CHURCH'S

Hay Elevator & Carrier.

BEST in use for Mowing Away Hay in barns or stacking, being adapted for either purpose. Has no equal for Simplicity, Durability and good work. The track is self adjusting and is easily put up. Send for descriptive circular and special terms for introduction to E. L. CHURCH, Manufacturer, Harvard, McHenry County, Illinois.

LITTLE'S SHEEP DIP.

Price Reduced

TO $1.25 PER GALLON.

Twenty gallons of fluid mixed with cold water will make 1,200 gallons Dip.

Apply to FALKNER, BELL & CO., San Francisco

GILES H. GRAY. JAMES HAVEN.

GRAY & HAVEN,

Attorneys and Counsellers-at-Law,

530 California St. SAN FRANCISCO

JOHN JENNINGS.

Hooper's South End Grain Warehouses,

Cor. Japan and Townsend Sts., S. F.

First-class Fire-proof Brick Building. Capacity, 10,000 tons. Goods taken from the Dock and the Cars of the C. P R. R. and S. P. R. R. free of charge. Storage at Current Rates. Advances and Insurance effected.

GRANGERS' BANK

Of California,

SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,00

In 10,000 Shares of $100 each.

Capital Paid up in Gold Coin, $531,200.

Reserve Fund and Paid up Stock, 21,178.

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CURRENT ACCOUNTS are opened and conducted in the usual way, bank books balanced up and statements of accounts rendered every month

LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

GOLD and SILVER deposits received.

CERTIFICATES of DEPOSIT issued payable on mand.

TERM DEPOSITS are received and interest allowed as follows: 4% per annum if left for 6 months; 5% per annum if left for 12 months.

BILLS OF EXCHANGE of the Atlantic States bought and sold.

ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1882.

Lands for Sale and to Let.

FARMING LAND

For sale in large or small tracts, on easy terms, in the best parts of the State

McAFEE BROTHERS,
328 Montgomery street, S. F.

Good Crops Every Season Without Irrigation.

Free by mail, specimen number of *"The California Real Estate Exchange and Mart,"* full of reliable information on climate, productions, etc., of

SANTA CRUZ COUNTY.

Address *"Exchange & Mart,"* Santa Cruz, Cal.

Stock Range.

Parties wishing to purchase good stock raising lands, unaffected by severe drouths, will do well to address the undersigned. The lands can be purchased cheap, in lots from 100 to 2,000 acres. It is partly low table and rolling land, partly clear and level. Good for vine and fruit raising. Will raise vegetables and all kinds of grain. Crops certain every year. Near town and a $10,000 public school house. Price, $3 to $5 per acre. Good local market for fruit, vegetables, grain, poultry and dairy produce. Address the proprietor,

EDWARD FRISBIE,
Anderson, Shasta Co., Cal.

Is the Best Pump in the World. Another New Improvement is Lewis' Patent Spray Attachment.

Can change from solid stream to spray instantly. Regular retail price, $6. Weight, 4½ lbs. Length, 32 inches.

FOR SALE BY JOHN H. WHEELER, 111 Leidesdorff St., S. F.

P. S. A sample can be seen at this office.

Calvert's Carbolic

SHEEP WASH.

$2 per Gallon.

After dipping the Sheep, is useful for preserving wet hides, destroying the vine pest, and for wheat dressings and disinfecting purposes, etc. T. W. JACKSON. S. F., Sole Agent for Pacific Coast.

The American Driven WELL WATER SUPPLY SYSTEM

FOR MINING, IRRIGATION, MECHANICAL DOMESTIC & MUNICIPAL PURPOSES

Send for Circulars.

BABCOCK & CO.,

40 Merchants' Exchange San Francisco, Cal.

S. F. Market Report.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, May 17, 1882.

There has been considerable interest in trade this week, and produce prices have generally shown an upward tendency, owing to the prospect of reduced yields through drouth. The establishment of another "Exchange," as described in another column, has been the occasion for much talk. Abroad the latest advices are favorable, as follows:

LIVERPOOL, May 17.—Wheat California spot lots are firmer, at 9s 10d to 10s 2d. Cargo l ts are 47s for just shipped, 49s 6d for nearly due and 49s 6d for off coast.

The Foreign Review.

LONDON, May 15.—The *Mark Lane Express*, in its review of the British Grain trade for the past week, says: On sound and well-cultivated land Wheat has regained a healthy appearance. The prospects are that the large proportion of the remainder will be from indifferent to bad. All other crops look remarkably well. The Grain trade is extremely dull and prices are weaker. Sales of English Wheat are increasingly difficult. Foreign Breadstuffs are generally weaker. Flour dull and quiet at London, supply heavy, and prices declined 5d@10d. Oats, weaker. Cargoes are very quiet. There have been 10 fresh arrivals, 4 withdrawn, 9 sold and 4 remain, of which 1 is California and 1 Red Winter. The sales of English Wheat during the week have b en 35,410 quarters, at 43s 11d per quarter, against 34 110 quarters, at 44s 10d per quarter, for the corresponding week of last year.

London Wool Market.

LONDON, May 16.—The second series of Wool sales opened this evening and will not be concluded until the 4th of July. During the series 321,300 bales will be offered. To night 6,190 bales were sold, chiefly Sydney and Victoria. There was a full attendance, with good competition, and prices were equal to those at the close of the last series.

Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive according to the latest advices:

In port.	1882.	1881
Engaged, tons	46,000	35,700
Disengaged, tons	19 300	8,900
To arrive, tons	249,700	277,900
Total	315,000	322 500
Decrease for 1882		7,500

The first charter reported in several days was the British ship *Everest*, 1,6[illegible] tons, being taken for Wheat to Cork for orders for Liverpool, Havre or Antwerp, at £2 6s, or 2s 6d less to a direct port.

Eastern Grain and Provision Markets.

NEW YORK, May 15.—The markets are quiet and generally firmer. Wheat is irregular, without any great change in either direction. Spring Wh at is firmly held, but without demand. Export demand is very slow. Provisions are quiet; Lard is $11.95; Pork steady.

Eastern Wool Markets.

BOSTON, May 16.—There is no change in the Wool market since last week. The demand is fair from the manufacturers, and desirable fleece Wool is firm, but defective fleece Wool is dull. Sales of Ohio and Pennsylvania fleeces have been made at 42@44c for XXX and above, and Michigan and Wisconsin X at 39@42c. The stock of X fleeces is quite reduced. In washed fleeces the sales have been made at 25@32c for fine and medium grades with medium selections at 33@34c. Combing and delaine selections are steady at 43@48c for fine delaine and No. 1 combing. Kentucky and Missouri combings are very little inquired for, and prices are nominal. California Wool is quiet and unchanged, with very little that is desirable on the market. Pulled Wool is in steady demand, with sales of choice Eastern and Maine superat 4[illegible]c, and common and good [illegible]12c. Australia Wool has been selling at 41@45c for clothing and combing, and Montevideo 36c. The stock of carpet Wools is light, and very little business has been done.

BAGS—Bags are a shade lower for spot lots, 8¾@9c being the rate; while for June delivery 9½c is the figure.

BARLEY—Barley is still in sharp demand and firm. Sales on Call [illegible] tons No 1 feed, spot, $1 72; 100 tons No. 2 feed, September, $1.15; 100 tons do, October, $1.15 ⅌ ctl. Other figures were: No. 1 brewing, July, $1.42½ bid, $1.45 asked. No. 1 feed, May, regular, $1.70 bid, $1.73½ asked; June, new or old, $1.55 asked; buyer June, $1.70 bid; July, $1.25 bid, $1.30 asked: August, $1.22½ bid, $1.27½ asked; September, $1 25 bid, $1.27½ asked; October, $1 25 bid, $1.30 asked. No. 2 feed, July, $1.15 bid, $1.25 asked; November, $1.16 bid, $1.17½ asked.

CORN—Corn is dull and nominal, in lack of sales. The rate is about $1.75 ⅌ ctl for large Yellow.

DAIRY PRODUCE—Butter is rising and the feeling confident. The fancy lots have reached 31c ⅌ lb. Cheese is about the same.

EGGS—Eggs are not doing quite so well this week.

FEED—There has been a general rise in millstuffs. Bran is still a favorite article in the gamble. We note sales on call: Bran, 100 tons No. 1, buyer 1882, $17; 100 tons do, $16.75; 100 tons do, $16.62½; 25 tons do, spot $16 ⅌ ton. Other figures were: June, $15.50 bid, $17 asked; July, $13.50 bid; $14.50 asked; August, $12 50 bid; October or November, $14 bid; $15 asked; December, $12.50 bid; $14.95 asked; seller 1882, $12.75 bid, $13.37½ asked.

FRESH MEAT—Beef has shaded off a fraction again, but it is still scarce here and elsewhere, as shown by an article in another column of this issue. Mutton is ½c lower.

FRUIT—Fruit is of poor quality owing to the peculiar weather, and rates are low. The cherries are poorer than we have ever seen them before, and the first crop of strawberries has evidently met adversity. California oranges are 50c per box lower. Tahiti fruit has come in during the week.

HOPS—There is no change in the Hop market.

OATS—Spot rates for the finest Oats are still high, as high as $2.10 being asked. Futures show considerable variation, as for example: Extra choice, September, $1.55 bid, $1.60 asked; October, $1 50 bid, $1.57½ asked. No. 1, October, $1 42½ bid, $1.50 asked. No. 2, September, $1 35 bid.

ONIONS—Onions are much lower and hard to sell. Prices are given in our table.

POTATOES—The abundance of New Potatoes has laid the old stock on the shelf and solved the Potato question for the present. The Olds now in are chiefly from Oregon. New go at 2@2½c.

POULTRY AND GAME—Turkeys are in sharp demand and bring 17@20c. The best young Roosters and largest Broilers are bringing an extra rate.

PROVISIONS—Provisions are quiet and firm at former prices.

VEGETABLES—String Beans are more abundant and lower. Asparagus is a little higher than last week, but not very lively. Peas are still plentiful, but are now being used largely by the canners. Cucumbers are now going at 50c@$1 25 per doz.

WHEAT—Wheat is about 2½c ⅌ ctl higher and large amounts are now going aboard ship. Sales to-day were few: 100 tons No. 1, White, at Stockton, free on board cars at $1.71½ ⅌ ctl. An outside transfer of 500 tons good shipping to an exporter was reported at $1.67½. At the Grain Exchange sales included 100 tons Ju y, $1.63; 200 do, September, $1.62½; 120 do, $1.62½; 100 do, $1.63; 300 do October, $1.62½ ⅌ ctl.

WOOL—The trade is much the same. Choice lots are quickly taken, and rates all around are the same as last week.

Domestic Produce.

WHOLESALE.

WEDNESDAY M., May 17, 1882.

BEANS & PEAS.		Soft shell	14 @ 15
Bayo, ctl	2 75 @3 25	Brazil	10 @ 11
Butter	3 75 @4 25	Pecans	13 @ 15
Castor	3 50 @4 00	Peanuts	6½@ 7
Pea	4 00 @4 25	Filberts	14 @ 15
Red	2 00 @2 50	**ONIONS.**	
Pink	2 50 @2 50	Red	— @ —
Large White	3 50 @3 75	Silverskin	— @1 00
Small White	4 00 @4 25	do, new	65 @ 80
Lima	4 00 @4 50	Oregon	— @ —
Field Peas, blk eyel	5 @1 75	**POTATOES.**	
do, green	2 00 @2 25	New, lb	2 @ 2½
BROOM CORN.		Early Rose	1 90 @2 00
Southern	3 @ 3½	Petaluma, ctl	— @ —
Northern	4 @ 6	Tomales	— @ —
CHICCORY.		Humboldt	— @ —
California	4 @ 4½	"Kidney	— @ —
German	6½@ 7	"Peachblow	— @ —
DAIRY PRODUCE, ETC.		Jersey Blue	— @ —
BUTTER.		Cuffey Cove	— @ —
Cal. Fresh Roll, lb	28 @ 30	River, red	— @ —
do Fancy Brands	30 @ 31	Chile	— @ —
Pickle Roll	— @ —	do, Oregon	1 40 @1 60
Firkin, new	28 @ 30	Oregon Peerless	1 40 @1 60
Eastern	18 @ 20	Salt Lake	— @ —
New York	— @ —	Sweet	— @ —
CHEESE.		**POULTRY & GAME.**	
Cheese, Cal., lb	12 @ 13½	Hens, doz	5 50 @ 7 50
EGGS.		Roosters	6 00 @11 00
Cal. Fresh, doz	25 @ 26	Broilers	4 00 @ 9 00
Ducks	— @ —	Ducks, tame, doz	6 50 @ 7 50
Oregon	— @	Geese, pair	1 25 @1 50
Eastern, by expr'ss	— @ —	do, young	2 50 @3 00
Pickled here	— @ —	Wild Gray, doz	— @3 00
Utah	— @ —	White do	50 @1 00
FEED.		Turkeys	17 @ 20
Bran, ton	15 50 @16 00	do, Dressed	— @ —
Corn Meal	— @38 00	Turkey Feathers, tail and wing, lb	10 @ 20
Hay	10 00 @15 00	Snipe, Eng	1 75 @2 00
Middlings	22 00 @23 00	do, Common	50 @ 75
Oil Cake Meal	— — @27 50	Quail, doz	75 @ 80
Straw, bale	— 62½@ — 70	Rabbits	1 00 @1 25
FLOUR.		Hare	1 50 @1 75
Extra, City Mills	5 25 @5 50	Venison	5 @ 7
do, Co'untry Mills	4 75 @5 00	**PROVISIONS.**	
do, Oregon	4 75 @5 12½	Cal. Bacon, extra clear, lb	14 @ 14½
do, Walla Walla	4 50 @5 00	Medium	14 @ 14½
Superfine	3 50 @4 25	Light	15 @ 15½
FRESH MEAT.		Lard	13 @ 16
Beef, 1st qual'y, lb	8 @ 8½	Cal. Smoked Beef	11½@ 12½
Second	6½@ 7	Shoulders	9½@ 10½
Third	5½@ 6	Hams, Cal	14 @ 14½
Mutton	4 @ 5½	do, Eastern	16 @ 17
Spring Lamb	6 @ 8	**SEEDS.**	
Pork, undressed	6½@ 7½	Alfalfa	14 @ 16
Dressed	9½@ 10	do Chile	— @ —
Veal	7½@ 8	Canary	3½@ 4
Milk Calves	7½@ 8	Clover, Red	14 @ 15
do, choice	— @ 10	White	45 @ 50
GRAIN, ETC.		Cotton	— @ 20
Barley, feed, ctl	1 70 @1 72½	Flaxseed	2½@ 3
do, Brewing	1 75 @1 85	Hemp	— @ 5
Chevalier	1 60 @1 67½	Italian Rye Grass	25 @ —
Buckwheat	1 50 @1 75	Perennial	25 @ —
Corn, White	— @ —	Millet, German	10 @ 12
Yellow	1 72½@1 75	do, Common	7 @ 10
Small Round	@1 75	Mustard, White	1½@ 2
Oats	1 30 @1 67½	Brown	2½@ 3
Milling	2 00 @2 10	Rape	2½@ 2½
Rye	2 25 @2 50	Ky Blue Grass	20 @ 25
Wheat, No. 1	1 70 @1 72½	2d quality	16 @ 18
do, No. 2	1 62½@1 65	Sweet V Grass	— @ 75
do, No. 3	1 45 @1 50	Orchard	20 @ 25
Choice Milling	— @1 72½	Red Top	— @ 15
HIDES.		Hungarian	8 @ 10
Hides, dry	19 @ 19½	Lawn	30 @ 40
Wet salted	9½@ 11	Mesquit	10 @ 12½
HONEY, ETC.		Timothy	9 @ 10
Beeswax, lb	23 @ 25	**TALLOW.**	
Honey in comb	14 @ 18	Crude, lb	6½@ 7½
Extracted, light	9 @ 10	Refined	10½@ 11
do, dark	7 @ 8	**WOOL, ETC.**	
HOPS.		SPRING—1882.	
Oregon	20 @ 21	San Joaquin, free	20 @ 23
California, new	22 @ 25	do, fair	18 @ 19
Wash Ter	19 @ 20	do, dusty	15 @ 17
Old Hops	— @ —	Southern Coast	15 @ 18½
NUTS Jobbing.		Stanislaus & Tuolumne	23 @ 27
Walnuts, Cal	10 @ 11		
do, Chile	7½@ 8		
Almonds, hd shl lb	8 @ 10		

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., May 17, 1882.

FRUIT MARKET.		Pears, sliced	— 9 @— 9½
Apples, bx	2 00 @ 3 50	do whole	— 7 @— 8
Bananas, bnch	2 50 @ 4 00	Plums	— 4 @— 6
Cherries	— 8 @— 25	Pitted	— 11 @— 12½
Cocoanuts, 100	6 00 @ 7 00	Prunes	— 9 @— 10
Cranberries bbl	12 50 @14 00	Raisins, Cal, bx	— — @ 2 50
Gooseberries	— 4 @— 10	do, Halves	— — @ 2 75
Limes, Mex	8 00 @10 00	do, Quarters	— — @ 3 00
do, Cal, box	2 00 @ 3 00	Eighths	— — @ 3 25
Lemons, Cal, bx	1 75 @ 2 50	Zante Currants	— 8 @— 10
Sicily, box	6 50 @ 7 50	**VEGETABLES.**	
Australian	— — @— —	Artichokes, doz	— — @— 50
Oranges, Cal, bx	3 50 @ 4 50	Asparagus, box	1 00 @ 1 25
do, Tahiti M	— — @25 00	Beets, ctl	— — @— 75
do, Mexican	15 00 @17 00	Cabbage, 100 lbs	1 25 @ 1 40
do, Loreto	— — @— —	Carrots, sk	— 50 @— 60
Pears, bx	— — @— —	Cauliflower, doz	— 50 @— 60
Pineapples, doz	8 00 @ 9 00	Cucumbers, doz	— 50 @ 1 25
Strawberries, chest	8 00 @11 00	Garlic, lb	— — @— 1½
DRIED FRUIT.		Lettuce, doz	— 10 @— —
Apples, sliced, lb	— — @— 10	Mushrooms, bx	— — @— —
do, evaporated	— — @— 12½	Okra, dry, lb	— — @— 50
do, quartered	— 6 @— 6½	Peas, green, lb	— — @— 1½
Apricots	— 21 @— 22	do, sweet	— 1½@— 2½
Blackberries	— 14 @— 16	Parsnips, lb	— — @— 5
Citron	— 28 @— 30	Rhubarb, bx	— 65 @ 1 00
Dates	— 9 @— 10	Squash, Marrow fat, ton	— — @50 00
Figs, pressed	— 4 @— 7	String Beans	— 10 @— 12½
do, loose	— 3½@— 4	Summer Squash	— 8 @— 10
Nectarines	— 14 @— 15	Tomatoes	— 15 @— 18
Peaches	— 7 @— 9	Turnips, ctl	— 75 @ 1 00
do pared	— 18 @— 20		

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., May 17, 1882.

Eng Standrd Wheat	8¾@ 9	45 inch	9½@ 9¾
Cal Manufacture		40 inch	8½@ 8¾
Hand Sewed, 22x36	8¾@ 9	Wool Sks Hand Swd	
20x36	8½@ 8¾	3½ lb	— @47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	— @49½
Machine Swd 22x36	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10½	Bean Bags	6½@ 7
Quarters	6 @ 6½	Twine, Detrick's A	32½@35
Eighths	4½@ 4½	" " AA	35 @37
Hessian, 60 inch	— @12		

E. DETRICK & CO.,

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BAGS AND BURLAPS OF ALL KINDS.

BAG TWINES—HYDRAULIC HOSE.

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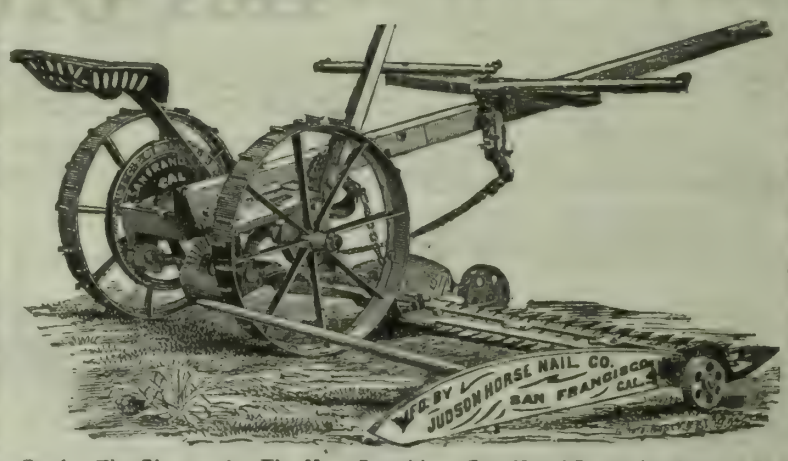

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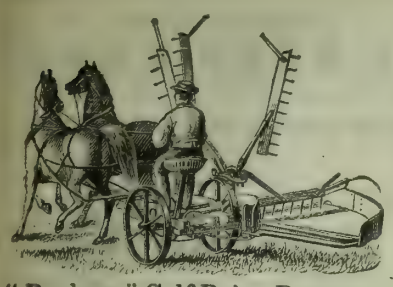

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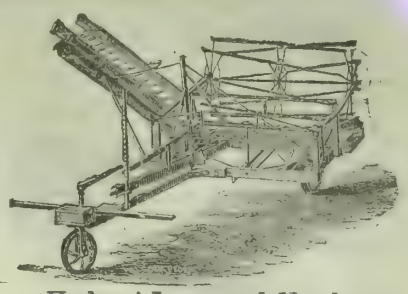
FOR THE PURPOSES FOR WHICH THEY ARE DESIGNED.



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THE "BUCKEYE" SELF-RAKE REAPER IS THE LEADING HARVESTER OF THE WORLD!

Its average Durability has been from two to three times greater than other machines, and the cost of keeping it in repair less than one-half. We thus give you a machine worth two to three times as much as any other.

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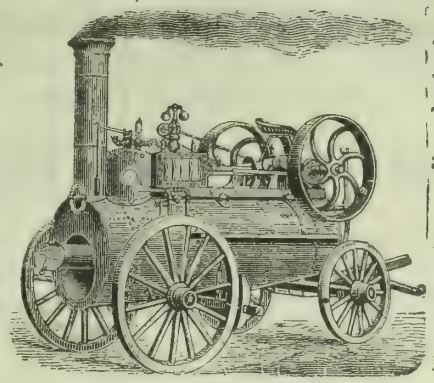
And many Important Improvements for the Harvest of 1882, and excel any ever before made. The Hodges' Headers maintain their reputation as the

BEST IN THE WORLD!



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THE

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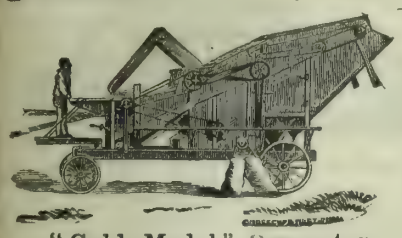
THE SCHUTTLER WAGON HAS A REPUTATION FOR STRENGTH, DURABILITY AND LIGHTNESS NOT EQUALED BY ANY WAGON IN THE WORLD—WITHOUT DOUBT THE BEST WAGON MADE.



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Persons Wanting Harvesting Machinery

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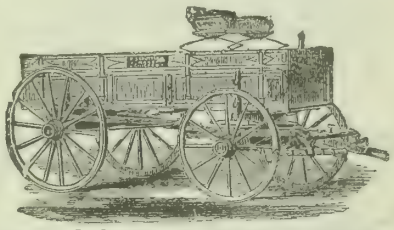

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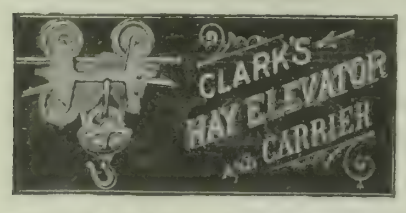

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Hoof and Healing Ointment	Horse Liniment	Condition Powders.
For Brittle Hoofs,	The most effectual	For Inward Strains,
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Some 14,000 out of 26,000 acres of the grant remain for sale at comparatively low rates, in quantities to suit purchasers, on easy terms. Prices range from $5 to $30 per acre. The tract is between two and three miles wide, with the Northern Division of the C. P. R. R. passing centrally through its entire length. Send postage stamp for free circulars containing information about Shasta County and these lands, to the proprietor of Reading Ranch.

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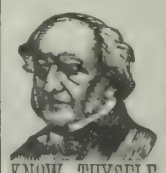

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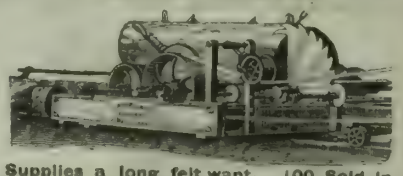

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Every owner of a timbered lot is interested in having one of these Mills in his neighborhood. No more hauling logs to mill. All the waste saved.

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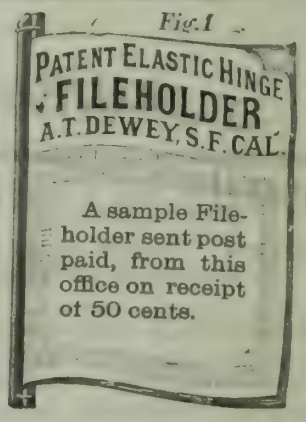
Fig. 1



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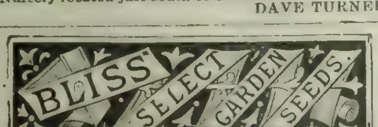

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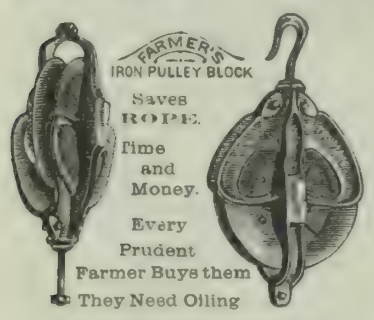

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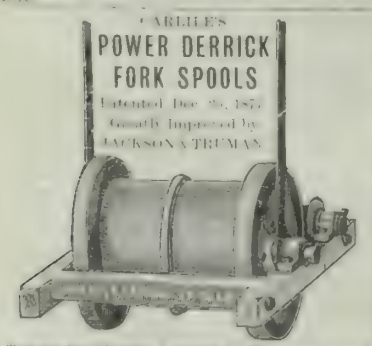

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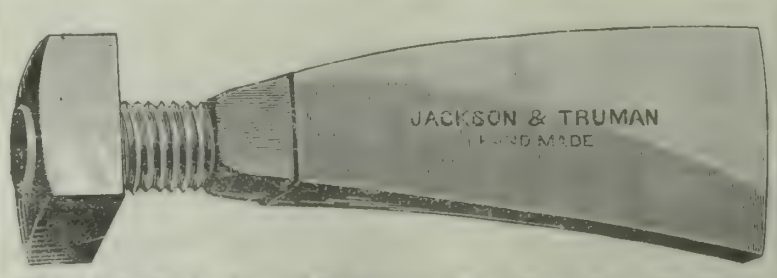

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PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, MAY 27, 1882. Number 21

Annatto.

We give on this page an engraving of the foliage and seed capsules of a shrub which has a peculiar agricultural interest in this country, in that the interest lies rather in its use than in its growth. It is the plant which yields the yellow coloring matter used for imparting a golden hue to butter and cheese, whenever the dairy man finds that his market value is improved thereby. It is a plant of many names, and may be called annatto, or annotto, or annotta, or arnatto, or arnotto. Or, if none of these suit, it may be called rocou, or orlean, or achiote. The botanist, however, escapes from this maze of synonyms and names it *Bixa orellana*. Botanically, the genus *Bixa* belongs to the order *Flacourteaceæ*—a natural order of exogenous plants, allied to the passion flower, consisting of shrubs and small trees, almost exclusively confined to the warmest parts of the globe. The genus *Bixa* is distinguished by complete flowers with simple stigma, a bispid calyx of five sepals, and a two-valved capsule, as may be seen in the engraving. The shrub annatto is a native of tropical America, but has been introduced in other warm countries, and is now grown for its commercial product in Africa, the East and West Indies and South America, but is chiefly cultivated in Guadaloupe, Cayenne and Martinique, and sparingly in Mexico and Brazil. In the three French colonies named they have about 6,000 acres of land in cultivation, and produce annually about 3,000,000 lbs. of the commercial annatto.

The coloring matter in the plant lies in the pulp which invests the seeds. It is of a reddish color, and the yellow tint in butter and cheese is secured by great dilution—a little excess would give the material a deep red color. The natives in the countries where the shrub is grown, employ various methods to separate the coloring matter from the seeds and reduce it to a merchantable form.

1. The pulp and seeds are treated with hot water, left to macerate in the presence of an anticeptic, and separated by pounding with a wooden pestle; the seeds are strained off, the pulp is left to settle, the water is decanted, and the coloring matter, in a pasty condition, is exposed in shallow vessels to dry gradually in the shade. When sufficiently consistent, it is made into rolls or balls of two to three ounces, and dried in an airy place. 2. The entire ripe fruit is coarsely crushed, treated with hot water, and soaked for several days; the seeds are then strained off, and the pulp is left to ferment for about a week; the water is poured off, and the dye-stuff is dried in the shade till it can be made up in cakes of three to twenty pounds, and covered with banana leaves. This is known as "flag annatto;" it is inferior, owing to the fermentation. The fresh article contains about 5½% of coloring matter and over 70% of water. 3. The Indians adopt a laborious process. They rub the fruit with oiled hands till the pulp is separated and reduced to a clear paste; this is scraped off the hands and laid on leaves to dry in the shade. The product is very superior.

In this country there has been considerable effort expended in producing the annatto color in its best condition for dairy use. The new and excellent catalogue of Burrel & Whitman, of Little Falls, New York, the leading dealers in dairy appliances and supplies in this country, shows that much is gained by preparing the color without the use of heat. They have a preparation called "annattoine," made by simply soaking or washing in pure cold water the pulp or coloring matter off from the surface of the seeds (the inside of the seed being perfectly white and containing no coloring) and afterwards separating the coloring from the liquid, and then drying and pulverizing it. All of this process is done without the application of heat, thereby not injuring the strength or life of the color, and, as important, securing the color perfectly pure and in a dry form like flour. Annattoine is now used largely in coloring and printing woolen goods and calicos, the color remaining "fast" and beautiful, fully 10 times as much being used for this purpose as for coloring butter and cheese.

The Indians rub the coloring matter into the skin of their whole bodies, thus intending both to adorn themselves and to obtain protection against the bites of mosquitos. Annatto is used in medicine for coloring plasters, ointments, etc. and in dyeing it was formerly largely employed to impart an orange tint to simple yellows, but it does not impart a permanent color and other materials have been substituted for it. It is also used in some varnishes. In South America, it is very extensively mixed with chocolate, both for color and improving the flavor. The seeds are said to be cordial, febrifugal and astringent. The roots are used in broth and have the properties of the seeds, but in an inferior degree. Thus it appears that the use of annatto in dairy products cannot be injurious to its food value. Whether it is well to color dairy products is a moral question. It is evident that by the careful use of the color the product is made more acceptable to consumers, and if the trade here calls for color in the bandage rather than in the cheese, as at the East, in the bandage is the place to put it.

FOLIAGE AND FRUIT OF THE ANNATTO PLANT—Bixa orellana.

FRUIT FROM COLTON EASTWARD.—The railroad has given the same rate for eastward shipment of green fruit from Colton as from Los Angeles. The Riverside *Press* says this concession saves $68 on the car to shippers of green fruit from Riverside. At these rates Riverside fruit is shipped East at the same rate paid by the Los Angeles shippers.

THE people of the burnt district in Michigan have not been idle since the fires. Thousands of neat, comfortable houses are being built, and hundreds of acres which were covered with thick underbrush before the fire are now green with wheat and other crops.

Silk Culture.

The California Silk Culture Association is continuing its work with vigor, and with increased interest on the part of the people. At a meeting held on Thursday of last week a stirring address was made by Rev. C. A. Buckbee, in which he advocated a silk-reeling school in San Francisco, and from facts gleaned from the Philadelphia school, said: The California Silk Culture Association has a work to do for the Pacific coast. The success of its benevolent mission requires the establishment of a silk-reeling school. It must do for this part of the country what the noble women of Philadelphia are doing for the East. Generous men have helped them there, and equally generous men will help you here. The speaker estimated the cost of a school at two thousand dollars, and said: With such a fund as this we feel confident that a silk-reeling school could be successfully established, a sure market opened for the sale of silk cocoons, for the benefit of families now raising them in eight or ten of the counties in the State, instruction given to girls and women, who would spread the knowledge of silk reeling in all our homes, and an enduring interest awakened on behalf of this new and remunerative home industry that would, in a few years, make California as noted for its silk productions as it is now for its other world-renowned productions of wheat, wine, fruits, etc. The Association was urged to arrange for holding a popular public meeting, and to institute such measures as will secure the presence of as many as possible of the best men and women of this city.

It is a fact of much importance that Prof. Wilkinson, Superintendent of the Deaf, Dumb and Blind Asylum, at Berkeley, is ready to establish a filature and buy cocoons as soon as he can be assured a good supply.

The latest item of silk news from the East is the organization of the North American Silk Exchange in New York, for the purpose of stimulating silk culture in the country. They propose to invest in lands, mulberry trees, etc., in different parts of the country.

Activity in the Call Business.

They are having the liveliest kind of times over the call system of grain selling in this city. Since its opening, which was described in the RURAL last week, the transmogrified Stock Exchange has attacked the grain with the zeal of a green flailer, and though some hard knocks were gained at first through ignorance of the subject, the stock gamblers have already become quite expert, and talk of cereals as glibly as of wildcats. Indeed, so much life and gambling disposition has been manifested that members of the Produce Exchange, in spite of their rules forbidding it, are gaining membership in the Pine street concern. The *Call* says:

> The system of selling cereals on call, which was begun Feb. 27th, was continued very modestly by the Produce Exchange until last week, when the stock brokers started in. At that moment a complete metamorphosis took place. The brokers, lively and business-like, took hold of wheat and barley as familiarly as if they had been in the business for years, and have so increased the volume of trade that there are now over 30 applications for membership with only 17 seats yet unfilled. The desire to obtain seats is so great that yesterday $700 was bid for a membership, and the regular entrance fee is only $200.

The court which some of their members are paying the new "call" concern is stirring up the Produce Exchange managers to do something to stimulate gambling on their own floors, and yesterday it was decided to have a second session each day at 3 P. M. As it now stands, there will be a stretch of gambling from 11 o'clock A. M. to after 3 P. M.; first at the Produce Exchange, next at the Stock Exchange and again at the Produce Exchange. It is now in order for the Stock Exchange to declare an evening session, and the speculative community can be kept occupied during all its waking hours. There is sure to be a lively contest between the two "call" organizations, to see which will do the most business. There will not be much of a crop this year, but that does not matter. There is nothing to interfere with their selling more wheat in a day than the State can grow in a year. They deal in varieties of wheat, barley, corn, etc., which are not affected by drouth, wind, rust or bugs—grain which is made of paper; which cannot be ground or eaten, and so there is always plenty of it.

There is one hope in the present state of affairs for the growers at least, and that is that the revolution will sweep away all the old rings and combinations to put down grain and put up bags and freights. Nothing could be much worse than the old system, and the new may be better. It is well enough once in a while to stir up the dry bones, and that is now being done in the grain market most effectually. The *Commercial News* says: "A great change has come about among dealers regarding the speculation in grain. Several years ago a young gentleman from Chicago endeavored to inaugurate the call system here, but his efforts met with no encouragement. A leading merchant, the one most prominent in opposition to his plan, is a newly elected member of the Grain Exchange. That the call boards have infused new life into the grain trade, no one can doubt, and there will be plenty of business for both institutions." Yes, there will be "plenty of business"—and if the supply should decline, all they have to do is to make some more. There is no more accommodating material in the world than the grain exchanges deal in.

SEVENTY of the principal firms of Moscow have addressed a memorial to the Minister of Finance, setting forth the disastrous consequence of expelling the Jews from Moscow.

PARNELL has decided to continue the leadership of his party in the House of Commons. Davitt proposes to take the American platform in a campaign in favor of the Land League.

THE STABLE.

Horse Breeding in California—No. 9.

Written for the PRESS by JOS. CAIRN SIMPSON

Roadsters and Fast Trotters.

In the last paper a description of Piedmont was given, this noted stallion coming very nearly to my ideas of what a roadster should be. It is not expected that a horse of this type can be produced with anything like uniformity, as the price he brought ($27,500) shows that it is extremely rare to find a combination of the qualities he possesses. His great rate of speed, 2:17¼, was the main factor in fixing the valuation, and his size, harmony of proportion, breeding, etc., a secondary consideration, though to the general breeder of more value than the immense flight of speed. These can be reproduced with more certainty than the faculty of going a mile in such rapid time, and to the farmer who is looking for a certain return for his investment, is the first consideration.

In order to show what my ideal of a model roadster was, and to compare it with the actual, as shown by Piedmont, I copy from "Horse Portraiture" part of the chapter on form. As that was written and published 16 years ago, it is the model which I then thought to be the best. The experience of the years which have lapsed since has not materially changed my views, though some of the deductions I have found to be erroneous. Thus in the race-horse, instantaneous photography has shown that the "loin, quarters and hind legs are not the seat of the propelling force."

The last impulse to hurl the body through the air is given by the fore leg, and the "cloddy" shoulder of Eclipse was one of the physical attributes which made him so far superior to his contemporaries. The short scapula was objectionable, however, though it is probable that this was more apparent than real. A shoulder blade thickly covered with muscles would appear shorter than one which was only lightly clothed, and the width across the withers might be due to the same cause.

Until the camera disclosed the actual manner of progression in the fast paces of the horse, there was no real knowledge, and hence I shared in the errors which were universal, and though not so far astray in depicting the trotting action, I was in total ignorance of the manner the horse used his limbs in a fast gallop. The description in the book is not fanciful, the portrait of the "Falcon" being a "life study," the original being, in my estimation, one of the truest formed animals I ever saw.

Considering the bony framework of the horse as a machine that is set in motion by the action of the muscles, it is very important that their force should be applied in a manner that will effect a certain result with the least expenditure of power. The loin, quarters and hind legs are the seat of the propelling force. While I have no faith in reducing the form of the horse to a mathematical problem, calculating by a series of angles the extent of stride a certain configuration will give, there is still an adaptability of the parts found in a great majority of good horses. The exceptions only prove the necessity of a form approximating the model; for though we find some points of a good performer not in accordance with this principle, we will discover a counteracting force that overcomes the obstacle. Because English Eclipse had a short, thick shoulder, we must not flatter ourselves that, as our favorite has the same defect, it is not an injury. The powerful quarters that overcame this serious defect in the Eclipse are rarely found; and though the English champion had strength enough in these to overbalance the resistance of the heavy shoulder, it would retard a horse of ordinary power, till he would be useless as a racer.

The hind legs are joined to the body by the upper part of the femur being articulated with the pelvis, the joint forming the connection. The length of that part of the pelvis which is termed the ileum constitutes what we call length of hip. In the Falcon, this is of more than ordinary length, which is an advantage in giving more room for the attachment of the muscles that exert their force from this region. A level hip is generally looked upon with the most favor, as the form which will give greater power to the muscles joined to the femur; but I am inclined to think that a slight declivity is better, by lengthening the limb this much, and thereby giving a greater reach in the stride. Too much obliquity is a deformity that loses this advantage, by the femur forming too obtuse an angle with the ileum, and, consequently, a waste of the force applied. The length of the femur, or the bone that reaches from the upper joint to the stifle, is also of importance, not only giving better attachment for the muscles, but placing the stifle where it will not be impeded in its motions by the abdomen. The next bone—the tibia—extending from the stifle to the hock, forms just the right angle in the Falcon to please me. It is oblique enough to place the hock at the proper position with the body. When he stands in a natural manner, a line dropped from the point of the buttock will fall a trifle in front of the point of the hock. This increases his stride without diminishing the force that the muscles exert.

His hock is superb, being both wide and deep. This joint has probably as much to do with fast motion as any other in the frame. From its being the seat of lameness, in nine cases in ten, of the hind extremities, we will rightly infer that any weakness in its construction is soon manifest. By being large, the tendons form strong attachments, guarding against strains, and by the posterior bony process—the *os calcis*—being long, the tendon, which we call the hamstring, has the advantage of working on a longer lever, doing the business easier, and propelling it farther in advance than it could if this were shortened. The length of this bone also gives the wide gaskin, universally recognized as a mark of speed. Looking at the cannon bone from behind, you would think it was too long; but as you step into a position to take a side view, you find it to be very short, and the term "well let down in the hocks" can be applied to Falcon with truth. Long from the point of the hock to the pastern, measuring down the tendon, and short from the joint, when following the metatarsal bone, is the true configuration; and I never saw a horse that excelled him in this particular. The pasterns I like to be of good length, in order that there may be elasticity enough to give freedom to the joints in the foot, adding a little to the ground covered by the hind legs; and as every inch gained in the stride is an object to be looked after, this form of the pastern is the proper one. The quality of the muscular covering to the bones we cannot arrive at, though I am inclined to think there is not the difference in them in horses of greater or less speed, as in the manner in which they act, which is determined by the position of the bones. Thus their greater force of action, which enables an animal to stride from two to five feet farther with the same outlay of power, is due to their being placed in a position where their contractions and expansions exert a greater force. These wiry, tendinous masses that are so apparent in the Falcon may exist in an inferior animal; but, owing to their being placed in a wrong position, or encumbered by matter that is a hindrance to their motion, they cannot act with the same effect.

The broad, arched loin is a mark of strength; and while a horse that is slack there may have a great deal of speed, it is seldom coupled with endurance. There is considerable motion at this point, owing to the flexibility of the backbone; and I always like to see this flexibility apparent. I do not mean the scringing motion a horse makes, on pinching him, indicating soreness, but a kind of swaying movement in the walk, which most race-horses display. As you stand squarely behind the Falcon, the muscles are developed in harmony with each other. Those on the upper thigh and gaskin are proportioned right, while the inner ones have the same equilibrium. They are long, not covering the tendons, as it were, but merged into them by degrees. In taking this rear view, we see the ribs forming a curve, which is not hidden by the quarters, showing that he is good in the carcase or middle piece. This gives room for the internal viscera that are situated back of the diaphragm; also giving that important muscle room to assist in respiration. His body is that of an elliptical truncated cone, the base at the point I have just mentioned, and the apex where the neck is joined to it. This conformation gives him great depth through the heart, and is much better than if more cylindrical, as the expansion of the chest is greater than if circular. If the chest were a circle, there could be no expansion, while with this form the dilatation is sometimes so great as to burst the girth that confines the saddle. The high and broad shoulder-blade drops back towards the sway, till the distance between it and the anterior part of the pelvis is very short, in comparison to his whole length. This gives the proper angle with the upper arm, permitting the legs to be thrown forward much more than they could be if it were short and upright.

The elbow-joint is parallel with the body. In our former conversation I dwelt at some length on the necessity for this joint being thus truly placed, any divergence interfering with the action. The sloping shoulder not only gives greater stride, but the concussion is less, which is also important. When the weight of a horse's body is propelled with the rapidity which the well-formed quarters and hind legs give, there must be some contrivance to lessen the jar. Thus we see the hind legs are joined to the frame, and tied to it by powerful muscles and sinews, but the fore legs receiving at least three-quarters of the weight, could not be so attached without danger of knocking the machine to pieces. Elastic cushions are placed between the shoulder-blades and the body, and the spring formed by the angular position the humerus and scapula assume further guards it. Length in the fore arm is as essential, or more so, than in the corresponding bone in the hind leg. It gives greater leverage, and enables the animal to cover more ground in the stride. The large broad knee is nearly indispensable to a fast horse, by giving more room for a proper fastening of the tendons.

Many hold that a small knee is the proper formation. Examine Kentucky, Norfolk, or Asteroid, and I will warrant all three of them have broad, lathy knees. The bone that projects from the back part of the knee should be large and prominent. The back muscle is attached to this by the tendon, and of course is more firmly bound to it than if it were smaller. I have heard horses, with the trapezium very prominent, called "out away below the knee," when their legs could not have been bettered. The knee has a very important duty to perform in a trotter, and unless a horse has the proper action in it, or acquires it, he will never be likely to go fast. I have also heard people find fault with a broad knee in a harness horse, arguing that he would be more likely to strike it than if smaller. The position of the limb has more to do with this than the size of the joints, and where the legs are straight, falling from the body as truly as those of the Falcon, it will take very bad handling to endanger them. A short cannon is the usual accompaniment of a long fore-arm. The ligaments and tendons that convey the motion from the muscles have an important duty to perform. They should be large, giving the leg the flat appearance so desirable, and no inequalities should be perceivable to the eye, or be felt as the hand is passed down them. Their size renders them less liable to strains, or rupture of the delicate membrane that covers them, and a round, fair-sized pastern-joint gives them a better fastening. The long, springy pastern is of fully as much advantage in the fore-legs as in the hind, giving, as I said before, more freedom of motion to the lower pastern and navicular joints, and acting as an additional spring, to preserve those delicate articulations from injury by concussion. The round, medium-sized foot, with proper strength of horn, we have discussed before. While the neck has nothing to do with progression, a proper form is requisite; this we also noticed in our conversation on sweating.

The great reservoir of power is the brain, and, confident as I am that it has more to do with making the successful trotter or race-horse the superior of his compeers than either osseous or muscular formation, yet, as it is not in as tangible a form, I speak of it with delicacy, the fact being incapable of demonstration, and only to be ascertained by inference. For instance, we have seen horses of perfect frame, whose bodies were a type of ninety in a hundred that have shown themselves possessed of speed and endurance, their condition perfect, and brought to the post by those who could manage them in the best manner, yet not worth, as racers, the last feed of oats they eat.

The "brain force" is an element which must not be overlooked, and though more difficult to demonstrate the value of it than to explain the advantages of proper formation, there are indications which will be of service to the student. It is of so much importance that the consideration will fully occupy a chapter, and the next paper of the series will be given to that important topic.

FORESTRY.

Keep Your Oak Trees.

EDITORS PRESS:—An imperfect idea of the cash value of the beautiful is common to our pioneers—those strong ones who pave the way for population. When they arrive in new places their only notion is the forcing of the ground to give an immediate return. Anything which conflicts with this idea must give way. Thus through ignorance these good citizens often rob themselves, and every year destroy many dollars' worth of nature's improvements—beauties which can never be replaced. So it is that many of the immigrants to the San Gabriel valley diminish the actual money price of little places while they think they are increasing it, and work hard to increase their own discomfiture. Every month, yes, every day, men may be seen with the sweat on their brows, cutting off their old oak trees. Several men beyond Pasadena having 30 or 40 acres have cut down the only trees they had on their places. One of them had a single tree. It was a beautiful, great, spreading oak. Beneath it, in the sun-sprinkled shade, could have been spread a feast for many. That tree would have been a joy forever, but the pioneer cut it off and at the same time cut off at least $1,000 from the value of his land. An ignorant man, with his ax, in an hour or two, destroyed the work of centuries. The cutting of trees seems to be so thoughtlessly undertaken. Soon these men, sometimes at once, go to planting ornamental and shade trees. It is strange that they do not leave their oaks. The red or so-called live-oak of California is the most beautiful shade tree in the world. It is hardy, thrives without care or attention, and grows in the most picturesque manner, with its generous spread giving an ample shade.

Sometimes the farmer excuses himself for cutting his trees by the plea that the oaks grow irregularly, and that by removing them he can make a straight line of some quick-growing tree. But he can never improve on nature. The scattered oak grove is always more beautiful in its arrangement than anything achieved by man in that line. The greatest landscape artists now endeavor to imitate natural groupings and avoid altogether the old formal straight rows of trees.

Of course the poor man coming into the San Gabriel is justified in doing with his land what will most quickly lead him to a competence. His judgment is now that this result will be surest attained by clearing up and planting something that will give, by and by, an annual return in crops, such as vines, fruit trees, etc. Here is his mistake, for as a matter of fact, the value of places in our valley will not be determined by their productive capacity. People are already coming to us in large numbers who desire only a home, or at least a place to escape the rigors of their climates, whether it be the winter of the East or the summer of Arizona. They do not want a farm. The motive which most influences these people in buying or renting is, after climate, beauty. Nothing can be more beautiful than our oaks, and as they cannot be quickly grown nor transplanted, the lands where they are must become very valuable. It is very doubtful to-day whether a 10-acre ranch covered with fruit trees would sell for as much as one with an oak grove on it. Certain it is, however, that in a very short time the native trees, oaks, sycamores, etc., will add more to the value of small places than any possible combination of orchard or vineyard.

Every day the preciousness of beauty becomes more apparent. Even the pioneer recognizes the advantage of shade trees, not perhaps appreciating their money value, but because of the pleasure they give him and his family. Often the first thing that he does after cutting off all the native trees is to put in a quantity of foreign ornamental plants and waits hopingly for them to grow up—and this) after destroying better things than they can ever be. It is certainly strange that people so frequently overlook the charms which surround them, traveling into far countries to find things inferior to their own. This is especially noticeable in California, for our flowers, our chaparral, our sycamores, our pines, and especially our oaks, are so striking and so beautiful that the world is coming to see them. What can be more complete in its dignity, its graceful outline, its dark glossy foliage and its rugged health, than the live-oak tree. It is an excuse to live when we dream away our leisure hours beneath them.

These trees, as they stand, have a great money value which needs only to be pointed out to preserve at least those on small places, and on such large ones as are to be divided. Every lover of trees should constitute himself an apostle of information in this matter. Whatever one does, an artificial grove of costly foreign trees, to be waited for during many years can never be made to look so well, can never be so hardy, can never be so at home as the native one. Nor can any foreign tree ever equal the untrammeled oak. The value of a good oak tree on a small place cannot be less than $1,000, and may be $5,000. One often now hears people say, "Well! I would give a thousand dollars for such an oak on my place." Amongst Mr. Cooper's oaks, in Santa Barbara, which people drive 15 miles to see, one often hears a higher value put upon this glorious tree. As a business transaction alone, it would be well to instill some discretion into the axe man; but, besides the individual, communities should pay attention to the preservation of their attractions.

The tourist is a mine of wealth. It is good judgment to please him and a good deed to make his journey agreeable. When this can be done with benefit to the community so acting it is doubly to be praised. Many tourists come to California. As the country increases in wealth, and as the facilities for reaching it are multiplied in the way of new routes, faster time and cheaper fares, many more will come. These tourists spend a great deal of money. They naturally congregate in the pleasantest places. In them they spend their money. The tourist, especially the wealthy ones, esteem the canyons with trees and vines, the oak groves, the twisted sycamores and the wild flowers the most attractive parts of our country. Without exception they regret the destruction of these our strongest attractions. Now the question is, can not our communities organize as in the East? Many villages have gone into village or city improvement societies, and while it is yet time to reserve some of the most beautiful canyons and groves and protect them from destruction. Keeping them for themselves, their children and friends is quite motive enough, and also to attract the stranger. It will pay to do it. The money return will more than repay any reasonable outlay. The communities that do this will be the celebrated ones; at once the most pleasant to live in, and the easiest to sell or rent property in. To them will go the rich invalid or tourist, brought by the renown of the beautiful drives or walks. He will keep the hotels and boarding-houses full. It is he who will make a local market for the milk, butter, eggs, fruit, vegetables, etc., produced.

Many of us would preserve the trees anyway for the love of them, but here is a reason to justify the greatest hater of nature to be tender with that retiring dame and kind to the friendly tree. There is money in it.

ABBOT KINNEY.

Kinneloa, May 20th.

PLUMBAGO.—Six million pounds of plumbago are annually imported into the United States, and it is estimated that the home production in New York, Pennsylvania, Canada and elsewhere equals this amount. This valuable material is used principally in the manufacture of lead-pencils, stove polish and crucibles. Its market price varies, according to quality, from $25 to $75 per ton. There are great quantities of this mineral in this State, but no one pays any attention to it. On the Opir grade, between this city and Washoe valley, there is a large deposit that can be had by anyone who cares to locate and explore it. All that has ever been done with it was some surface shoveling in the early days by parties who tried to make fire-proof brick out of it by mixing with it a certain proportion of clay, and then burning.—*Enterprise.*

SERICULTURE.

Silk Culture in California.*

(Continued from last week.)

CONCLUSION.

Silk culture is a business which can readily be started, and with but little capital. You can make it build itself up by merely putting in a little work at a time when you have little or nothing to do. The children, either girls or boys, can do it. The labor required will be instructive recreation. It need not interfere materially, even when conducted on quite an extensive scale, with the usual farming operations, as it comes between the seasons of farming proper.

All that is needed to make silk culture a success in California is a little earnest work in disseminating the right kind of information to induce our farmers' wives and children to produce the cocoons. This work the ladies of the California Silk Culture Association are now engaged in. They are endeavoring to encourage the culture of silk—the production of cocoons—among the farmers of the State, until it shall become here, as in Southern Europe, a great and leading industry; an industry especially important in its relation to home employment, to domestic comfort, and remunerative beyond any other which can be engaged in around our firesides. By introducing the process of reeling, families and children may therein find remunerative employment the year round. More than any other it will dignify labor in our homes, and give employment to those of our boys and girls who most need it.

In order to inspire confidence and ensure a market for cocoons a little capital is needed to establish a cocoonery and procure a few reels with which to start a filiature. We have an abundance of skill and experience now in this city to do the work, and we have a good market for the raw silk at our own factories, already in operation in this city, in Sacramento and at San Jose, which now import their silk from Japan at a cost which will well repay its production here.

The silk business is, perhaps, the most profitable of all the industries in France or Italy. The superior facilities of our climate, and the better educated and more apt character of labor here, is more than an offset for the difference in the cost of labor between California and that of other countries.

The governments of France and Italy encourage the industry in various ways. The advantages derived from it are freely dwelt upon in all their journals, and are continually urged by their leading men. The methods and practice of silk culture are taught in all the schools throughout France, from the primary to the grammar grades, in the convents and in all the high schools. All classes have constantly impressed upon them its simplicity, its usefulness and its necessity. It can be carried—the reeling and weaving—into every household, in city or country, where there is time to spin and weave for employment. There is no other industry in the world which can be made so generally universal in a community, or for which there is so little importance, in the matter of economy, that it should be conducted with large concentrated capital or in large establishments. From the feeding of the worms to the weaving of braids, ribbons, dress goods and the knitting of hosiery, it can be conducted quite economically in a family.

GENERAL REMARKS.

We give annexed a representation of the silkworm at its work in its natural condition. The female moth is seen laying her eggs upon a leaf of the mulberry tree. The chrysalis from which she has just emerged is seen near by. A full-grown worm is also shown, just about ready to commence spinning its cocoon. The manner in which the cocoon is attached to the leaf is also shown. Although the matured fruit appears while this work is going on, it is proper to remark that the worm completes its labors and constructs and enters his silken shroud long before the fruit of the tree is ripe. After the leaves have given off their substance to mature the fruit they would not contain the proper nourishment for the production of a good article of silk.

The late exhibitions of silk culture at Atlanta and Philadelphia seem to have awakened a new interest in the work throughout the Union. The managers and judges of the Silk Department at the Atlanta exposition took especial pains to examine closely into the practice and economy of the business as conducted in this country. Their selves pecuniarily during the period of their minority.

The Atlanta Committee, in the course of its report, says: "In no business can women be more profitably and respectably employed than in the production of silk. The draft upon our national resources for imported silk has been one of great magnitude. If patriotism and the love of independence are the offspring of America, let us unite our efforts, and, by the aid of our Legislatures, our Representatives and an intelligent agricultural people, at once encourage, protect and foster the production of American silk."

As an outcome of the Philadelphia exhibition, the manufacturers of textile fabrics in that vicinity have contributed $20,000 for the establishment of sericultural schools, or filatures, by which a ready market can be obtained for cocoons that may be produced in that locality. It is only by such enterprise and by such means that this country can render itself independent of China and Japan, and compete successfully with England, France and Germany in the product of silks.

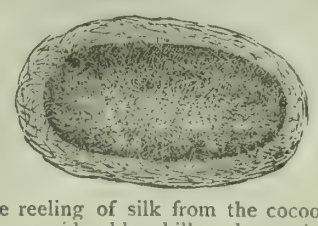
It is the establishment of schools and report is highly favorable, both as to its practicability and profit.

The manufacturing portion of the industry is already well established. The great need, now, is that we should produce our own raw silk, for the supply of which many millions of dollars are now annually sent out of the country. The exhibitions referred to have

THE SILKWORM IN ITS NATURAL STATE.

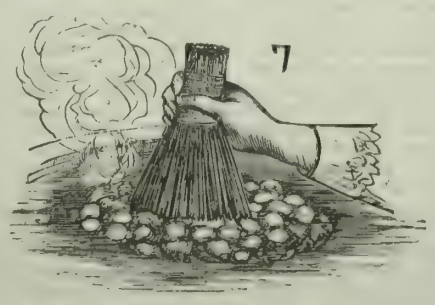
abundantly proved that the production here of the very best silk is possible, and those who have tried it on a practical scale, at the South, have pronounced it profitable. It is a branch of American industry which commends itself to all who desire to see the wealth that grows from it retained in our own country. It moreover commends itself as an industry especially fitted to a large class of American women, who need some employment to keep them from being dependent on others; also to children of both sexes, but especially girls, who have need to do something with which to help them-filatures and a constant reiteration of the importance of the business that has placed those countries at the head of the silk business, and given them almost exclusive control of one of the most important national industries of the world. Will not some of the wealthy and enterprising capitalists of this State make a small venture in the same direction, to encourage the movement already initiated, to place California in the list of the silk-producing countries?

The figure given herewith represents a half section of a cocoon, with the outer floss or loose covering stripped off. The floss thus removed is economized by being carded and woven up like wool or cotton. The same use is also made of what are called "pierced cocoons"—those from which the moths have been allowed to work their way out for purposes of reproduction. It will be seen, by reference to the figure, that the worm does not wind in concentric circles, as a ball is wound, and as might be supposed would be the case; but the silk is laid on irregularly, in a sort of figure 8 loop, placed first in one place and then in another, and so laid that in reeling several yards of silk may be sometimes reeled off without turning round the cocoon.



The reeling of silk from the cocoons requires considerable skill and practice, but still the process can easily be learned from a skilled operator. Reeling may be done at any season, and is very pretty work for young ladies to do at home. Great improvements have recently been made in reeling machines, which are very simple in their construction and not costly.

In proceeding to the operation, the cocoons are thrown for a while into a vessel of warm water, where the gum, which always accompanies silk as it is laid on the cocoon, will soften and dissolve. Soft water should always be used. The temperature must be a matter of experience, and will vary somewhat with the different kinds of cocoons and different qualities of the silk. The water must be kept at an even temperature by being placed over a lamp or small coal-oil stove. A handful of cocoons is thrown into the water, which must be nearly boiling hot, and pressed down below the surface by the use of a small whisk of broom corn, until the gum has softened a little, so as to loosen the ends of the filaments. The operator then stirs the cocoons about with the whisk until the fibers begin to adhere to it (see Fig. 7). When a sufficient number have been thus collected they should be taken off



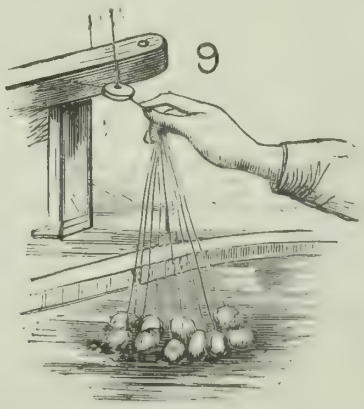
and gathered in the hands, as shown in Fig. 8. When a sufficient number have been gathered to form a thread, the ends are brought together and connected with the reel, as in Fig. 9. The number to be thus united varies according to the fineness of the thread desired. The above is not given with the expectation that anyone will be able to reel from the information here given; but only with the view of giving the reader a general idea of the manner and process of reeling. The product of the cocoons, when reeled, is known as "raw silk," and its value depends very much upon the skill and care with which the reeling is done.

The hatching and feeding season may be prolonged greatly beyond a single feeding season by hatching the worms in succession for several weeks. The second hatching may be made, say four or six days after the first, and so on through a series of six or eight, or more, hatchings. The number of hatchings must be regulated by the character of the feed, for as the leaves become old and tough, they are gradually unfitted for making good silk. Hatching may be kept up as long as new and tender leaves can be procured for feeding the young worms. By this method both space and labor may be greatly economized in the cocoonery. Where successive hatchings are adopted, the cocoons for producing eggs should be selected from

either the first or second hatching; and, in any hatching, the cocoons that are produced by the worms that come out first are much preferable to those that appear later.

The mere raising of cocoons is a very simple operation; but, in order to render it profitable, it is necessary that we should find a market, either for the eggs or cocoons, or for both. We have already, on page 4, shown that a market may be had for eggs in France and Italy; but, as that may be only temporary, it is of great importance that we should create a home market for cocoons. This can be done only by establishing, somewhere in this vicinity, a reeling factory, or filature, as it is generally called.

The operation of reeling requires both skill and capital. The former we have with us, to a limited extent, indeed, but all that is needed to furnish the necessary instruction to any number of needed employees. This skill, and the necessary capital to employ it, can undoubtedly be made available as soon as a supply of cocoons is provided to give employment to reelers. The chief efforts of the California Silk Culture Association are being extended in this direction. The Society, through its officers, has dis-



tributed thousands of circulars of information, and eggs, and mulberry cuttings, to those who are willing to undertake the production of cocoons. No attempt has been made to stimulate expensive projects; but our farmers and our farmers' wives and daughters have been urged to start the business in a small way, to gain experience and prove to their own and the satisfaction of others that cocoons and raw silk can be produced at a profit in California.

The business is already being initiated in nearly half the States of the Union, in no one of which are the conditions so favorable as in California.

Herr Liederman, a prominent Mennonite, near Newton, Kansas, according to the Chicago *Inter-Ocean*, last season made a practical experiment of silk culture on his farm He had surrounded his one thousand acres with a hedge of mulberry trees, which last year began to produce an abundance of leaves. He procured a quantity of eggs and raised about three thousand pounds of cocoons, at a cost, as reported by the *Inter-Ocean*, of only about $300. A great number of Mennonites who have been engaged in the business in Germany have already set out mulberry trees, and, within a year or two, expect to enter very largely into the business of producing silk.

(TO BE CONCLUDED.)

*The California Silk Growers' Manual, By W. B. Ewer, A. M. Published, under the direction of the California Silk Culture Association, by Dewey & Co., office of PACIFIC RURAL PRESS, San Francisco. Price, postpaid, 25 cts.

Patrons of Husbandry.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully solicited for this department.

The Contra Costa Grangers' Association.

Our readers will remember the interesting report, by Dr. Strentzel, of a meeting of the Contra Costa County Grangers' Warehousing and Business Association, which appeared in the RURAL two weeks ago. In that report mention was made of the steps taken toward reorganization. A committee, composed of Charles Wood, Nathaniel Jones, James Kelley and C. B. Porter, was appointed in conjunction with the Directors, to draft new articles of incorporation in accordance with the objects approved by the vote referred to, for report to an adjourned meeting of the stockholders, to be held on the 17th inst.

The meeting was held, pursuant to this adjournment, on Wednesday last, and the Martinez *Gazette* has a full account of it. The report of the committee was considered, and with slight modifications, the articles of incorporation adopted.

In the new articles, as adopted, the old name of the association is changed, in order of the terms, only so far as necessary for distinction of the new from the old, but the title remains in substance and terms the same. The former articles of incorporation limited the authority and agency of the association to that of factor or broker; and the new articles authorize it, for the purposes of its incorporation, to act as principal, as well as factor or broker, and to borrow and loan money, as the necessities of the business may require.

At the adjourned meeting on Wednesday several preliminary resolutions were adopted preparatory to the proposed reorganization, among which was one staying further subscriptions for stock of the old association, and providing that for each share of the paid up stock in the present association surrendered two shares of the new stock shall be issued to the owner; also, one requesting the stockholders who desire the new stock on these conditions to notify the Secretary to that effect.

The new articles of incorporation were subscribed by the appointed Directors and the meeting of the old and new associations adjourned to Monday, June 5th, for the final proceedings of surrendering the old and fully launching the new organization.

Following are the adopted articles for the new incorporation, which we give, as they may serve as a guide to others who desire to organize:

KNOW ALL MEN BY THESE PRESENTS that we, the undersigned, who are citizens of the State of California, have this day voluntarily associated ourselves together for the purpose of forming a corporation under the laws of the said State of California. And we hereby certify,

First, That the name of said corporation is the Contra Costa County Grangers' Warehousing and Business Association.

Second, That the purposes for which it is formed are, to deal as factor or principal, in all kinds of agricultural implements, products and general merchandise; to ship grain and other merchandise to and from foreign and domestic ports; to own, charter and lease vessels for foreign or domestic ports; to construct and maintain wharves and warehouses at or near Martinez, for the loading, shipping and storage of agricultural products and merchandise; to acquire and hold land for said purposes, and to borrow and loan money as the necessities of the business may require.

Third, That the place where its principal business is to be transacted shall be at Martinez, Contra Costa county, State of California.

Fourth, That the term for which it is to exist is 50 years from and after the date of its incorporation.

Fifth, That the number of its Directors shall be nine, and that the names and residences of those who are appointed to serve until their successors are elected and qualified are as follows, to wit:

John Strentzel, H. M. Hollenbeck, F. M. Warmcastle, Martinez; George P. Loucks, Alexander Boss, Pacheco; John Larkey, John W. Jones, Walnut Creek; James M. Stone, Robert O. Baldwin, Danville.

Sixth, That the amount of the capital stock of this corporation is fifty thousand ($50,000) dollars, divided into shares of the par value of twenty-five ($25) dollars each.

Seventh, That no person shall be eligible to the office of Director who is not a Patron of Husbandry.

The Debris Question.

EDITORS PRESS:—At a meeting of the San Luis Obispo Grange, No. 28, P. of H., held this day, the following resolution was unanimously adopted:

Resolved, That we, the members of the San Luis Obispo Grange, No. 28, P. of H., recognizing the entire justice of the resolutions as adopted by the Wheatland Grange, No. [illegible], as passed April 1, 1882, hereby pledge our best endeavors to assist them, in all ways possible, in obtaining relief from the ruinous effects of the present system of hydraulic mining.

R. E. JACK, Sec'y pro tem.

May 13, 1882.

WALNUT CREEK MEETING.—After all, the meeting which we have noticed for two weeks as to be at Danville, will really be at Walnut Creek. It is, however, only a change of place; the occasion will be enjoyable anywhere. The Contra Costa *Gazette* says: "An interesting and important meeting of the members of the local Granges of the Patrons of Husbandry, to be attended and addressed by Hon. D. Flint, Master of the State Grange, and other visiting members of the Order from abroad, is to be held in the forenoon of Saturday next, the 27th inst., at Walnut Creek, and will be followed by a Grange feast and open meeting in the afternoon. Members of the Order are requested to be punctually at hand for the meeting in the forenoon, and the uninitiated friends will be welcomed to the refreshment and open session proceedings which are expected to begin, in the course of events, about one o'clock.

PESCADERO GRANGE REUNION.—The Grangers' reunion on Saturday last was an occasion long to be remembered by every member of the Order in Pescadero and all the friends of farmers and equal rights to all men. Among the distinguished visitors were Daniel Flint, Worthy Master of the State Grange; J. V. Webster, Secretary of the State Grange and editor of the *California Patron*; Amos Adams, Secretary of the Grangers' Business Association. These, together with Worthy Master I. C. Steele, Master of Pescadero Grange and Past Master of the State Grange of California, proved themselves to be most excellent representatives of the farmer's interest, and eloquent exponents of the principles, aims and objects of the Grangers' organization. A meeting of Pescadero Grange was held in their hall at 10 o'clock, A. M., followed by a banquet given by the Grange to the visitors and friends, after which a public meeting was held at Union hall, addressed by Messrs. Steele, Flint, Adams, Webster and others. Much interest was manifested, and the speakers were well received and attentively listened to throughout. It surely is time that farmers should stop growling and at least learn to act in concert for their material benefit.—*Redwood Gazette, May 20.*

Agricultural Notes.

CALIFORNIA.

ALAMEDA.

UNTIMELY FROSTS.—EDITORS PRESS: The cold north wind that prevailed last week ended with a severe frost on last Friday night, doing considerable damage to fruit and vegetables in many sections of this county. Potatoes, beans, and other tender plants were cut down to the ground, presenting a blackened and discouraging aspect; but I am of the opinion that the majority of fruits are too far advanced to be injured by any frost that we are likely to have at this season of the year. I understand that it was quite severe at San Lorenzo, San Leandro, and on the low hills and valleys back of and surrounding Haywards, but my immediate locality, from some cause or another, is strangely exempt from both late and early frosts. The frost on Friday last nipped the tops of but few potato plants in exposed places, but doing no damage. Squashes, beans, melons, cucumbers and tomatoes are untouched. I may be wrong, but I have attributed our freedom from those frosts to being exactly in range of the current of wind that passes over the city, which, being warmed by the heat arising from the constant burning fires and gaslights, floats over us, and thereby lessens the effect we would otherwise have. Let that be as it may, we, in this favored locality, are remarkably free from both late and early frosts.—WM. H. JESSUP, Haywards, May 16th. [We expect the air which is heated by the city is spread pretty well all over Alameda county.—EDS. PRESS.]

BUTTE.

THE ORCHARDS.—Chico *Record*, May 20: Horticultural Commissioner W. V. Groves has just made a tour of inspection of the orchards of Butte county. He pronounces the foothill orchards in a much better condition than those of the valley, although the valley orchardists need have no fears of a failure of the fruit crop. The best orchards were found in the vicinity of Paradise. With the exception of two, which were troubled with the "woolly aphis," they were all in splendid condition, and promised a bountiful yield.

SHEEP STILL GOING EAST.—A band of 20,000 head of sheep belonging to a gentleman named Owens, who resides near Marysville, passed through Chico yesterday afternoon. The sheep are en route to Colorado. They are in fine condition, and prepared to do good traveling.

COLUSA.

CROP PROSPECTS.—*Sun*, May 20: It is exceedingly difficult to make up one's mind about what to say on the crop prospects. We find various opinions, and, of course, have to make up our mind after thorough discussion, added to personal observation. Some say the prospect has improved and some say it has grown more desperate during the last week. We may say that it has worked both ways. The winter-sown grain has been weakening, while, as a rule, the summer-fallowed has brightened. On Friday night of last week there was a slight frost, which injured some of the best grain in the county—some of the very grain we mentioned as so fine in our last was badly hurt by the frost. We understand that Mr. Balsdon, of the Mormon basin, is cutting for hay several hundred acres of wheat, the estimated yield of which, one week ago, was 60 bushels to the acre. Most of the other rank grain has been more or less injured. The cool weather of the week, as we have said, worked favorably to the summer-fallowed. After wheat has reached a certain stage it draws more from the air than from the ground, and hence the importance of cool south winds in the spring. The lower end of the county, from Berlin, on the plains, and Sycamore, on the river, *may* have one-third to one-half an average crop. The river lands from Sycamore to Princeton, on both sides of the river, may make one-third, but there is so much winter-sowing in this district, which is weakening, that it is hard to say. From Princeton to the upper end of the county, along the river, the prospect is somewhat better. Mr. Boggs will have, under favorable conditions, a fair crop, and Dr. Glenn's has made progress for the better in the last week. On the Walsh farm the prospect is good. Along up Stony creek crops have been making good headway during the week, and the wheat plant seems to be healthy. In the foothill country, in the neighborhood of O'Brien's and Nye's, there are some good crops. Then, along down the foothills all the way there is more or less good grain—that is, grain that has been showing a healthy condition after the battle with the north wind of a fortnight ago. Immediately along the line of the road, from Berlin to Germantown, there is nothing to be seen to give any encouragement. In fact, a traveler on the road would get the impression that there was an entire failure in Colusa county. Of course, we must add, that all depends on future weather. It is possible to have one-third of an average crop, and it is possible to cut it down to almost nothing. No crop is made yet.

AGRICULTURAL SOCIETY.—Sacramento *Bee*: Articles of incorporation have been filed with the Secretary of State for the Colusa County Agricultural Society. It is formed for the purpose of encouraging the cultivation of the soil and the general development of all agricultural resources of the county of Colusa; to encourage the breeding and improvement of live stock, and to foster every branch of mechanical and household arts calculated to increase the happiness of home life. Principal place of business, Colusa City. Directors—W. H. Belton, Will S. Green, William Ash, Peter Peterson, William Billups, Dillon Sherer and E. W. Jones. Capital stock, $23,650, divided into 236½ shares.

LOS ANGELES.

EDITORS PRESS:—In this part, Artesia, the crops are very short. Wheat is about a total failure, and the barley not half a crop. Only on my best corn land I am able to raise barley this year. Corn is too young yet to tell, but it looks well.—GEORGE FRAMPTON, Norfolk.

CONTRA COSTA.

CROPS.—Martinez *Gazette*, May 20: Notwithstanding the sharp frosts of last week and the early part of this, which nipped some of the garden vegetables severely, and in some instances the grapevines, the damage in our county, so far as we have been able to observe or hear, is very slight as compared with that suffered in many other sections of the State from which we have reports. The cool, breezy weather of the past 10 or 12 days has had a very favorable influence on the thrifty-growing grain, and has greatly revived that which the previous hot weather had not quite dried up. So far as we can judge from reports, the greater portion of the summer-fallow sowed grain in the eastern section of the county is promising a fair yield. Considerable of the winter-sowed grain in the Diablo and Pacheco valleys, and on the poorer hill lands elsewhere, suffered much or was quite dried out by the hot northerly spell. But, taking the upper part of the Ygnacio, the San Ramon, Sycamore, Green, Amador, Taylor and Moraga valleys, in the central and southern portions of the county together, and they have seldom, if ever, had finer crop prospects than now. The same may be said, perhaps, of the Briones, Rodeo and Pinole valleys, exclusive of the southern slopes of the high hills. Some of the San Ramon wheat equals in promise the best we have ever seen in that rich and beautiful valley, and very noticeable for stand and appearance are the fields of Mr. August Hemme, growing from expressly imported choice Australian seed. That section has a much larger proportion of barley in crop this year than we have ever before seen there, and the fields by the roadsides show thick stands of fence-high, even-growth, heavily-headed grain. So far as most of this barley may be affected it is well out of the way of any hot weather that may occur; and, with a continuance for a week or two of the recent favorable weather, most of the wheat will be put beyond danger of fatal damage from any brief term of high-tempered north wind.

HAY.—Walnut Creek *Independent*, May 17: Haying in most places in this neighborhood is now being pushed vigorously ahead, and we learn that the crop will average very well.

MENDOCINO.

HOP GROWERS' SOCIETY.—Ukiah *Press*, May 19: The hop growers of this section will meet in this city to-morrow to discuss the situation. It is proposed to devise a trade mark, by which our superior product may be protected from the impositions that are regularly practiced. With this protection and greater care in curing and packing, and perhaps a system of grading, there is no doubt our hops would rule higher. The question of labor will also be discussed. The large acreage this year will require all the labor available, and it is thought that an arrangement may be made by which labor may be handled more judiciously than heretofore. A recent tour among the hop fields of this valley gave the observer some impressions of the extent of the hop industry, the amount of capital, machinery and labor involved, and of the experience and conditions necessary for the production of the superior article familiar to the trade as Russian River hops. Within the circuit of our trip 304 acres of thrifty hop vines promise to yield the largest crop that has been harvested in this valley, so far as indications are valuable at this stage. At an average of 1,200 lbs. to the acre for old, and 600 lbs. per acre for new vines, 312,000 lbs. of merchantable hops should be secured, and many will estimate the total yield as high as 350,000 lbs.

WOOL.—The earliest shearing shows that our spring clip will be one of the very best, in both quality and condition. The fiber is long and even, and the uniform cold weather leaves it free from grease, and with but a minimum of dirt. So far the clip promises exceedingly well, but shearing has not proceeded sufficiently to tell the whole story.

NAPA.

TREATMENT OF FROSTED VINES.—S. C. Hastings, in St. Helena *Star*, May 19: I publish the following suggestions for the reason that if I am correct immediate action is necessary, namely: Prune all the frost-bitten vines, cutting off all branches of the vine which are affected by the frost. It is known that the reason why the watery humors of leaves and shoots do not freeze is because the cells containing these humors are very minute; in other words, the larger the cells the more quickly will the plants freeze. The young shoots of the vines are extremely juicy, containing a great quantity of water, and consequently but little cellulose. Freezing expands the water and bursts the cells, thus breaking up the texture and stopping the process of growth. The buds of the vines are more watery than the ligneous vines themselves. Therefore, cut off all the vines affected by the frost down till you find a non-frosted bud, even if you amputate all the branches above the surface of the ground. Roots and leaves are identical in their functions; the one draws from the ground and the other from the atmosphere. The cutting of the frosted parts stops the waste of sap and sends back this precious protoplastic fluid and produces a new and vigorous growth of shoots, new leaves and branches, and with proper culture a good crop of grapes.

IMPREGNATED WINES.—At the last meeting of the St. Helena Viticultural Society the following preamble and resolution were adopted: WHEREAS, The so-called champagnes made by impregnation are wholly or partially adulterations, and not pure wines; therefore, be it *Resolved*, That this club does, on the general principle of favoring pure wines and opposing adulterations, and especially in furtherance of its expressions heretofore on similar questions, favor the passage of the Clardy bill taxing said imitation champagnes.

SACRAMENTO.

CROPS.—Folsom *Telegraph*, May 20: As the season advances the outlook for a bountiful fruit and grain yield becomes more apparent. The vineyards, orchards and grain fields round about us never looked more promising at this season of the year than now.

SANTA CLARA.

AGRICULTURAL SOCIETY.—*Herald*, May 20: A meeting of the Board of Directors of the Santa Clara Valley Agricultural Society was held this afternoon, for the purpose of filling the vacancy caused by the death of the late President, Wm. C. Wilson, and for electing Secretary and Treasurer. J. H. M. Townsend was elected President—Wm. Farrington was elected Director to fill the vacancy caused by the promotion of Townsend. T. Ellard Beans and T. S. Montgomery were re-elected Treasurer and Secretary respectively. On motion, a committee, consisting of Cyrus Jones, N. B. Edwards and James A. Clayton were appointed to draft suitable resolutions of condolence on the part of the late President, Wm. C. Wilson. Capt. Ham, R. D. Fox, Truman Andrews and the President were appointed to serve as Ground Committee for the current year.

SAN DIEGO.

CROPS.—Anaheim *Gazette*. San Diego county will produce fair crops within its limited area. This is accounted for by the fact that considerable more rain fell in that county during the winter than in any other southern county. We learn from Mr. Adolph Rimpau, who has traveled over the county lately, that the crops in spots look very promising. As an indication of what they expect there, it may be said that the contract for furnishing the Government with hay at San Diego barracks was awarded at $15 50 a ton, straw at $14 a ton, and barley at $1.25 a cental.

SANTA CRUZ.

CROPS.—EDITORS PRESS. Pears none. Plums few. Apricots rough, but recovering from frost. Apples damaged, but yet, perhaps, one-half crop. Berries doing better; not much hurt. Prunes same as plums. Peaches gone in. New potatoes badly hurt, but some reviving a little. Frosted corn convalescent, but sick. Wheat all, or nearly all, on valley land, dead. Barley badly hurt on sandy land.—J. W. G., Watsonville.

SHASTA.

STOCK.—Redding *Independent*, May 17: We are pleased to note efforts made to improve the quality of domestic farm stock of every kind, and believe that persons who give attention to the careful breeding of animals should be liberally patronized. The country east of the Sacramento river in this county cannot be surpassed for the raising of swine, yet the breed of stock kept by many of the farmers has been allowed to deteriorate until the pattern known as "rasor-back" is too common on the plains. An exception to this style of stock raising, however, is shown by Mr. L. H. Phillips, of North Cow Creek, who has for some time been engaged in raising the best thoroughbred swine, and who now has in the market some of the finest stock to be had anywhere. His sales have been large and profitable, showing that his enterprise has been appreciated.

SISKIYOU.

STOCK GROWING.—Scott Valley *News*, May 19: Information from our stock men who have been ranging over the hills looking after their bands of horses and cattle, is to the effect that all kinds of stock are doing well and will soon be in prime order. The ranges in all sections of our county are heavily covered with green herbage, and the prospects for the stock growers of this community are flattering. It gives us pleasure to note that this branch of industry is one of Siskiyou's most noted ones. There are several large stock raisers in this county who have no other calling, and they are to-day among our most independent citizens. Stock always finds a ready sale here, either for home consumption, or by buyers from the lower country, and always demands a fair price. Enterprise in this direction will insure one competency, if not wealth.

STANISLAUS.

A GOOD FIELD.—*Farmers' Journal*, May 20: J. S. Minzy, who resides near Turlock, is said to have one of the choicest pieces of wheat in the county. He thinks his whole 1,100 acres will average at least 20 bushels to the acre. Of course he feels happy at his prospects, and well he might.

TULARE.

NEW DITCH.—*Delta*, May 17: Years have elapsed since the first effort was made to take water out of Kings river above Campbell mountain for the purpose of irrigating that large body of land lying south and east of the river and the Central Pacific railroad. The enterprise is now to be carried on by a new company, organized last week, under the name of "The '76 Land and Water Company," with the following officers: C. F. J. Kitchener, of Cross Creek, President; I. H. Jacobs, Vice-President; D. K. Zumwalt, Secretary; H. P. Merritt, Treasurer, and a board of competent directors. The company, governed by articles of incorporation drawn up at the meeting, will proceed, without unnecessary delay, to the work in hand. The company owns and controls, susceptible of irrigation, about 30,000 acres of as good land for fruit or vine culture as will be found anywhere in the valley, being free from alkali, and easily tilled. The canal, which is to be 100 ft. wide on the bottom, will furnish sufficient water, not only for the country east of the railroad track, but also for the entire Mussel Slough region that now draws water from the south side of Kings river. If all interests there could be united and take their water from the new canal, in which there is every reason to believe water would flow the year round, it would go far toward an amicable settlement of many unfortunate difficulties in Mussel Slough. We understand the canal will intersect the Central Pacific railroad at a point between Cross Creek station and Kings river. Inducements will probably be offered for the establishment of one or more colonies, as the location is admirable for such enterprises.

TEHAMA.

NEW SICKLE BAR AND SECTIONS.—Red Bluff *Cause*, May 17th: Harry P. Dodson, a young farmer residing on the Redding grant, was in town for a few days past, exhibiting a model of an improved sickle-bar and sections. This invention he has recently perfected, and it will be applied to a Buckeye mower as soon as a bar and sections can be made, in order to test its value as an improvement on the old bars and sections. The improvement consists of sections dovetailed into the sickle-bar and retained in their places by this device and also by means of a set-screw passing through each section and partly into the sickle-bar. The set-screw is made with a square head, beveled corners, so that they can be removed with a monkey-wrench. Broken sections can be taken out by removing these screws, and replaced with new ones in two minutes' time. The sections can also be taken off the sickle when it is necessary to grind them, without removing the sickle-bar from the machine. The improvement can be applied to reapers and headers as readily as to mowers.

AN OAK.—*Tocsin:* An oak tree was cut down on James Shelton's ranch, near Newville, Colusa county, that measured seven feet and four inches through at the stump. There were cut and split 400 posts seven and one-half feet long, and 75 cords (two tiers to the cord) of 20-inch wood out of it. One man worked 42 days continuously and two men 10 days. The posts are worth 20 cents apiece, and the wood $3 per cord. It therefore paid $230.

VENTURA.

CROPS.—Dispatch from San Buenaventura, May 22: Astonishing changes for the better in the wheat and barley crops have occurred within the past 10 days. Heavy, dripping fogs at night, and cool, cloudy days have saved thousands of acres which were drying out and will now yield half a crop. Other localities, where partial failure seemed inevitable, will now have a good yield. The corn and beans also look very promising.

YUBA.

THE OUTLOOK.—Careful inquiry from the best informed sources gives assurance that the crops in Yuba and Sutter are not damaged more than 10% by the north wind last week. Some think the damage is less, and others are inclined to put it slightly higher. George Ohleyer, President of the Farmers' Union of Sutter County, believes that the damage in Sutter is, on an average, less than 10%. He said to-day that the prospect is that Sutter this season will produce as great a number of bushels of wheat as in the great crop of 1880, but the yield per acre will be less. The acreage in grain this year in Sutter is larger than ever before. A cool south wind is blowing to-day, and this is the best kind of weather for crops.

News in Brief.

MOSES TAYLOR, a prominent New York merchant, is dead.

GUITEAU has been finally denied a new trial. He is not despondent, however.

THE Atchison, Topeka & Santa Fe Co. has secured control of the Louisville and St. Louis air line.

THE *Astorian* says there is gold in the sands of Gray's harbor, and that a company has been formed to work it.

THE weather in Washington Territory continues very favorable for good crops. The yield will be 30% more than ever before.

CRANBERRY culture is receiving considerable attention and meeting with good success in Washington Territory, on Puget sound.

THE $900,000 left by Lewis, a resident of New York, to help extinguish the public debt, has been turned over to the Government.

IT is the fashion in Milan to grow fruits instead of flowers for house plants. Some elegant parlors are almost converted into little orchards.

IT has been an intensely cold spring in Austria and the Tyrol, and 30% to 50% loss is feared in the Austrian and Hungarian wine districts.

IN Tombstone, Arizona, is a Chinese washman who has issued cards on which is printed: "Patronize home industry. The American laundry. Un Wo, proprietor."

THE miners who went from Virginia City to work in the Santa Maria mines, in Mexico, contradict the report that they are dissatisfied with their new places. None of them receive less than $3 per day, and some as high as $7.

ARRANGEMENTS have been completed by F. and G. companies of the Second Regiment, together with the Oakland Light Cavalry, to go into a six-day encampment at Santa Cruz. It has been decided to name the camp after the popular brigade commander, General Dimond, and the time of the encampment will continue from June 30th to July 5th inclusive, or thereabouts.

SMOKE AND FROST.—This year's experience of the vine growers' seems to fix the value of smoke as a frost preventive. A correspondent of the St. Helena *Star* says: Grœzinger estimates his loss at 8% to 10%. This small loss (considering that the frost was severe) is due, to a great extent, to the thorough and systematic smoking done on that vast estate. Had others above done likewise, thousands of dollars worth of grapes might have been saved, at a comparatively small cost. The *Star* further comments upon the subject as follows: For several mornings this section of the valley was completely smudged, although there were a few skeptics who did not smoke, whose short cropst this fall will convince them that the judicious use of tar and straw is their only salvation. That smoke does actually protect the vines against frost was demonstrated during its recent visitation, when, on one occasion, the temperature fell to 28°, and those who smoked thoroughly suffered but slightly. In case of extreme cold, the practicability of building bonfires to raise the temperature has been suggested, and the idea seems a good one.

APRICOT PRICES.—The canners are reported to have already contracted for a good many apricots in Vacaville district, and to be on the march after the fruit of other sections. We do not hear the contract prices. At Riverside there has been something of an issue between the apricot growers and the citizens who propose to start a cannery. The cannery managers wished the fruit at the prices paid by the San Francisco canners, as their products compete with each other. We hope a satisfactory arrangement will be made between the parties. The Riverside *Press* says: "Dr. Jarvis, of Arlington, last year dried his crop and we understand the fruit netted him three cents a pound green. We also hear that Judson & Brown, of Lugonia, are offering three cents a pound for apricots to-day. Of course if the price of apricots in this county ranges higher than in San Francisco, our cannery must pay this advanced price or go without the fruit."

Grain Cleaner.

Among the several grain cleaners brought to the notice of Threshermen this season, T. S. Bayley has completed and patented one which presents several points of superiority over all others. For cheapness, simplicity, easy draft, lightness, durability, capacity and convenience, it excells. The sieves are so arranged that the wheat screens can be taken out and barley run through from the thresher, thereby cleaning it more thoroughly. Prices, with header trucks, $350; with shop trucks, $325; without trucks, $275. For circulars and further particulars, address, T. S. Bayley, San Leandro, Cal.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

Fruit Tree Growing.

EDITORS PRESS:—Mr. Mack Davis, of Saratoga, has on his fine home place, near the Los Gatos road, quite a large plantation of nursery trees for the next winter's trade. He is making a specialty of two sorts only—now mostly in demand in this part of the State—the apricot and the prune. I think he informed me they were all grown on almond roots, which he prefers to all other stock. At any rate, the young trees look thrifty and fine, making a splendid growth under thorough cultivation without irrigation. Mr. D. assured me that his trees were perfectly healthy and free from any of the dreaded insect pests so common in many localities. It might be well for those wishing to secure trees for the next season's planting, grown in our fine foothill climate, far away from insect pests, to make a note of this and look out for Mr. Davis' advertisement in the RURAL in a few weeks.—G. W. M.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

Hay Rakes.

The celebrated hay rakes manufactured by John Dodds, Dayton, Ohio, can be found in large stock at the San Francisco branch, 37 Market St. The old reliable Hollingsworth Rake has taken three Gold Medals at International Fairs. The Red Bird is cheap, simple and a great favorite. The new Reindeer is the strongest and most durable Self-Dump Rake on the market. The iron axle and wheels, rocker-frame movement, adjustable teeth, dumping device and other improvements make them the most desirable Rakes manufactured. See the agent, S. Gould, before purchasing, 37 Market St., S. F.

Volunteer Testimonials from Those Who Have Used Booth's Exterminator.

PASO ROBLES, CAL., Jan. 15, 1880.

A. R. BOOTH—*Dear Sir:* Have tried one can of your Squirrel Poison, and find it very efficacious in destroying squirrels. Should like two cans more.

G. W. BREWSTER.

CAMBRIA, CAL., August 5, 1879.

A. R. BOOTH—*Dear Sir:* The case of your Squirrel Poison you sent us is good, and has given entire satisfaction. Our customers prefer it to any other. Will order more soon as this is sold. GRANT, LULL & CO.

NEW GIG OR SULKY.—Something novel and very elegant in the way of a Sulky, may be seen across the way from our office, at the store of Geo. A. Davis, the well-known Agricultural Hardware man. It must be seen to be appreciated. A cut of it will appear in our columns soon. Photographs sent on application to Geo. A. Davis, S. F., or Jacob Price, San Leandro, who is the inventor of it.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.

ANNUAL STATISTICIAN OF 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 502 Taylor St. Price, $4.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, May 24, 1882.

There has been considerable activity in grain, both speculative and in actual transfers. Prices have not changed materially, but a firmer tone on the part of holders is noticeable. The latest from abroad is the following:

LIVERPOOL, May 23.—Wheat: California spot lots are quiet, at 9s 10d@10s 2d. Cargo lots are 47s for just shipped, 49s 6d for nearly due and off coast.

The Foreign Review.

LONDON, May 22. The *Mark Lane Express*, in its review of the British Grain trade for the past week, says: Vegetation has made very little progress and the spring crops want rain. The trade in native Wheat is dull and languid. Flour is weaker, but other articles are not changed. Foreign Breadstuffs are difficult of sale. Flour is easier than for weeks. The supplies at London are very small. Oats, quiet but steady. Wheat cargoes are very quiet; California, about 6d and lower. Fifteen fresh arrivals are reported, and six sales, and four are withdrawn, leaving nine, including three California. The sales of English Wheat during the week were 41,261 quarters, at 47s per quarter, against 28 402 quarters, at 44s 2d per quarter, for the corresponding week of last year.

London Wool Market.

LONDON, May 22.—At the Wool sales to-day 10,000 bales were disposed of, comprising New South Wales, Queensland and Victoria. There was a good demand and prices were firm.

LONDON, May 23:—At the Wool sales to-day 96,000 bales were disposed of, comprising New Zealand and Port Phillip. Competition was spirited, prices firm.

Eastern Wool Markets.

BOSTON, May 20.—The wool market is comparatively quiet this week. Sales of all kinds amount to 17,000 lbs. Prices are unchanged. Lots of fleece Wool are scarce, particularly X grade. Sales of Ohio and Pennsylvania have been made at 40@41c for X and XX, and fair quotations of sales are 42@44c for these grades, although some lots of choice XX are not offering under 45c. Some Michigan, New York and Vermont fleeces have been sold at 39@41c. Michigan is scarce, and would bring 42c. A lot of 7,000 lbs. new California spring has been sold at 28c, the latter price for choice northern. Receipts have been very light. Unwashed fleeces have been in fair demand at 25@33c for fine and medium, 16@18c for low. Combing and delaine selections are selling at 44@48c for fine delaine and No. 1 combing. In washed combing very little has been done and prices of Kentucky are nominal Pulled Wools are in steady demand at 45@48c for choice Eastern and Maine supers, and 37@42½c for fair and good. Extra pulled have been selling freely for 40@45c. Advices from all points quote higher prices for new Wool, and dealers inclined to hold back for the present. Australian has been selling at 42@45c, and Cape and Montevideo at full price.

NEW YORK, May 20.—Wool is about steady, under limited demand. Sales of California include 100 bales of old: Spring, 2,660 bales, and 10,000 lbs. of Fall at 15c; 23,000 lbs. Fall, private. At Boston the Wool market is very quiet, with sales of 82,700 lbs. California Spring at 27@33c; 57,800 lbs. Fall at 13½@22c.

BOSTON, May 23:—The market for Wool remains quite steady. The high prices asked for new Wool make holders less anxious to dispose of old stocks, and X and XX fleeces are now firm. Ohio and Pennsylvania are quoted at 42@44c for X and XX, and 45c for choice selections of Michigan and Wisconsin X fleeces at 39@42c, as to the condition. Combing and delaine selections are steady at 44@48c for fine delaine and fine and No. 1 combing. Unwashed combing continues dull and nominal. Unwashed fleeces are in fair demand at 25@30c for fine and medium. Good medium selections at 32@34c. California is quiet, but when the new clip begins to arrive more freely a more active movement is looked for. Pulled Wools are in fair demand. Sales of choice Eastern and Maine sunersare noted at 45@48c; common and good supers at 30@42½c. In foreign Wool there has been no change, but there have been further sales of Australian and Montevideo at steady prices.

Eastern Grain and Provision Markets.

NEW YORK, May 20.—Wheat is moderately active; nothing in cable advices, public or private, is calculated to energize the export demand. Barley is quiet. Lard is higher, in sympathy with the speculative movement, and Pork is steady.

CHICAGO, May 20.—There have been no remarkable developments, prices maintain an even pace for grain, while provisions are stronger and tend to advance. Wheat today was steady and firm, with prices averaging higher under favorable advices from Liverpool and New York. Receipts were almost nothing, but shipments were good. The demand is wholly speculative; offered ⅜@⅝ higher; advanced ⅜@½, then it fluctuated within the range of 8⅛c, and finally it closed 1¾ higher for June, and ½ higher for July than yesterday. Sales, 1,25½@1 26½ for June, 1.25½@1.26½ for July, 1.14½ for August. On Call, sales were 1,630,000 bushels, prices running from ½ lower to ¾ higher. The earlier sales were the strongest, the later ones the lowest. June showed the greatest advance. Corn was moderately active on shipping and speculative account and ruled steady with a firm feeling at the close, and an advance for the day of ½@⅝. Receipts were dull and shipments insignificant. There is a good deal of pressure toward a higher price than has yet been reached. Sales 75½@73 for June, 73½@73½ for July and August. On Call sales were 75,000 and prices ranged ⅜ lower to ½ higher, and were very irregular. Oats were dull and easier all round. There was a falling off of ½ in May and cash, ⅜ in June, and an easier feeling in July and August. Sales 50⅝@51¾ for June, 45½@45¾ for July, 37½@37⅞ for August. Sales 85,000 and prices higher, May advancing a full cent under short inquiry. Pork was moderately active and strong, with prices 15@20 higher, and the improvement well supported. Foreign advices helped the boom, and all articles of provisions went with Pork. Sales at $19.10@$19.27½ for June, $19.35@19.53 for July, $19.57½@$19.70 for August.

Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive according to the latest advices:

In port.	1882.	1881.
Engaged, tons	45,400	36,400
Disengaged, tons	26,000	7,900
To arrive, tons	259,600	287,000
Total	331,000	331,300
Decrease for 1882		300

Grain freights are dull and weak. No business was reported, and there will probably be very little disposition on the part of ship owners to press matters at present rates. The charter of the *Ocean King* at 47s 6d was certainly not very encouraging to the owners.

The Trade Outlook.

WASHINGTON, May 20.—Business statistics, gathered from all parts of the country, show a rather unsatisfactory condition of trade, probably caused in part by the backward spring.

BAGS—Bags are about the same. On 'Change 8½c was offered for standard grain and refused.

BARLEY—Barley is a shade higher and strong. Bids and offers were: No. 1 brewing, July, $1.42½ bid, $1.47½ asked; No. 2 brewing, September, $1.30 bid, $1 40 asked; No. 1 feed, spot, $1.70 bid, $1.74 asked; May, buyers' option, $1.71½ bid, $1.73¾ asked; October, $1.30 bid, $1.32 asked; November, $1.30 bid, $1.31 asked; No. 2 feed, July, $1 18 bid, $1.24 asked; September, $1.20 bid; November $1.20 bid; No. 3 Chevalier, October, $1.25 asked. Sales on the Grain Exchange of (tons) 400 No. 1 feed, September, $1.27½; 50 October, $1.30; 100 December, $1.27½; 300 No. 1 brewing, spot, $1.86.

BEANS—Beans are unchanged.

CORN—Corn is quiet and nothing doing.

DAIRY PRODUCE—Butter still gains, scoring about 1c higher this week. Cheese is on the other track and loses a fraction.

EGGS—Eggs are a point lower and the supply large.

FEED—The Produce Exchange is still on a Bran mash—in fact Bran seems to be about as strong a speculative diet as they can stand. Prices are about the same, sales being (tons) 100, October, $14.25; 600, seller 1882, $13 25, and 100, December, $14.50. Bids and offers were: Spot, $15.25 bid, $15.75 asked; June, $16 bid, $17 asked; July, $16 asked; buyer July, $13 50 bid; August, $15 asked.

FRESH MEAT—A lower schedule has been adopted, the decline being about 4c ⅌ lb. on Beef and Mutton and 1c on Lamb.

FRUIT—The first Apricots came from G. W. Thissell and Brinck Bros., of Winters, and sold at 25c ⅌ lb. Cur came in yesterday. Strawberries are now plenty. Cherries are also declining.

HOPS—Sales are clearing up the old stock at former rates.

OATS—Oats are in one or two hands, and the trade is shady Rates are believed to be about as we quote.

ONIONS—New Onions are now better and lead the sales.

POTATOES—New Potatoes have improved a little, as have the Olds from Oregon. New Early Rose have sold up to $2.60 per ctl.

PROVISIONS—Bacon is firm and advancing. The Cured Meat trade generally is expectant of advance.

POULTRY AND GAME—Turkeys are now in ample supply and rates have receded.

VEGETABLES—The canners are still sweeping the floors on Peas. We hear of a contract to supply 2,000 sks Sweet Peas in two months. Green stuff generally is now coming in large quantities and rates are falling.

WHEAT—The feeling is strong. On the Produce Exchange bids and offers were as follows: Extra choice, May, Port Costa, $1.70 bid, $1.72½ asked; September, $1.67½ bid; October, $1.70 bid; No. 1 White, spot, $1 67½

(CONTINUED ON PAGE 424.)

The Three Little Chairs.

They sat alone by the bright wood-fire,
The gray-haired dame and the aged sire,
Dreaming of days gone by;
The tear-drops fell on each wrinkled cheek,
They both had thoughts they could not speak,
And each heart uttered a sigh.

For their sad and tearful eyes descried
Three little chairs placed side by side
Against the sitting-room wall;
Old-fashioned enough, as there they stood,
Their seats of flag and their frames of wood,
With their backs so straight and tall.

Then the sire shook his silvery head,
And, with trembling voice, he gently said,
"Mother, those empty chairs!
They bring us such sad thoughts to-night
We'll put them forever out of sight
In the small, dark room up-stairs."

But she answered, "Father, no, not yet;
For I look at them and I forget
That the children are away;
The boys come back, and our Mary, too,
With her apron on of checkered blue,
And sit there every day.

"Johnny still whittles a ship's tall masts,
And Willie his leaden bullets casts,
While Mary her patchwork sews;
At evening the three childish prayers
Go up to God from these little chairs
So softly that no one knows.

"Johnny comes back from the billow deep;
Willie wakes from the battle-field sleep
To say 'good night' to me;
Mary's a wife and mother no more,
But a tired child whose play-time's o'er,
And comes to rest at my knee.

"So let them stand there, though empty now,
And every time when alone we bow
At the Father's throne to pray,
We'll ask to meet the children above
In our Savior's home of rest and love,
Where no child goeth away."

Widow Appledore's Romance.

"A man that thinks of nothing but pep'mint oil an' price of wheat! No! Emma Jane; my life has been humdrum enough without my ending it with Deacon Bliss. I shan't have him!"

"Well, well, Rosetta, if you won't I don't know's anybody's goin'ter try an' make you," chirped plump, rosy Mrs. Phlox, looking up from the stout blue woolen sock she was knitting. "I s'pose the deacon thought he'd a right to ask you, seein' it's a free country. Caleb Appledore was an awful nice man, but so's the deacon. Lone wimmen are put on. Job Whittamore neglects your garding, an' just see what work you have with your fires winters an' keepin' roads broke out."

"I'm not going to marry just to have some one tend the garden and do the chores," said Mrs. Appledore. "I've never found fault with them that's dead and gone; but I know what it is to live with a person who does not care two pins for the things I do, and if I ever do marry again it will be some one who can sympathize with me. I can't say I swallow all 'Lias Bradshaw says about the marryin' of souls and affinities, but there's some truth in it, you may depend. Besides, I'd like a little romance in my life before I die."

"Romance is all well 'nuff," said Mrs. Phlox; "but you're 39 next March, Rosetta, an' sech a man as Deacon Bliss don't grow on every bush. Bein' a good provider, an' a splendid farmer, an' a deacon, an' a pillar in the church may not be romantic, but they're good recommendations in a man you're thinkin' of marryin'. I hope you'll think twice."

"I have thought, and I shan't marry the deacon," said Mrs. Appledore, decisively; "an' if that's being romantic, I'm not ashamed of it."

The little widow did not look romantic. Her complexion was a dull white, and her hair was a dull brown. Dull, too, were her large gray eyes that blinked behind short-sighted glasses, but her form, though meager and devoid of curve, was not without grace, and she had a clear, sweet, soprano voice, which, though it was untrained, she could use with taste and feeling. The Harmonicum, the Dixville musical association, made her the head of all their committees, and relied upon her to sing all the solos. Indeed, without her it could not have existed. The wheezy melodeon, which was a dozen years old before it became the property of the society, had at last collapsed under the energetic fingers of Prof. Jackson Jones, who did the accompanying, and they were trying to buy a piano. They had given concerts and had oyster suppers till Dixville was tired, when Dr. Ollapod suggested a lecture. It was whispered that the Doctor had expected the committee to invite him to read one of his papers on the Semitic tongues; but if he did he was disappointed. They corresponded with many popular lecturers, who all declined to visit Dixville, on the plea of engagements, and the committee at last invited a certain Prof. St. Clair Smith, about whom they knew nothing save that he had lectured in the neighboring villages with acceptance, to address them. The Professor had suddenly appeared in Dixville mounted on a fine gray horse. The next day he was seen to enter the post office with a green bag on his arm, and the gossips immediately reported that he was wealthy and had come from Boston. He at once accepted the invitation of the Harmonicum committee, and announced that his lecture would be on the "Philosophy of Art." The meeting-house was hired, and Mrs. Appledore, with a select few, began practicing some music for the occasion.

It was the afternoon before the lecture, and Mrs. Appledore had invited her sister to spend the day with her. Domestic duties seemed to be just what Mrs. Phlox was made for. Her husband and sister usually did all her thinking. In return she served them with her hands; but the few notions that did creep into her round head she clung to pertinaciously.

"The worst kind of a fool is a beetle-headed one," she said, after a long pause; "an' puttin' this and that together, Rosetta, I think you're preparin' with your romancin' to be just that kind of a one."

"I don't see how sisters can be so unlike," and Mrs. Appledore drummed a harsh accompaniment to her words on the middle C of her piano. "To be sure, you are the oldest; but age need not make one's soul a clod."

"It would be well for you to remember that all the advantages are not on your side," cried Mrs. Phlox, rising with dignity. "There are bodies, yes, and dispositions, that are clods," and Mrs. Phlox jerked on her calash and went home.

The meeting house was full, and the next day the Dixville *Times* declared the lecture to have been a most soulful and eloquent dissertation, but Mrs. Appledore's attention wandered, and she only knew that the entertainment was about to be concluded by Dr. Ollapod's sonorous call for "moosic."

"I am delighted," said Prof. St. Clair Smith, bowing low before her, as soon as possible after the "moosic." "I never heard such a delicious voice."

Mrs. Appledore coughed behind her hand to conceal her flattered embarrassment, and turned a questioning look on Prof. Jackson Jones, who stood near.

"You always sing splendid," said that gentleman, drawing himself up. "I dare say I put you out. That flute obligator is a deuced hard thing to do. I didn't do myself justice tonight."

"You've always dragged," said Karl Leopold, who took every opportunity to criticise the Harmonicum doings.

Prof. Jackson Jones pulled at his cravat, and Mrs. Appledore's face was full of resentment.

"I never heard anything finer in Boston," said Prof. St. Clair Smith, coming to the rescue, "and I suppose you know what that implies."

The night after the lecture was a very stormy one, and Mrs. Appledore was slowly twisting her hair in crimping-pins, when the door-bell rang. "I could not endure the loneliness of the hotel, dear Mrs. Appledore," said Prof. St. Clair Smith, making a courtly bow, "and have come to beg for just one song."

The Professor was so far as outline and coloring go a handsome man. His head was what is commonly called dome-shaped. His wavy hair and silky beard were a bright yellow red, and his rather large eyes were blue. He sat down in the big rocking-chair, and taking a twin on each knee, "I renew my youth in children," he cried, giving them a squeeze. "Do you know the song, 'The old times were the best times, when you and I were young?'"

"Oh, yes," said the widow, nervously turning over her music, "but I can't say that I feel so very old."

"Dear me, what a blunderer I am," cried the Professor. "I was thinking of my boyhood. I've always hated being grown up. A man has so much to fetter his imagination. You must have lost your husband in the first flush of your youth?"

"I did," murmured the widow, forgetting that she was 35 when the event occurred.

"The twins were babes."

Song succeeded song till the Professor proposed duets, and Mrs. Appledore enjoyed the music so much that it was midnight before she knew it.

Two months passed away. The Professor came almost every evening. He had hired a small house a little out of town, that he might be undisturbed, he explained, and a relative had come to keep house for him. He did not know how long he should remain in Dixville. He was preparing a book for publication, and writing several lectures. When his literary labors were over he was going to take a trip somewhere and rest, though friends of his, influential in Washington, were anxious for him to accept a consulship at an important point.

The widow's neat white cottage stood by itself on the confines of the village. Deacon Bliss' fields of dark green peppermint and nodding wheat, stretching along the country road for nearly a mile, joined the garden. Before her abrupt refusal of him, the Deacon had been accustomed to drop in for a little visit or to bring a neighborly offering of apples or fresh vegetables. But these calls had ceased, and, cut off from all her sources of news and pleasure, Mrs. Appledore stayed closely at home, practiced her music, and entertained the Professor.

But one sunshiny afternoon Mrs. Phlox came bustling up the prim graveled walk.

"Rosetta Appledore," she chirped, like an angry bluejay, as she opened the door, "though a clod, which there are folks that think different, I've come to ask you if you know you're the town talk."

"The town talk?" echoed her astonished sister.

"Yes, the town talk," repeated Mrs. Phlox, with wonderful emphasis. "Anybody would be who had spent two blessed months philanderin' with a married man."

"Who is married?"

"Your Prof. Smith."

"I don't believe it."

"I s'posed you wouldn't, but I've seen his wife," said Mrs. Phlox with evident satisfaction. "Miss Merrills, she 'twas Pearly Ann Trusdale, wouldn't miss a findin' out anything, if she had to walk 10 miles, an' she called on *her*, an' told me. That night I sez to John, 'John,' sez I, 'a sister's a sister, 'specially if she's younger an' a widder, an' if I be a clod I'm goin' to the bottom of this;' 'an' sez he, 'Emma Jane, I think you'd better,' an' the first thing he did the next mornin' was to hitch up an' take me over on the mile-strip where that fellow lives, in Tony Allerton's cottage. He wan't in, but she was, an' she was washin'.'

"'I'm Miss Phlox,' sez I, 'an' I come to call.' 'Thank you,' sez she, 'I'm Miss Smith,' an' she set out the only chair there was in the room for me, an' set down herself on the wash-bench.

"'Air you Miss St. Clair Smith, the wife of the Professor,' sez I.

"A sort of smile twinkled over her mouth, an' she sez, 'Yes, Miss St. Clair Smith, though I didn't know Mr. Smith had adopted the St. Clair name. That's my family name.' An' then she went on an' spoke of her husband, an' of how ambitious he is, an' how he feels his spear in public life, an' how she is willin' to do anything to help him. An' then she inquired if I thought she could get sewin' in Dixville when she feels a little better an' is able to do it.'"

Tears of shame and anger gathered in Mrs. Appledore's eyes as her sister spoke. "Is Mrs. Smith good looking? Is she an interesting woman?" she asked.

"I can't say how interesting she is. She seemed kind of trod on, so to speak. As for looks, she ain't any prettier'n you'd be if you worked hard an' did'nt have half enough to eat," said Mrs. Phlox, calmly.

Mrs. Appledore sobbed aloud. "What do people say about me? What shall I do?" she cried.

"They don't say nothin' yet, on'y that you're dreadful foolish," chirped her sister, rising and putting on her calash, for it was almost supper time. "I can't say as I know of anything for you to do except to tell Mr. Smith to stay t'home. 'Taint likely that Deacon Bliss will give you a chance to say yes a second time."

There had been a good deal of pleasurable excitement in receiving the visits of the professor. To dress herself in her best mourning and to sing her favorite songs to an appreciative listener, had been something to look forward to during the humdrum work of the day. The thought, however, of what her acquaintances were saying about her embittered her life, and when the professor again called one glance at her face told him that she knew all.

"Dear Mrs. Appledore," he began, but she checked him.

"You had better go home to your wife, Mr. Smith," she said coldly.

Tears, real tears, came into the professor's big blue eyes. "But I love you," he cried, "and she has always been an incubus upon my soul."

"But she's your wife," persisted Mrs. Appledore.

"I know it," moaned the professor, rubbing his brow distractedly. "It eats out my vitals when I think of it. She don't feel as I feel. There's no wings for me as long as I am tied to her. We've no affinity."

Mrs. Appledore gazed at him in dull wonder. These were almost the words she had used to her sister, but they did not sound pleasantly now.

"I love you, Rosetta," went on the little man, approaching her, "and I want to ask you just one question: Were I a single man, would you marry me?"

"I might," admitted the widow, smoothing down a fold in her overskirt with a trembling hand.

"Enough!" and the Professor flung his arms about her and pressed a rapturous kiss upon her forehead. "Bless you, my darling!" and before she could answer him he was gone.

The next evening when Mrs. Appledore was taking down her washing from the line she was suddenly clasped from behind by a pair of strong arms. "You will soon be mine," said the voice of the Professor. "I've offered my wife $50 to leave me and she has accepted."

"Accepted!" the widow cried, wrenching herself free.

"Yes, and as soon as I can sell my book she shall go. I've lived in soul isolation long enough. My heart has found its mate."

All the men that Mrs. Appledore knew were quaint of speech and somewhat rustic in manner, but what they considered duty controlled their lives. "You wretch!" she cried, throwing the clothes-pin basket at him. "Fifty dollars! You ain't worth 50 cents! Go home, and never dare to speak to me again!"

"Hear me!" he pleaded, catching hold of her gown.

"I can't stay out here and listen to philanderin' talk," she answered resolutely, and twitching her dress from his grasp she entered the house. But the Professor's hand was upon the latch. Like most little women, the widow was a curious mixture of timidity and courage. She flung the door open. "Don't you dare to come in!" she cried. "I'll throw hot water on you! I'll—I'll kill you!" Then slamming the door in his face she bolted it securely.

All the evening the Professor paced up and down Mrs. Appledore's back veranda. The next evening he again appeared, and the next; and the widow, thoroughly alarmed, sent the bravest twin out the front way with a note to her brother-in-law.

Mr. Phlox delighted in anything that could be called proceedings, and in a few minutes he had the deputy sheriff and two constables, and went marching down the principal street with them, to the great delight of all the small boys of the village. It was impossible for the Professor to escape. The officers crept round the house noiselessly. The sheriff collared him, the constables pinioned his arms, Mr. Phlox grabbed him by the coat-tails, and away he was walked to the village lock-up.

Mrs. Appledore passed a sleepless night; she imagined the whole town was wide awake and discussing her; and long before daybreak she had resolved to sell her home and Dixville bank stock and move West. "I've got my comeupance," she groaned. "I've always been romantic, and wanted a romance such as I've read about, an' I've had one. Oh, dear! oh, dear!"

About 8 o'clock in the morning there came a lively rap at the kitchen door, and unstrung by excitement and loss of sleep, she shrieked aloud.

"On'y me; on'y Deacon Bliss," cried a pleasant voice through the keyhole.

Mrs. Appledore slid back the bolt with trembling fingers. "How thankful I am," she said, holding out her hand, "I feel so much in need of somebody."

"Twas fortinet I came along jes' as I did then," said the deacon, taking off his straw hat and slowly rubbing his face with his ample bandana. It was a shrewd though benevolent face, framed in waves of iron-gray hair. "I see ye look kinder peeked. The weather has been tryin'. I've felt it myself, an' ached in my jints the wust way."

"It's my soul, deacon," wailed the widow, dropping into a chair and covering her face with her apron. "I've always hankered after a romance, an' I've had one, and I wish I was dead and laid beside Caleb."

"Oh, no ye don't, Miss Appledore," said the deacon in the caressing tone in which he would address a sobbing child. "This world's a pooty good place, an' with a few exceptions, folks are pooty good. I come over to fetch a few of my sweetins', and to tell you thet that there offer I made ye a spell ago holds good yet. I really wish ye'd consider it agin."

Mrs. Appledore remained silent behind her apron.

"Ef ye'd hev me," repeated the deacon in a low voice. "I know I ain't half good 'nuff and thet I'm kind uv an old fellow, but I've got a comf'able place an' comf'able things in it, and I've been sot on ye this long spell, as ye knows. I dare say I was 'tached to Lucy more'n I shall ever be to anybody agin. We sort uv growed together like, but so did you and Caleb, an' I'm sure I'll try ter make ye happy, and yer two little gals, as sweet as two pinks, 'll be to me jes' like the little gals I lost."

Mrs. Appledore did not remove her apron, and after a pause the Deacon falteringly continued: "I s'pose 'taint no use to argy. Folks hez their own idees of such things; but anyways I'll stand yer friend."

The widow rubbed her eyes and slowly let fall her apron. "I've always had the greatest esteem for you," she said, with a little shake in her voice, "but I never knew how good—how much I think of you. I will—I——"

The Deacon started up, "Will ye?"

Mrs. Appledore had taken refuge in her apron.

"Will ye really, Rosetta?" he repeated.

The bowed head covered in the blue gingham nodded.

"Ye shan't regret it," said the Deacon, solemnly and awkwardly laying his big hand, coarsened by labor, on her shoulder. "Lord bless the little woman—an' our home. Our home," he spoke softly as if to himself.

"P'raps now," he continued after a minute, "I'd better drop in an' see him, an' in tellin' the news I might mention, casual like, we're goin' ter be married soon. An' thet nobody'll trouble anybody that stays t'hum, an' that I'm able to help an eddicated man to a good place, real neighborly, 'cause my brother Eben out in Kansas wants a clerk."

Mrs. Appledore said nothing, but the Deacon seemed satisfied with her silence, for he did just as he had proposed. Prof. St. Clair Smith was discharged from jail, and in three days he and his pale little wife had left Tony Allerton's cottage on the mile strip to return no more.

In about a fortnight Dr. Ollapod attended a quiet wedding. "You've had a romance at last, Rosetta. I might better say two of 'em," whispered Mrs. Phlox, as she gave the bride a sisterly kiss. "The adoration of the Professor was like things in a novel book, but marryin' a man whose goodness an' farm can't be paralleled in the county is a romance that has sense in it, an' I wish you joy."—*Elizabeth Cumings, in Our Continent.*

NATURE has given us two ears and but one tongue, in order that we may repeat but one-half of what we hear.

Chaff.

A DISAPPOINTED young man says he wishes he was a rumor, because a rumor soon gains currency, which he has never been able to do.

LATEST from lily and sunflower circles: Embroidered mustard plasters are now recognized as a necessary feature of esthetic medication.

ONE of the boys tells of a scarecrow made by Uncle Ben. It not only scared off every crow that saw it, but one crow was so frightened that he brought back the corn he had stolen three days before.

THE man who goes fishing and sits in a cramp-inviting position on a narrow thwart from early morn to dewy eve, and calls it "fine," is the same man who never goes to church because the pews are not comfortable.

A TRAMP who wanted a meal said he was "not afraid of work." A dinner was provided for him, after which he was given a job to do. To show that he was "not afraid of work," he laid down beside it and went to sleep.

"How profoundly still and beautiful is the night," she whispered, resting her finely veined temple against his coat collar, and fixing her dreamy eyes on the far-off Pleiades, "how soothing, how restful!" "Yes," he replied, toying with the golden aureola of her hair, "and what a night to shoot cats."

A YOUNG man who thought he had won the heart and now asked the hand in marriage of a certain young widow, was asked by her: "What is the difference between myself and Mr. Baxley's Durham cow?" He naturally replied: "Well, I don't know." "Then," said the widow, "you had better marry the cow."

What Women Can Do.

The Rev. James M. Pullman, D. D., of New York, in a lecture to young women on "What Women can do in the Nineteenth Century," said: Once it was held that "woman's strength is in her weakness"—an abominable lie, a tyrant's lie. Now it is perceived that the qualities called respectively manly and womanly are interchangeable, and are both essential to either perfect manhood or perfect womanhood. "Strength and honor are as vital to woman as to man, and the disposition to give her a fair field and an equal advantage with man in the great struggle of life is among the most significant and hopeful signs of the times, and justifies the statement that in this enlightened age woman has her destiny practically in her own hands.

Woman's worst enemy is a false sentimentalism, drawn from tradition and literature, and fostered by that most despicable of all beings, the woman flatterer. Aimlessness and frivolity, vanity and folly are thus produced and fed, and empty hours, empty hands, empty companions, empty words, empty hearts—these draw in evil spirits as a vacuum sucks in air. That something for which we have no better name than conventionalism—the bondage of custom—is another great stumbling block in woman's way. Women have fine courages, and in the courage of endurance they seem far superior to man, but in the courage of their opinions and convictions they are, with some splendid exceptions, greatly lacking. Those who are trying to help destitute woman to get a living find their chief obstacle in a rigid and unreasoning adherence to conventionalisms on the part of woman herself. The almost universal repugnance to domestic service is an example of this. Many a woman has gone to shame and ruin who might have been living respected and honored, if she could only perceive the worth and dignity that belong to even the most menial service well and faithfully done; and here is a point in which our present systems of female education are woefully deficient. Another point is the difficulty with which women are made to see that this life may afford them an honorable career outside of marriage. The Society for Opening up New Employments for Women publish a list of 24 occupations as specially favorable for women. Among them are art decoration, designing for textile goods, wood carving and engraving, dispensing medicines, bookkeeping, shorthand writing, lithographic drawing and writing, telegraphy, photography, printing, hair-dressing, upholstery and stationery work, lace-cleaning and mending, glass-engraving, gilding, bookbinding, electro-plating, ivory-cutting, pearl-working, modelling, cameo-cutting, seal-engraving, plaster statuary, besides the general occupation as saleswoman in many departments of trade. These do by no means exhaust the catalogue of things which a nineteenth century women may do if only she be instructed to begin life at the beginning—viz., at the question how to eat her bread in honest independence. And none of these occupations need rob her of her crowning charms of purity and grace, for they are intrinsic and are only hightened by "strength and honor."

MIRTH.—Mirth begets mirth, and it is an excellent promoter of health. It is true a man may live to be very old and yet have no mirth in his composition, but the world at large cannot get on well without it. When the people are depressed they think they cannot be mirthful, but this is not altogether true. Mirth in such cases can be cultivated. By effort, one can compel himself to be mirthful, just as he can compel his muscles to move about when he feels tired or lame. If one cultivates the habit of seeing the jolly side of everything and humor everywhere, he will be surprised at the ease with which he can drive the blues away and enjoy himself, even when everything looks dark and gloomy.

Young Folks' Column.

The Farmer Boy.

[Written for Our Young Folks, by ADA TAYLOR.]

Oh! I'm a merry farmer boy;
I'm busy all the day!
I help to plow, and sow, and reap
And gather in the hay.

I love to work on a dewy morn,
With a heart so light and free;
I hear the songs of the happy birds,
As they fly from tree to tree.

I wander through the clover high—
I romp and shout with joy!
Oh! every day I thank my stars
That I'm a farmer boy.

I go at eve to find the cows
Through field and grassy dell;
I listen as I drive them home
To the tinkling of the bell.

I love to breathe the cool fresh air,
When in the fields of wheat,
And toss up high the new-mown hay,
So fragrant and so sweet.

And when I wish to rest awhile,
I wander toward the stream,
And lay beneath the old oak trees
On grass so soft and green.

I listen to the rippling sound
Of the water's ceaseless flow;
I watch the leaves float on the top,
And wonder where they go.

But when the summer time has gone,
And golden autumn comes,
Oh! what a glorious time I have
'Mid apples, grapes and plums

I climb the very highest trees
And pick the fruit that's ripe;
I jump across from limb to limb
With steps so quick and light.

Oh! I'm the happiest boy that lives—
I jump, and shout, and whoop;
I envy not the city chap
Who wears a stylish suit.

Ho! for we merry farmer boys,
We live a joyful life;
From "rosy morn till dewy eve"
We're happy, gay, and blithe.

How the Children Lost their Dinner.

[Written for the RURAL PRESS by UNCLE TOM.]

They all went down to the boathouse—John, Harry, Addie, and Willie. Mother said, "John, won't you please take the children out rowing until I get through baking?" John wanted to finish the cover he was making for his ball, but mother looked sick and tired, so he put down his work and called the children. Will ran for the boathouse keys and off they started. When the boys had drawn the boat out, Addie stepped in, John and Will took the oars, and Harry put his hand in the water and pretended to steer.

"Where shall we go?" said John, as they began to row.

"I want to go over to Coatne," said Addie, "to get a few more scollop-shells to finish my frame for grandma."

Coatne is a long strip of land about half a mile wide, that comes down towards the town from the other side of the bay.

"I am afraid that we shall find it hard work to row back two miles against this wind," said Will.

"Will," said John, "if we leave the shells till to-morrow, it will be too late for Addie to finish the frame for grandma's birthday, so I guess we will risk it."

They pulled away for Coatne, and as the wind was in their favor, they rode along at a fine rate and soon reached the shore. Addie began to look for her shells, while the boys first pulled up the boat; then taking off their shoes and stockings, began to play that the crabs were bad men that they must shut up in the prison which they quickly built of sand and stones. They were having such a good time that they forgot all about the time, until Addie came up and said: "If we don't hurry up, boys, we shall not get home in time for dinner, for there comes the steamer, and it is almost twelve."

The boys picked up their shoes and stockings and started for the boat, but when they came to the place where they had drawn the boat up, they found the footprints where they had left the boat, but the tide had come up and the boat had floated off. And so they had to stay there until nearly 4 o'clock, when Captain Budett, who had been fishing up the bay, came along with their boat fastened behind him, and took them all in his big sailboat back to town.

Addie asked John if he wanted to go to Coatne again, right off.

"I think we will fasten the boat next time," said John.

MITIGATED MISERY.—"Go into the room and bring that cake off the table," said a mother to her son. "It's too dark; I'm afraid to go into the room." "Go into that room this instant, or I'll go and bring out the strap." "If—you—bring—out the—strap," replied the boy, sobbing, "bring the cake along too."

HE was a fine-looking man, and he proudly strutted down the sidewalk with the air of proprietorship in every movement. "Beg pardon, sir," said a stranger, as he stepped up to him, hat in hand, in utmost humility, "do I have your permission to remain in town over night?"

Domestic Economy.

House Cleaning.

[Written for RURAL PRESS by CLARA DEMING.]

House cleaning is one of the necessary evils of living. Every good housekeeper has a siege of it at least once a year, and sometimes oftener. The spring is the time generally chosen for this attack upon the citadel where old King Dust has, unobserved, obtained quiet and complete possession.

The early part of the dry season, in California, is the best time to begin house cleaning. The winter's mud is nearly or quite gone, and the dirt that is taken out now will not be carried back by the thoughtless ones who neglect to clean off the particles of mother earth that adhere to their shoes in rainy weather, especially if the soil is of an adobe nature. Sometimes husbands, brothers, or children track in mud upon the floor which has just been scrubbed, and has, as the housekeeper thought, obtained the required degree of whiteness. What can be more disheartening than to find a part of it has to be done over, because of the thoughtless, though not intentional, carelessness of others?

House cleaning is like climbing a mountain—it looks so high and the ascent so hard, one feels as though she scarcely had strength to reach the top; but it must be done, so she prepares with a determined mind to get as far as possible. By degrees the work is accomplished; and as she stands on the summit and surveys the result of her perseverance and labor, she looks out upon the vista of time to come and sees a possible chance of accomplishing many other things dear to her woman's heart, now that the spring cleaning is well out of the way.

The gentlemen of the household like to see the house clean, but had rather it would be done without disturbing its equilibrium or inconveniencing them any, and especially do literary men dislike to have their books and papers disturbed. A lady friend of ours said she was married several years before her husband knew there was such a thing as house cleaning. She always cleaned or had alterations made when he was away from home. Many men would like to leave home while these things are being done, but cannot always make it convenient.

When this siege is begun against King Dust, the household is turned upside down and inside out. The inmates don old gowns and sweeping caps, if they have them; if not, the handiest towel is wound about the head and made to serve the purpose of a cap in protecting the hair from the particles of flying dust. They then arm themselves with broom, dust-pan and brush, and an "old screw-driver" to extricate the carpet nails.

First the furniture must be moved to an adjoining room; then down upon their knees with the screw-driver to make an attack upon the nails. After a struggle, they have all yielded to the persuasive power of the screw-driver, and the carpet is folded together and lifted to the window and thrown out, or carried out by the united force of the house cleaners.

Then comes the most disagreeable part of the whole, to one who has a throat that objects to the inhalation of dust, and that is sweeping together and gathering up the straw and dust; if she has not already eaten the required "peck of dirt," she will be sure to do so now.

When the dust has settled from this process, the ceiling and walls are swept down, spiders' rights are totally disregarded, their wonderful gossamer homes and numerous families destroyed by the enemies' weapons of war.

The siege is now well under way, and the next battering-ram is the scrubbing brush, pail, soap and wiping cloths. Scrubbing and rubbing is carried on with such force as to really endanger the adhesive quality of the paint.

After paint and windows are clean, the picture frames and glasses are to be washed, and the furniture dusted and oiled. A good force may possibly get this far in one day, but if one or two are alone, it will take two or three days.

Getting the carpets shaken and beaten, in the country, is a matter of no small concern, especially if they are heavy Brussels carpets. In the city, it is easy enough to have a man come and get them, take them to a cleaning house, and bring them back so clean they look like new. In the country, the efforts of the whole family and hired help will not suffice to extricate all the dust.

The carpet being cleaned, new straw must be found, and hammer and tacks obtained; and the chances are that the tacks were forgotten the last time any one was in town, so they must wait until some one can go to town.

Tacks and stretcher in hand, carpet laid down, the first step is taken towards putting to rights. Everything goes merrily for a time, when a false stroke of the hammer causes an exclamation of some kind, some one's finger nail has been mistaken for a carpet nail; no matter what you may think who have not tried it, it is painful and must be nursed for a few moments, although little time can be spared; soon the unfortunate one is hammering away again, perhaps with a better will than before.

When the person's back seems nearly broken from stooping over so long, and the poor fingers have been pounded until they are sore, the nailing comes to an end, and the room is ready for the reception of its furniture.

This process is repeated in each room of the house until all the corners of the dwelling from garret to cellar have been delved into and their quiet and peace disturbed.

If painting has to be done, it will take longer, and the whole house is apt to be in disorder for some time. This is the very time one's friends select for a visit, and the lady of the house has to play the agreeable, although she is nearly tired out and feels cross to think her usually tidy home should be in disorder when this particular friend should choose to honor her with a visit.

The length of time it takes to clean a whole house depends upon its size and the interruptions. Although it has been a hard siege, the time comes when the last wall of dust is removed, and the army enters the citadel and rejoices at the victory won.

The knowledge of the cleanliness of the home pays for the trouble and study. Sewing, gardening and pleasure can once more be resumed.

May 18, 1882.

CLAM FRITTERS.—Drain and chop a pint of clams, and season with salt and pepper. Make a fritter batter as directed below, using, however, a heaping pint of flour, as the liquor in the clams thins the batter. Stir the clams into this and fry in boiling fat. To prepare fritter batter take one pint of flour, half a pint of milk, one tablespoonful of salad oil or butter, one teaspoonful of salt, two eggs. Beat the eggs light. Add the milk and salt to them. Pour half of this mixture on the flour, and when beaten light and smooth, add the remainder and the oil. Fry in boiling fat.

ORANGE SPONGE.—Dissolve one ounce of isinglass in one pint of water; strain it through a sieve, and let it stand till cold; then mix with it the juice of six oranges and one lemon; sweeten to taste, and beat the mixture with a whisk until it becomes white and looks like sponge; put into a mold and turn out when required, ornamenting it with slices of cut orange.

Good Health.

Diet in Corpulence.

Joseph Harrass gives some interesting hints on his personal experience in treating corpulence, which may be beneficial to others suffering as he did. He was corpulent, had irregular and feeble action of heart, tendency to fainting, difficulty of breathing, and many disagreeable sensations in the head indicative of nervous exhaustion. Hight, five ft. six inches; normal weight, 150 lbs.; age, 59; weight at beginning of treatment, 200 lbs. Began treatment October 8th. Treatment as follows:

Breakfast—Vegetables, brown bread (toasted), water, with lemon juice, and occasionally oatmeal.

Dinner—Vegetables, brown bread, water and plain pudding.

Supper—Brown bread (toasted), stewed fruit and water.

No tea, coffee, cocoa, or milk, except skimmed, and only a trifle of butter.

Result:

End of October weighed	187	lbs.
" November weighed	182	"
" December weighed	177	"
" January weighed	174	"
" February weighed	173	"
" March weighed	170	"
" April weighed	168	"
" May weighed	166	"
" June weighed	166	"
Present weight	150	"

All the distressing symptoms have been relieved, and the patient is so well he can again carry on his business. His physical and mental strength have been greatly increased.

Mr. Harrass says he has suffered no serious discomfort from his diet, except when away from home, and he feels as if he had learned an important lesson as to how to reduce his corpulence—which has been such a source of discomfort—and once more enjoy life.—*Herald of Health.*

DIGESTION OF FATS.—A querist asks, in the *Dietetic Reformer*, if fats, being rather hard of digestion, cannot be dispensed with as food, and sugar and starch used in their stead. To this the *Herald of Health* replies that fats are no more difficult to digest than starch; that they contain about twice as much force-giving qualities to the pound, and that there being a special arrangement in the digestive apparatus for preparing them for absorption, it would seem absurd to dispense with them altogether. So, too, the milk furnished by the mother abounds in fats and sugar, whereas there is no starch in it, and this is evidence of its use in the animal economy. The prejudice against fats is not justifiable. It works harm rather than good. It is time there was a better understanding on the subject. The vegetarians need not abstain from fat because they eat no animal oils. Vegetable oils abound, and are even more digestible than the former, and purer and more wholesome.

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SAN FRANCISCO:

Saturday, May 27, 1882.

TABLE OF CONTENTS.

EDITORIALS.—Annatto; Silk Culture; Activity in the Cali Business, 413. The Week; Sorghum Sugar; Evil Effects of Glucose Meal, 420. Disinfection of Fruit Boxes; A New Educational Institution; The Condition of the Cattle Interest, 421.
ILLUSTRATIONS.—Foliage and Fruit of the Annatto, 413. The Silkworm in its Natural State, 415. The Harmon Seminary for Young Ladies, Berkeley, Cal., 421.
THE STABLE.—Horse Breeding in California No. 9, 414.
FORESTRY.—Keep Your Oak Trees, 414
SERICULTURE.—Silk Culture in California, 415.
PATRONS OF HUSBANDRY.—The Contra Costa Grangers' Business Association; The Debris Question; Walnut Creek Meeting, 416.
AGRICULTURAL NOTES, from the various counties of California, 416-7.
HOME CIRCLE.—The Three Little Chairs, (Poetry); Widow Appledore's Romance, 418 Chaff, What Women can Do; Mirth, 419.
YOUNG FOLKS' COLUMN.—The Farmer Boy, (Poetry); How the Children Lost Their Dinner, 419
DOMESTIC ECONOMY.—House Cleaning, Clam Fritters; Orange Sponge, 419.
GOOD HEALTH.—Diet in Corpulence; Digestion of Fats, 419.
QUERIES AND REPLIES.—Mammoth Strawberries; Scale-Leg in Fowls, 420.
ENTOMOLOGICAL.—The False Chinch Bug on Grapevines; Organizing for the Insect War, 420.

Business Announcements.

Highland Springs, Lake Co., Dr. C. M. Bates.
Thresher for Sale, D. D. Hudson, Fresno, Cal.
Star Cylinder and Concave Tooth, A. F. La Shells, Biggs.
The Economy Hay Press—Baker & Hamilton.
Mammoth Grove Hotel, J. L. Sperry, Proprietor.
Armes & Dallam, Wood and Willow Ware, S. F.
The Vineyard Harrow—Jackson & Truman, S. F.
Separator Attachment, A. W. Lockhart, Sacramento.
Commission Merchants, George W. Meade & Co., S. F.

The Week.

The north wind tired itself out, and there has been a succession of kinder days. Southerly breezes, fogs, and here and there a sprinkle, have combined to improve somewhat the growing grain in certain regions, but the idea that these homœopathic restoratives have remedied the evil wrought by the northers is quite erroneous. It is to be a year of rather small things, as the grain has suffered from thirst, the vines and fruit trees from frost, and both grain and trees from the desiccating winds. The loss from dropping of immature fruit extends over a large area of the State. But though agricultural producers may have to pursue a somewhat conservative course this year, there is the consolation of the past surplus and the hosts of slain mortgages which are behind. In front there is the hope of next year's fullness. But it will not by any means be a year to cry over. Good prices will compensate for some decrease in quantity, no doubt, and in any event there will be no want or grievous deprivations. We are obliged by the greater time needed by the engravers to postpone our tourist extra edition until another week.

EMIGRATION from Russia is progressing, and Jews are selling the whole of their property at any cost and hurrying to the frontier. The Jewish committee, at Berlin, resolved to only help those who, by the action of the Russian authorities and the destruction of their property, were forced to emigrate.

Sorghum Sugar.

We lately stated, briefly, that the examination of the sorghum sugar industry by the cautious and conservative gentlemen of the National Academy of Sciences has resulted in a report that the business was proceeding upon sound scientific data, and was, therefore, commended as worthy of public attention. It is not expected that these highly scientific men are to be put in the position of agricultural experts, but their decision is of great value, because they are disinterested and because the possibility of making crystallizable sugar, in considerable amount, out of sorghum, is a special question which scientific examination is competent to decide. Therefore, as we have said, it is an excellent thing that sorghum has received the favorable judgment of the academy's committee.

The matter is one of considerable importance in this State. Parties in different parts of the State have been growing amber and other canes, and have gained good results with it in molasses making and as forage for cattle. There has not, so far as we are aware, been any considerable investment for the extraction of cane sugar, although several have used evaporators, to some extent, for sugar, and have turned out samples of various qualities. The point which we would now make is that there is ample ground to proceed with experiment and investment for the manufacture of cane sugar from sorghum, and many find this a profitable use for their land, time and capital.

One of the academy's committee, Prof. B. Silliman, of Yale college, has just written an open letter to a friend in Louisiana, in which he advocates the planting of sorghum seed on lands where the true cane has been killed by overflow, thinking that by this movement the planters may have a busy and profitable season instead of idleness and loss. For, as must be generally known, the replanting with the true cane will occasion much lapse of time before a crop can be gathered, while the sorghums spring forward quickly from seed into a saccharine maturity. Of this matter Prof. Silliman says:

I think I may safely say that your planters can secure a crop from the seed of say half a dozen sorts of sorghum, which will fully mature in periods of from three months to six months from date of sowing, and which will produce from one to two hogsheads of good "C" sugar, polarizing 96% and which cannot be told from the best Ribbon or other cane sugar of the same grade. This they can do with no other treatment than they now employ in working the old stands of cane, and with a longer working period the juices will read at least 10° B., equal to 1,075 specific gravity and will polarize good 12° to 16°, which is, if I am correctly informed, fully as well as the Louisiana planters now do. This juice they can defecate with lime and treat with sulphur fumes, or sulphuric acid, and reduce in vacuum pans or in open trains.

Prof. Silliman then proceeds to state more explicitly the results which have been attained with these sorghum canes, both in the sugar factory and in the laboratory, drawing the data for the latter from the careful tests of Prof. Peter Collier, chemist of the Department of Agriculture at Washington. We shall prepare an abstract of the points presented. "Early Amber cane" matures in 90 days, reaching its perfect condition in the latitude of Washington by the middle of September and maintaining a working period of two months, or until severe frosts. It makes fully 9% of "available sugar" (after deducting about $1\frac{1}{2}$% of glucose and 3% of solids not sugar), and has produced over wide areas of the West 10 to 20 tons of canes per acre, yielding 140 gallons of juice per ton, and of well-grained sugars from 80 to 100 lbs. per ton of stalks and from 20 to 25 gallons of syrup of excellent quality, weighing from 11 to $11\frac{1}{2}$ lbs. per gallon. This may be considered the leading variety of the early maturing sorts of sorghum. The yield of seed is from 20 to 30 bushels per acre, an excellent grain for stock or hogs, worth in the North from 50 cents to 75 cents per bushel.

The "Early orange" matures in about four months, say 117 days, from seed; it has an average exponent of sugar of $72\frac{1}{2}$%, or an average available cane-sugar product of $9\frac{3}{4}$%; it is good here for about 2,000 lbs. per acre of excellent "C" sugar. The largest grain Prof. Silliman has ever seen in any sugar, sorghum or cane, was made last year from this variety of sorghum. In Texas it endures the winter, and is the first instance of a perennial sorghum reported. Prof. Silliman says that the very remarkable plasticity of this species places it in the very first rank of variability, and gives the best possible reasons for believing that new and superior varieties better adapted than any now known will be evolved by our American experience. It is remarkable how much has been accomplished in this way already. The orange has a working period here of 79 days.

There are half a dozen varieties of sorghum of from five to six months in maturing, which are substantially alike, requiring 150 to 170 days from the seed to full maturity, and giving in the North from 20 to 60 days' working periods, but in Lousiana and Texas affording probably 90 days' working period. These are Honduras, Honey-top, Sprangle-top, Texas Cane, Mammoth, etc. All these have been grown in the North, but are very little suited to that latitude. In Louisiana they will work in perfectly well with the early-maturing varieties, and keep the mills busy for a long period of time. Even in Kansas last year $37\frac{1}{2}$ tons of Honduras were matured on an acre. In Louisiana soil and climate, such a yield will probably be general.

Prof. Silliman closes his review of the subject with a few points of the greatest importance to be known, as essential to success in obtaining cane sugar from sorghum.

First.—The plant should be fully ripe before rolling commences. Its ripe condition is known by the seed being fully hard and the upper leaves beginning to wilt. If rolled before this time the juice, as appears by thousands of analyses, contains less sugar and more glucose than at maturity, and of course the amount of sugar available is diminished in proportion.

Second.—The canes should be rolled as soon after cutting as possible—all in the same day if possible. It is not important to remove the leaves; by some evidence the removal of the leaves appears to be an injury. But the top must be removed, of course, as well to save the seed as to avoid injury to the juice.

Third.—The juice shows by its density just what it is worth. It should run from 8° to 12° B., say from 1,060 to 1,090 specific gravity, averaging about 1,075 or 10° B. And it should be handled without delay, as it is more prone than Cuba cane juice to chemical changes. But the same rules for acidity, the same treatment by lime and by sulphur will be found available as at present with your planters.

Fourth.—For the matter of culture, it is sufficient to say that any soil that will raise a good crop of corn will do well for sorghum, which is best drilled in with a common drilling machine in rows $3\frac{1}{2}$ ft. to 4 ft. apart, the plants to be thinned out to about four inches apart in the row. During the early weeks of growth, sorghum is delicate and requires a little more care than corn. But once well under way it requires no extra care.

We should like to know this year what the sorghum growers of California accomplish with the cane, either for sugar or for cattle food. On moist places it might now be profitably sown to fill out the lack which the short growth of pasture this year will occasion. It seems likely that the sorghums have as yet only reached the beginning of their usefulness and importance in this country.

Evil Effects of Glucose Meal.

There is talk of establishing glucose factories in this State, and probably those who are thinking of investing are counting upon a certain revenue to be derived from the sale of their refuse to dairymen. In order that this matter may be well understood beforehand, we shall give the facts concerning the use of it as ascertained by Eastern experience. Large quantities of glucose meal have been sold to dairymen on the ground of increasing the flow of milk. Regarded simply in this light, it seems certain that it is a profitable article to feed to milch cows. Patrons of cheese factories claim that they would prefer to sell their cheese at one-half to three-fourths of a cent per pound less money, if they could be allowed to use the glucose feed. Sugar meal sells in New York at $8.50 per ton, so that when cows are fed upon it entirely, it makes a very cheap food. For a time also the animals seem to thrive upon it.

But there is another light in which this subject must be viewed, entirely apart from the cheapness of the meal as food, or from its effect upon the cows. The Utica *Herald* says: It is universally acknowledged that whey should not be fed to cows, on account of the effect it has upon milk, and the same principle is even more imperative in the case of glucose meal. In the use of milk for the household, although no odor can be detected when cows have been fed upon the meal, the moment the milk is poured into a cup of coffee it assumes a stringy appearance and becomes an object of suspicion. We hear of one milkman who commenced using the meal without the knowledge of any of his customers. They at once began to complain, and threatened to leave him if there was not an improvement in the milk. He stopped the use of the meal and there were no more complaints about his milk. But its worst effects are seen in the cheese made from this milk. In the first place, it takes about one-third more annato to color the cheese, which at once shows the presence of an undue amount of acid. In the second place, the milk has to be heated much higher than usual, and even then it is impossible to bring the curds to a proper consistency. They remain throughout soft and salvey, and will not cure down firm and solid. A Chicago dealer lately wrote to one of his consigners in regard to his cheese, as follows: "They have the appearance of being finely made; but, on inserting the tryer in the cheese, the plug comes out porous and gritty; and on holding them any length of time they seem to rot and get bad. There is something in the milk, in my judgment, that causes these conditions. The cows are fed on something that is sweet, or foreign to their customary feed. The cheese seem precisely like those of a certain factory which I handled last year, which rotted down in 30 days, causing a loss to me after I had sold them. Some of my customers refused to pay at all. After investigation, I found the cows had been fed on glucose (meal), which invariably produces this kind of cheese." This is only a single example of experience which has been repeated in various parts of the country. And it shows that the use of this article is one which is liable to cause serious loss to everybody connected with it. A condensed milk factory, located in a village only a few miles east of here, lost several thousand dollars last season because some of its patrons used glucose meal as food for their cows. The condensed milk prepared from it was sent back to the factory by those who had purchased it, as wholly unfit for any kind of use.

With facts like these, concerning which there can be no sort of question, before our dairymen, they must see that it would be the hight of folly to commence or, if already commenced, to persist in the use of sugar meal for the mere sake of a little increase in the yield of milk. In the end it will inevitably result in serious loss either to themselves or to the factory to which they send their milk. And if it is discovered that certain patrons are feeding the meal, the factory man himself should take the matter in hand, and insist that the practice be done away with. It is an injustice done not only to himself but to the other patrons of his factory.

QUERIES AND REPLIES.

Mammoth Strawberries.

EDITORS PRESS:—I see an item in your paper, May 20th, headed "Mammoth Strawberries," which excited my curiosity a little. Strawberries over three inches in diameter! Wonder how they place them in market, in boxes or peach baskets. A strawberry basket would be nowhere, as they would not hold one berry. We are anxious to learn the kind of soil they grew on and the kind of treatment they received to get the size. I have seen big beets, carrots, cabbages, pumpkins, etc., and some good, large strawberries; but these strawberries, over three inches in diameter, "gets me." Would it not be well to have some on exhibition at San Francisco, where those Eastern editors might see them?—SUBSCRIBER, Antioch, Cal.

These berries were grown by Mr. Hinde, of Abaheim, and we credited the measurements to a Los Angeles paper. The size is a little larger than ever reported at the East, and yet they have approached close to it. Perhaps Mr. Hinde will tell how he gets such berries, and how he gets rid of them.

Scaly Leg in Fowls.

EDITORS PRESS:—I send a recipe for scaly-legged fowls, in answer to Mrs. S. A. Shelley, of Colfax, in the PRESS some time ago. I have been troubled with the same disease, and this is my cure: Make a salve of lard and flour of brimstone, say one tablespoonful of sulphur to one pint of lard; melt the lard just enough to mix well with the sulphur. If you get it too hot it will not incorporate well. Rub it on thoroughly with a rag or the fingers. If too hard put a very little kerosene with it to soften. This will make a permanent cure with one application, generally. If the disease is not too bad, one application per week is often enough.—J. L., Modesto, Cal.

ENTOMOLOGICAL.

The False Chinch Bug on Grape Vines.

A vine pest reported from Apex, San Diego county, has been determined by M. Cooke to be *Hysius destructor*, or the false chinch bug. A vine grower at Apex, upon whose vines the pest appeared, gives the San Diego *Union* the results of his observation and experiment with the insect, from which we take the leading points. The insect may be found eating the tender suckers, or in the main vines, and is of three forms. The larvæ of the males are of a reddish-brown color about the thirtieth of an inch in length. That of the female has a black head and thorax with a white line on the back, the tail brown and the whole insect about the tenth of an inch in length. The females get wings in a few days and then the fly does not resemble the larvæ. It is then fully one fourth of an inch long, with silvery white wings kept close together. They are very swift of foot, and usually drop down off a vine on your approach and run for shelter. Pinch one, and if it smells like a chinch bug or bed bug, be sure you have them and do not stop to ask any questions, but with all your energy try to exterminate them or they will surely destroy your vines. They keep together in bands and soon make a vine as black as if fire had been used. Not one of the usual insecticides has any effect upon them. The only way by which they can be destroyed is with boiling hot water or fire. The best way is to put a small pile of straw near an infected vine, under which the insects will go for shelter near night or during the greatest heat of the day. When under the straw, pour kerosene oil over the trap and set on fire at once, using the greatest care and expedition to get a furiously hot flame upon them or they will hide in the ground.

Organizing for the Insect War.

There is just now discernible much interest and activity among fruit growers on the insect question. It is well that it is so, for the subject is of the greatest importance. In another column we give a report of a meeting of Sacramento river fruit growers called to discuss the disinfection of fruit packages, which will give our readers information as to the steps to be taken. In Los Angeles county last week there was a large meeting held. The Los Angeles *Times* says that eighty-two persons were present at the meeting of fruit growers held in Orange, on Thursday, to devise the best method of exterminating insect pests. Alexander Craw and B. M. Lelong gave their experience regarding insect pests, and exhibited a large collection of bugs, worms, flies, etc. A committee on resolutions and permanent organization was appointed, and a vote of thanks passed to Messrs. Clark, Craw and Lelong. The meeting then adjourned subject to the call of the committee. It is a good thing to come together for consultation and to ascertain the best things to be done under the various conditions which prevail.

THE agreement entered into by the manufacturers of cotton goods, cotton and jeans, and other low-grade textile fabrics, looking to a reduction of the quality produced in Philadelphia and vicinity, has gone into effect, and many mills shut down. The movement is to curtail the production of lower grades 50% and manufacture the finest class of materials of 22,000 looms. In Philadelphia nearly 10,000, or the greater number of those engaged in making the goods mentioned, have entered into a compact, and a large number outside of Philadelphia, have agreed to join the movement.

Disinfection of Fruit Boxes.

A meeting of fruit growers was held at Courtland on Tuesday, to consider the action to be taken in regard to the proposed plan for the disinfection of fruit packages at San Francisco. The meeting is reported by the *Record-Union*, and we shall present such parts as seem of general interest: Wm. Barry was elected chairman, and stated that the object of the meeting was to consider whether the proposed plan of disinfecting fruit packages at prices stated by parties in San Francisco would be acquiesced in by fruit growers on the Sacramento river; that it was understood that all packages, in shipping fruit to San Francisco, were required to be disinfected before being returned to the orchards. He stated that Mr. Cooke was present by invitation, and could probably give them some information concerning the arrangements made in San Francisco, with which many of the fruit growers on the Sacramento river were dissatisfied.

Mr. Cooke said he was present by invitation of Mr. Barry and others, to explain to them, if possible, the necessity of carrying out the proposed plan of disinfecting all empty fruit packages before being returned from market to the orchards. In relation to the laws for the protection of horticulture and the quarantine rules, his duty was to enforce them. He has no power to abrogate or change any part of them. However, his intention was to use his best endeavors to enforce the laws for the benefit of the fruit growers, and avoid as much as possible unnecessary expense. In reference to the fruit growers on the Sacramento river, he knew nothing of them personally, and was satisfied that they would use every endeavor to comply with the law. At the same time he would say that many of the orchards were rented or leased to parties who would not comply with the law, if in any way they could avoid doing so. He thought it would be an expensive experiment to have to appoint local inspectors at all points or landings, and had prepared to disinfect all packages sent to market at such places as San Francisco, Sacramento, Stockton, San Jose, etc. By adopting this plan, the fruit growers cannot be imposed upon by being charged an exorbitant price. As the law expressly states, it is his privilege, or that of his agents, to disinfect any material requiring disinfection. As to the prices spoken of in San Francisco, he had nothing to do with that, further than requiring the local inspectors appointed to be prepared to disinfect any material required to be disinfected, at the request of the owner or agents. In order to make the work effective it must be general. Several boards of supervisors had refused to appoint boards of horticultural commissioners, as petitioned for by the fruit growers. In such counties there were not any organizations with which he could advise; and it would be difficult to secure local inspectors to be paid by fees without making a heavy expense on the growers; therefore, the disinfection of all packages was the most economical and mos efficient plan that could be adopted under the circumstances. He referred to the handling of the orange crop last season under the quarantine laws, which he believed was done in a manner satisfactory to all concerned. However, if the fruit growers insisted on the appointment of local inspectors, he was ready at any time to make the appointments, if proper persons can be found to perform the duties for the fees provided by law.

Mr. Barry thought it was an injustice on the fruit growers to charge one cent for each peach basket, and that the whole matter was wrong. Also that it was unnecessary to use potash, one pound to each 20 gallons of water used.

Mr. Cooke asked the speaker if what he had stated in regard to disinfection was from personal experience, or did he know of any person using potash producing the results stated. Answers were given in the negative.

Sol Runyon said that some time ago he had read in the *Record-Union* an item warning fruit growers to look after the empty boxes held over from last year. He immediately examined his boxes, and found more larvæ of codlin moth than he expected. He disinfected all his boxes by dipping in boiling water for three minutes. He broke some of the boxes assunder and found all insect life destroyed. He believed in the plan of disinfecting the return boxes, but was not then prepared to say whether he wished it done in San Francisco or at home. He had met the parties in San Francisco, and thought the work could be done satisfactorily to all. However he did not see, if the law was to be enforced, that peach baskets could be exempted, as they were as liable to carry the moth or larvæ to the orchards as any other package used.

J. B. Green thought the disinfection would be a heavy expense, as a basket costs 20 cents, and was used about seven times. The disinfecting would make the basket unfit for use more than three times, which would be equal to a cost of seven cents for each shipment; that, added to freight and commission, left but little to the grower.

Geo. Green said he understood that peach baskets were exempt. At least he thought they should be.

D. Hollister said he thought the time was coming when some precautions should be taken to prevent the spread of insect pests, but that the work done at present was only experimental.

Mr. Cooke stated that the work was beyond experiment in many cases, as success has been reached in demonstrating that the scale insect and codlin moth could be destroyed.

Mr. Bates said he believed that something should be done, and he favored the plan that would be the most efficient to prevent the spread of insect pests, and offered, as a motion, that a committee of three be appointed, with power to act; that the committee go to San Francisco and make such arrangements for the disinfection of empty packages as they may think proper. Motion carried.

While the Chairman was in consultation with the growers as to the persons to be appointed as such committee, a general conversation ensued by those present.

Mr. Calloway said he was satisfied it was the law, and would have to be complied with, though he thought it tyrannical, and should be repealed by the next Legislature.

Sol Runyon thought he could propose a plan that would solve the problem. He had discussed the question with his neighbors for years, and knew they did not agree with him. However, he was satisfied the law should be amended by an additional section, making it a misdemeanor to have any empty fruit packages returned to any orchard.

Mr. Cooke said that although the orchards between Richland and Walnut Grove were generally not so much infested by insects as many other sections of the State, yet he was satisfied there were enough to be found, that close inspection might make a great difference (at least for this season) in a financial point of view.

The Chairman appointed as the committee on disinfection of packages, Messrs. Dwight Hollister, Sol Runyon and George Smith.

The sentiment of the meeting was that they wished to comply with the law. The only difference of opinion was, when and where the disinfection should be done.

THE FOREIGN CATTLE TRADE.—The President has transmitted to the House of Representatives a report of the Secretary of State in compliance with the resolution asking for information touching the existing restriction on the importation of American cattle into Great Britain, with a view of guarding against the introduction and spread of pleuro-pneumonia among the cattle in England and Ireland. Correspondence with the British government has shown that the hindrances imposed are in accordance with the provisions of the British statute, while their removal, it has been intimated, was the question of the institution of a complete and effective system of domestic legislation to check and extirpate cattle disease in the United States, joined to an adequate and trustworthy inspection of imported cattle from the breeding grounds to the sea, with certification of their freedom from disease or contagious influences. Secretary Frelinghuysen says he feels it to be the special province of the Secretary of the Treasury, or the Commissioner of Agriculture, to recommend the form of legislation necessary to establish an adequate scheme of cattle inspection at the farms, in transit and before shipment, which would admit of ascertaining and authoritatively certifying the absence of contagious diseases and infectious influences among exported animals.

A New Educational Institution.

The educational institutions of California are a credit to the Pacific coast. Our public schools are unsurpassed, and the liberality of the people toward them is proverbial. There is also a group of most excellent private schools and seminaries, to which young people are sent from all parts of the coast.

The newest of the private institutions is the Harmon seminary for young ladies, at Berkeley. It will be a new school in a bright new building, but it will be in charge of Rev. S. S. Harmon and Mrs. F. W. Harmon, educators who for more than 30 years have been known by their works in different parts of the State.

The engraving on this page, from the architect's drawing, will give the reader an idea of the outlines of the building. The villa style has been chosen rather than a more stately style of building, because the institution is to be a quiet, home-like school, which will endear itself to the affections of the pupils, and which will in turn benefit them by the influence of home guidance and guardianship, as well as by the weightier matters of the classroom. As shown in the engraving, the front portion of the building rises three stories, and is about 50x60 ft. upon the ground. Back of this is the central portion, 30x100 ft., two stories high, with a two-story projection in the rear 20x32 ft. Upon the left of the main hall are the reception-room and two music-rooms. Upon the right is the large school-room. The ground floor of the central portion of the building contains the dining-room and four recitation-rooms, with cloak-room and side entrance for day scholars. The ground floor of the rear projection is devoted to the culinary department. The upper floors, aside from music and art-rooms, will be chiefly devoted to scholars' apartments.

THE HARMON SEMINARY FOR YOUNG LADIES, BERKELEY, CAL.

The building has been planned by George C. Meeker, of Meeker & Banks, architects, of this city, who has embodied therein the ripened experience of those familiar with school requirements, and has secured free access of air and sunshine to all parts of the building. The plans show about 30 light and airy, well-ventilated sleeping-rooms, with the full complement of closets so dear to the feminine heart.

It is the purpose of Mr. and Mrs. Harmon, and those associated with them, to establish an institution for young ladies which will be first-class in every particular. It is expected that the work of the seminary will arrange itself in several departments. The institution will be complete in itself, in that it will have a regular course of instruction, for which diplomas of graduation will be awarded. It will also embrace a department of instruction with a special reference to the preparation of young ladies who desire to enter the State University. In addition, there will be a conservatory of music and courses of instruction in the fine arts, modern languages and *belles lettres*, in each of which will be secured the services of masters of recognized superiority. In all courses there will be a disposition to place the institution abreast of all true progress in the art of instruction and the choice of studies for the curriculum. The first term will open August 3, 1882.

FRESNO COUNTY.—The PACIFIC RURAL PRESS comes to hand this week with an article on Fresno, as seen by a special correspondent who accompanied the late excursion. The article is well written, and the author evidently intended to say only what seemed to him to be just.—*Fresno Republican.*

W. H. HARRIS, the Commissioner of Agriculture, has started a cocoonery at New Orleans, and thinks that he has demonstrated that the silk-worm can be profitably reared in that State.

The Condition of the Cattle Interest.

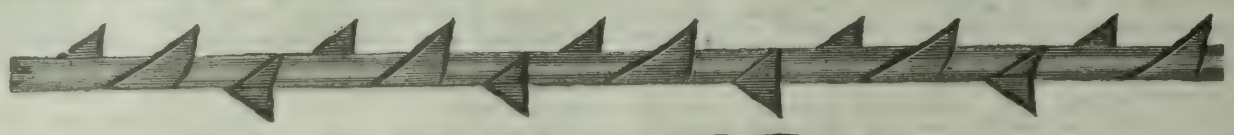
The present condition of the cattle interest of the United States is one of the most important agricultural matters now under consideration. We gave last week some remark on the beef supply and demand, and the reasons for the era of high prices which now rules throughout the whole country. Now we find something further in the New York *Tribune*, which is of interest to many of our readers. Forty millions of cattle are now luxuriating upon the springing grasses of fresh pasturage in the United States. Half of them have been foraging all winter, with no aid from men, in the pine woods of the South, on the plains of Texas, the slopes of the Rocky mountains, the parks of Colorado, the deep canyons of the Sierras, and the broad green valleys of California. The other half have been sustained in part with feed prepared with human labor. One in six of this vast number is wanted every twelve months to supply some 60 lbs. of beef to each inhabitant, with nearly 500,000 beeves to spare for the mouths of hungry foreigners.

The Statistician of the Department of Agriculture, Mr. Dodge, has just issued a report upon the spring condition of farm animals and their diseases of the past year. It appears that the mild winter has been remarkably favorable; that care and shelter have been more general, so that disease has been reduced to a minimum. The increasing value of cattle and beef has also exercised a conservative influence. There are fewer hides for sale in Texas and a smaller exhibit of bones bleaching on the plains. Whole herds have not been starved in snow-drifts. Still there has been loss of condition and of life from neglect and exposure, from death and starvation. Even in the heart of Illinois cattle have literally starved to death. In Missouri, the loss from want of feed has been heavy in the worst districts of last summer's drouth, and in some Mississippi River counties a large proportion has been drowned in the overflow. In mildest winters absolute freedom from losses cannot be assured if millions of cattle "have no protection except fringes of forest along the streams, a windbreak of planted trees," or "the tender mercies of a southern exposure." Even in more northern latitudes, where sheds and shelters are common, thousands are left to the protection "afforded by a wire fence or the sunny aspect of a ravine."

The most suggestive portion of the report relates to the investigation of the gain or loss resulting from the winter's feed of cattle. The question was, whether the manure left represented the net profit of the forage supplied at so great cost. The following conclusions were deduced from the facts and opinions of stock-growers in all parts of the country: 1. A considerable percentage of stock fed actually lose in flesh and in weight. 2. Another large fraction maintain their weight and add to bone and size of frame, but decrease in flesh. 3. A small proportion make increase of weight, 5%, 10%, 20% or 30%, depending upon comfortable shelter and amount and variety of feed. Those farmers who fail to shelter stock, who stint their forage supply or give innutritious material, make no gain in flesh, and often lose in condition and weight, as well as in capacity for the more profitable results of pasturage in the following summer. The contrast between such results and the experience of skilled feeders is strikingly shown. "The difference lies in a current habit of neglect and a thrifty custom of systematic feeding for flesh." It is shown that a saving of a moderate margin of this wide difference, say 100 lbs. during the season, at the low estimate of three dollars, would be equivalent to $50,000,000 for that portion of our cattle that is fed in winter.

In New England and the Middle States a small average gain is made in winter; in Maryland and Virginia less; and in most of the Southern States nothing at all, the increase in herds having pasturage (if not care) being counterbalanced by the losses and depreciation of vast numbers less fortunate. In the West there is wide variation in practice and results, with a small balance on the right side and a tendency toward improvement. The lesson is easily deducible that a majority of the farmers of the United States "do not practically realize the physiological necessity for continuous growth in the production of meat of juicy, rich, even quality, or the economic necessity of making every pound of feed yield the highest possible fraction of a pound of flesh." It may not be easy to attain such ideal fully, even by those of ripest skill and experience, but an approach to it would be worth an effort, which would be rewarded by a saving of many million dollars.

AMERICAN BARB WIRE



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IT IS THE ONLY BARB WIRE that will prevent small animals, such as rabbits, hares, pigs, dogs, cats, etc., from passing through, under or over it, the barbs are so near each other.

The Barbs being triangular-shaped, like the teeth of a saw, and close together, there is no *cruelty to animals*, as they cannot pierce the hide; they only prick, which is all that is ever necessary as *no animal will go near a Barb Fence twice.*

AS THE WIRE IS NOT BENT OR TWISTED, its tensile strength is much greater than the Wire in all other Barb Wire Fences, as they are all made of twisted or bent Wire.

HEAT AND COLD CANNOT AFFECT THE AMERICAN BARB FENCE, as it can be allowed to sag when put up, enough to cover contraction and expansion, *because it is a continuous Barb, and cannot slip through the staples one inch.* Each panel of Fence takes care of itself.

The Barbs cannot be displaced or rubbed off, and are not pounded on and indented into the wire to hold them in place, as in other Barb Wire, thereby decreasing the strength of the Wire The Barbs are short, and broad at the base, where strength is required.

THE PAINTED WEIGHS A POUND TO THE ROD, so that the purchaser knows exactly how much fencing he is getting. Galvanized weighs slightly more.

☞ SEND FOR SAMPLES AND PRICES. ☜

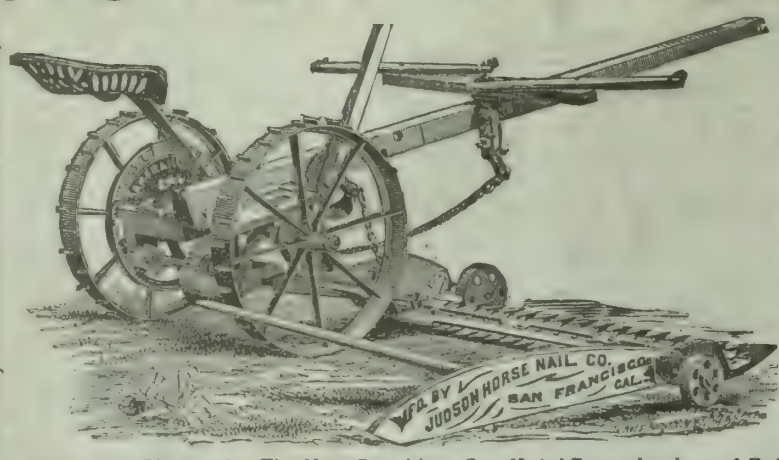
W. W. MONTAGUE & CO.,

110, 112, 114 and 116 Battery St., San Francisco, Sole Agents for the Pacific Coast.

THE

VICTOR MOWER.

The Only Mower Made on the Pacific Slope.



SEND FOR PRICES AND CATALOGUE
Extras at What They are Worth.

The Best. The Cheapest. The Most Durable. Gun Metal Boxes in place of Babbitt.

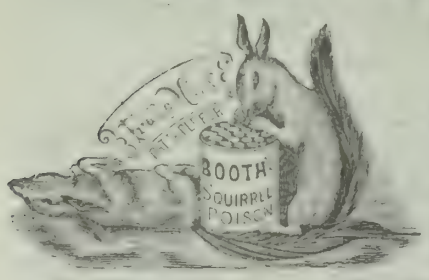
MANUFACTURED BY

THE JUDSON HORSE-NAIL CO.

Office, 402 Front Street, San Francisco.

CHEAPEST. BEST.

BOOTH'S SURE DEATH



To Squirrels, Gophers, Birds, Mice, Etc.

☞ Endorsed by the Grange and all others who have used it

INFALLIBLE SQUIRREL and GOPHER EXTERMINATOR.

STRENGTH INCREASED. PRICE REDUCED.

Put up in 1 lb., 5 lb., and 5 gallon tins. Manufactured by

A. R. BOOTH, Eagle Drug Store,

San Luis Obispo, Cal.

FOR SALE BY ALL WHOLESALE AND RETAIL DEALERS.

NEW STORE AND LARGE STOCK!

AUSTIN BROTHERS,

IMPORTERS OF

HARDWARE, IRON, AND BLACKSMITH SUPPLIES.

Rope, Wire, Belting, Pumps, Pipe and Steam Fittings.

310 and 312 Main Street, Corner of America,

STOCKTON.

Agents Halladay Wind Mills.

To Fish Raisers.

I am now ready to sell Carp which were imported by me from Germany in 1872, in lots to suit. Address

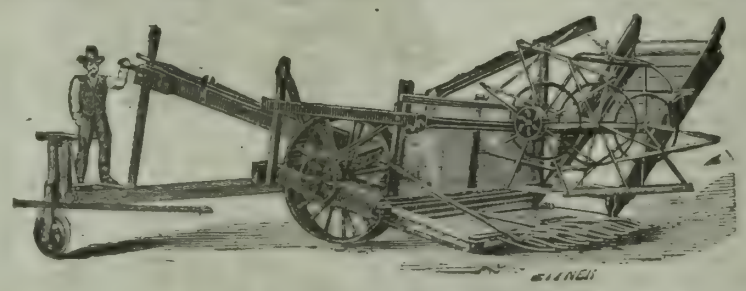
J. A. POPPE, Sonoma, Cal.

MERRILL'S PATENT REIN HOLDER.

This is a sure and certain preventative to keep horses from running away. **Price $2.50.** Address W. P. MERRILL, Florin, Sacramento Co., Cal.

RICHARDS' IMPROVED HEADER.

"The Stockton Chief!"



FOUR DRAPERS.

The Farmers call it the "BOSS HEADER OF CALIFORNIA." Built especially for California Trade

THE OPERATOR CAN STOP THE DRAPER AT WILL. CUT 10 FT. TO 16 FT.

IRON FOUNDERS AND MANUFACTURERS OF

FARMING IMPLEMENTS!

DERRICKS AND FORKS,

Plows, Harrows, Cultivators, Steel Road Scrapers, Etc.

Call at the old Stand or Send for Catalogue and Price List. Liberal Discounts to the trade.

Orders for the "STOCKTON CHIEF" HEADER

Should be forwarded early, as the demand is so great that it is difficult to fill late orders.

MATTESON & WILLIAMSON,

Corner of Main and California S's., Stockton, California.

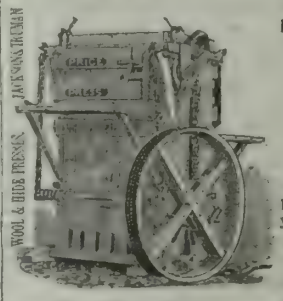
SIMPLE, Durable AND CHEAP.

RAPID, Powerful AND STRONG.

Dederick Top-Feed Perpetual Baling Press in Operation.

THE LATEST IMPROVED

HAY, HIDE and WOOL PRESSES.



The Price Press.

Dederick Over-Circle Mounted Perpetual Presses,
Dederick Reversible Lever Perpetual Presses,
Dederick Belt Perpetual Presses,
Price Hay Presses.
Improved Eagle Presses,
Improved Eclipse Presses.

We make and carry in stock the latest and most improved Presses for Baling Hay, Hides and Wool. Send us your address on a postal card, and we will mail you our new catalogue, giving a full description of all the goods we make. Address

JACKSON & TRUMAN,

625 Sixth Street, - - San Francisco

BREEDERS' DIRECTORY.

Six lines or less in this Directory at 50 cts a line per month.

CATTLE.

WILLIAM NILES, Los Angeles, Cal. Thoroughbred Poultry, Cattle and Hogs. Write for circular.

PETER SAXE & SON, Lick House, S. F. Importers and Breeders for past *eleven* years. Berkshires, "Jerseys," "Short Horns," and all varieties of Sheep, and their grades.

COTATE RANCH BREEDING FARM, Page's Station, S. F. & N. P. R. R., Sonoma County. Wilfred Page, Manager. P. O. address, Petaluma, Cal. Short Horn Bulls and Cows, Spanish Merino Bucks and Ewes, for sale at reasonable figures.

SYLVESTER SCOTT, Cloverdale, Sonoma Co., Cal., Breeder of Recorded Thoroughbred Short Horn Cattle and Spanish Merino Sheep. Jacks and Jennets for sale at reasonable figures.

J. ALEXANDER, Stockton, Cal. Breeder of first-class Dairy Stock and Berkshire Swine. Half and three-quarters Jersey cows and heifers for sale.

ROBT. BECK, San Francisco. Breeder of Thoroughbred Jersey cattle. Herd took Six Premiums of the eleven offered at State Fair, 1881.

GEO. BEMENT, Redwood City, San Mateo Co., Cal. Breeder of Ayrshire Cattle. Several fine young Bulls, Yearlings and Calves For Sale.

R. McENESPY, Chico, Butte Co., Cal. Breeder of Thoroughbred Devons.

HENRY PIERCE, 728 Montgomery Street, S. F. Breeder of Jersey, Guernsey and Ayrshire Cattle.

B. F. FISH, Santa Clara, Cal. Breeder of thoroughbred Jersey Cattle and Black Hawk Comet horses.

HORSES.

J. R. ROSE, Lakeville, Sonoma Co., Cal. Breeder of Thoroughbred Devons, roadster horses and Percheron draft horses.

E. A. SACKRIDER, 325 Eleventh St., Oakland, Cal Importer of Norman-Percheron horses. Horses on hand and for sale at reasonable terms.

SHEEP AND GOATS.

L. U. SHIPPEE, Stockton, Cal. Importer and Breeder of Spanish Merino Sheep. Durham Cattle, Essex and Berkshire Swine. High Graded Rams for sale.

J. B. HOYT, Bird's Landing, Solano Co., Cal. Breeder and Importer of Shropshire Sheep. Rams and Ewes for sale. Also, cross-bred Merino and Shropshire.

E. W. WOOLSEY & SON, Fulton, Sonoma Co., Cal. Importers and Breeders of choice Thoroughbred Spanish Merino Sheep. City office, No. 418 California St., S. F.

POULTRY.

THE PACIFIC COAST THOROUGHBRED POULTRY ASSOCIATION. 1011 Broadway, Oakland, Cal., J. M. Halsted, Manager. All the leading varieties of land and water fowl for sale. Eggs from Plymouth Rocks, Buff and Partridge Cochins, Light and Dark Brahmas, Brown Leghorn, Black Spanish, Houdans, etc., $2 per dozen. Langshans, $3 Bronze Turkeys, $4. Dealers in Incubators, Brooders, Egg Testers, etc. Send stamp for circular.

TOULOUSE GEESE at $15 per pair; $20 per trio; Eggs, $8 per dozen. Bronze Turkeys, $10 per pair; Eggs, $4 per dozen. Address T. D. Morris, Sonoma, Cal., breeder and importer of all kinds of thoroughbred poultry

T. WAITE, Brighton, Sacramento Co., Importer and Breeder of Thoroughbred Poultry. Took Premiums at State Fair, 1880 and 1881, of Leghorns, Brown and White, S S. Hamburg, Plymouth Rocks and Pekin Duck's Eggs $3 per dozen.

H. S. SARGENT, Stockton, Cal. Importer, Breeder and Shipper of Poland China Pigs, and Bronze Turkeys.

L. C. BYCE, Petaluma, Cal. Breeder of Thoroughbred Poultry. Illustrated circular free.

J. M. HALSTED'S NEW INCUBATOR. Price $30. No. 1011 Broadway, Oakland. Send for circular

I. L. DIAS, P. O. Box 242, Petaluma, Cal, agent new Petaluma Incubator. Send for circular and references.

SWINE.

JOHN RIDER, Sacramento, Cal. Breeder of Thoroughbred Berkshire Swine. My stock of Hogs are all recorded in the American Berkshire Record.

TYLER BEACH, San Jose, Cal. Breeder of thoroughbred Berkshires of stock imported by Gov. Stanford

BEES.

J. D. ENAS, Sunnyside, Napa, Cal., Breeds Pure Italian Queen Bees. Comb Foundation.

REMOVED.

MARK SHELDON,

General Agent for the

DAVIS," "HOWE," "HOUSEHOLD," "QUEEN," "SINGER," "SPRINGFIELD," and "STEWART"

Sewing Machines,

And Wholesale Dealer in Needles, Oils, Parts and Attachments for all Machines, removed from 130 Post to

9 & 11 FIRST ST., Near Corner Market, S. F

GILES H. GRAY. JAMES HAVEN.

GRAY & HAVEN,

Attorneys and Counsellers-at-Law,

530 California St., SAN FRANCISCO

Oakland Poultry Yards.

Cor. 17th and Castro Sts., Oakland, Cal.

GEORGE B. BAYLEY,

Importer and Breeder of all the best known and most profitable varieties of Land and Water Fowls.

Brahmas, Cochins, Houdans, Langshans, Leghorns, Polish Hamburgs, Bronze Turkeys,

And the new fowl, AMERICAN SEBRIGHT or EUREKA.

AGENT FOR THE PACIFIC INCUBATOR,

WHICH IS MADE IN THREE SIZES,

No. 1,	Capacity,	550	Eggs,	Price,	$90.
No. 2,	"	250	"	"	65.
No. 3,	"	180	"	"	45

Guaranteed to hatch NINETY PER CENT. of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season. For further particulars send stamp for illustrated circular to GEO. B. BAYLEY, Box 1771, San Francisco.

Duroc, or Red Hogs.

The undersigned are making a specialty of raising this celebrated breed of hogs for breeding purposes. They are gentle, thrifty and of very rapid growth, and better adapted to this climate than any other breed of hogs. We have hogs of this breed now upon our ranch, 11 months old, weighing over 400 lbs. each N. W. Spaulding, U. S. sub-Treasurer, San Francisco, killed one of these hogs Dec. 14, 1881, at the age of 16 months, that weighed 83 lbs. gross, and 584 lbs. dressed.

On Dec. 22, 1881, Messrs Zimmerman, Strouse & Co., of the Bay City market, S. F, killed one weighing 1018 lbs. net when dressed, 3 years and 3 months old. We are prepared now to ship to any part of this State these pigs 6 to 12 weeks of age. For prices and circulars address,

HINCKLEY & GETCHELL,

Laurelles Ranch, Monterey, Cal.

BERKSHIRES A SPECIALTY.

My Berkshires are Thoroughbred, and selected with great care from the best herds of imported stock in the United States and Canada, and for individual merit cane not be excelled. My breeding stock are recorded in the "American Berkshire Record," where none but pure bred Hogs are admitted. Pigs sold at reasonable rates. Correspondence solicited.

JOHN RIDER,

18th and A Streets, Sacramento City, Cal.

MAKE HENS LAY.

An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps. I. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

STANDARD POULTRY.

American Sebrights, Langshans, Plymouth Rocks, and Brown Leghorns. Choice Birds for sale in pairs, trios, or breeding pens Eggs for hatching in season. Satisfaction guaranteed. Write for prices. Address,

O. J. ALBEE, Santa Clara, Cal

ITALIAN SHEEP WASH.

EXTRACT OF TOBACCO.

Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

SCAB OF THE SHEEP.

The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

For particulars apply to CHAS. DUISENBERG & CO Sole Agents, 314 Sacramento St., San Francisco.

LITTLE'S SHEEP DIP.

Price Reduced

TO $1.25 PER GALLON.

Twenty gallons of fluid mixed with cold water will make 1,200 gallons Dip.

Apply to FALKNER, BELL & CO., San Francisco

EXTRA QUALITY

RUBBER HOSE,

BELTING and PACKING, CRACK PROOF BOOTS.

GOODYEAR RUBBER CO.,

R. H. PEASE, Jr., S. M. RUNYON, } Agents.

Nos. 577 and 579 Market Street.

IMPROVED

EGG FOOD

It Cures all Diseases of Poultry, Keeps Hens Healthy and Makes them Lay.

1-lb. Boxes, 40 Cts. 3-lb. Boxes, $1.
10-lb. Boxes, $2 50. 25-lb. Boxes, $5.

B. F. WELLINGTON, Prop'r.

Also, Importer and Dealer in Seeds.

425 Washington St., San Francisco.

SHORT HORNS FOR SALE.

I have for sale at my ranch, near Oroville, Butte county,

12 Young Short Horn Bulls,

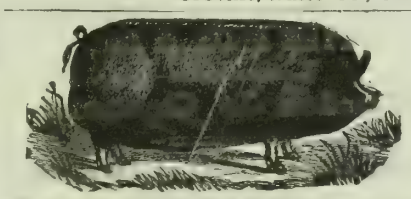
From one to two years old. Price from $100 to $200 each.

ALSO

50 Short Horn Cows and Heifers.

All these cattle are red Durham—all thoroughbred. They are offered at private sale to those wishing to secure good stock. MOSES WICK.

Oroville, Butte Co., Cal.



We have for sale at our farm at Mountain View, thoroughbred

BERKSHIRE PIGS

From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880. Pigs from Imported Boar and Sow, $25 each. From Imported Boar and Thoroughbred Sow, $10 to $20. Our Imported Pigs are as nice Pigs as there are in the State. Address JACKSON & TRUMAN, S. F.

PRICES REDUCED

TO SUIT THE TIMES.

In order to make room for young growing stock, I offer for sale 600 fine thoroughbred fowls, none over one year old. White and Brown Leghorns and P. Rocks, $2 each, or $20 per doz n. Eggs from above varieties $1 50 per setting of 13, or two settings for $2 50. Pekin duck eggs, $1 for 9. Langshans, Brahmas, Black Leghorns and Rouen Duck eggs, $3 per setting.

My Birds are raised on large farms, where they have unlimited range, giving them a

VIGOROUS CONSTITUTION,

Which is very desirable in any Breeding Stock.

For further information send 3-cent stamp for new circular and price list, to

R. G. HEAD, Napa, Cal.

POULTRY.

Hogs & Cattle.

Langshans, Brahmas, Cochins, Leghorns, Houdans, Plymouth Rocks, W. F. Black Spanish, Guinea Fowls. Aylesbury, Rouen and Pekin DUCKS. Bronze and White Holland TURKEYS. Peacocks, Etc. Also, Eggs for Hatching.

Dish-Faced Berkshire Pigs, Poland China Pigs, Jersey Cattle, etc.

PACIFIC COAST POULTRY AND STOCK BOOK.

New Edition, over 100 pages, Handsomely Illustrated Price by mail, 50 cents.

Stock or Eggs for Hatching guaranteed true to name, and to arrive safely. For further information please write, enclosing stamp. Circular and price list sent on application. Address

WILLIAM NILES,

Los Angeles, Cal.

Moore's Prepared

SQUIRREL

POISON.

The most successful Poison in use for Squirrel Killing

C. E. WILLIAMS & CO., Proprietors,

STOCKTON, CAL.

Moore's Sulphur Dip; Safe, Sure, and Cheap preparation for the cure of Scab in Sheep.

GRANGERS' BANK

Of California,

SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,00

In 10,000 Shares of $100 each.

Capital Paid up in Gold Coin, $531,200.

Reserve Fund and Paid up Stock, 21,178.

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CURRENT ACCOUNTS are opened and conducted in the usual way, bank books balanced up and statements of accounts rendered every month

LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

GOLD and SILVER deposits received

CERTIFICATES of DEPOSIT issued payable on mand.

TERM DEPOSITS are received and interest allowed as follows: 4% per annum if left for 6 months; 5% per annum if left for 12 months.

BILLS OF EXCHANGE of the Atlantic States bought and sold.

ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1882.

Lands for Sale and to Let.

FARMING LAND

For sale in large or small tracts, on easy terms, in the best parts of the State

McAFEE BROTHERS,

328 Montgomery Street, S. F.

Good Crops Every Season Without Irrigation.

Free by mail, specimen number of *"The California Real Estate Exchange and Mart,"* full of reliable information on climate, productions, etc., of

SANTA CRUZ COUNTY.

Address *"Exchange & Mart,"* Santa Cruz, Cal.

Is the Best Pump in the World. Another New Improvement is Lewis' Patent Spray Attachment.

Can change from solid stream to spray instantly. Regular retail price, $6. Weight, 4½ lbs. Length, 32 inches.

FOR SALE BY JOHN H. WHEELER, 111 Leidesdorff St., S. F.

P. S. A sample can be seen at this office.

Calvert's Carbolic

SHEEP WASH.

$2 per Gallon.

After dipping the Sheep, is useful for preserving wet hides, destroying the vine pest, and for wheat dressings and disinfecting purposes, etc. T. W. JACKSON. S. F., Sole Agent for Pacific Coast.

The American Driven

WELL WATER SUPPLY SYSTEM

FOR MINING, IRRIGATION, MECHANICAL DOMESTIC & MUNICIPAL PURPOSES

Send for Circulars.

BABCOCK & CO.,

40 Merchants' Exchange San Francisco, Cal.

YOUR NAME

On 50 large size CARDS. Remembrance, Sentiment, Hand Bouquet, &c. No 2 alike, 10c. 11 pks. $1. Please send 20c. for Album of 100 samples and list of 200 elegant premiums and *Reduced Price List.* 20 fine Gilt Bevel Edge Cards, turned corner, 10c.

Your Name in this lettering *Minnie B. Rose*

Agents make 50 per cent. We offer the largest line of Cards the best Premiums and the lowest prices. We fill all orders promptly and guarantee satisfaction. Amateur Printers supplied with blank cards at wholesale prices. Established 1870. NORTHFORD CARD WORKS, Northford, Conn.

YOSEMITE HOUSE.

MAIN ST., STOCKTON, CAL. FIRST-CLASS HOUSE

JAMES GAVIN, Proprietor.

This House is the Leading Hotel of the City, containing all the modern improvements. General Ticket Office for the Big Trees, Yosemite Valley, Bodie, and General Stage Office for all the Southern Mountain Towns. The Yosemite Coach will convey guests from the boats and all trains, free of charge

SAN FRANCISCO MARKET REPORT.

(Continued from Page 417.)

bid, $1 71¼ asked; July, $1.72½ asked; August, $1.70 bid, $1 72½ asked; Stockton, $1 67½ bid, $1 70 asked; September, $1.70 bid; October, $1.71¼ bid; No. 2 White, August, $1.65 bid, $1 67 asked; No. 1 Amber, October, $1.67½ bid; extra choice Sonora, Stockton, August, $1.67½ bid; No. 1 White, seller 1882, $1.65 bid, $1 68 asked. On the Grain Exchange business was very lively, sales being 1,800 tons, as follows: 300 No 2, August, $1 66; 200 do, $1.66¼; 600 September, $1 66¼; 500 October, $1 66; 100 November, $1 65¾; 100, seller 1882, $1.62½.

WOOL—Large amounts of Wool are arriving, and prices are shading up as the choicer clips arrive. Prices are shown in our list. The trade is quiet, as buyers are rather offish.

Domestic Produce.

WHOLESALE.

Wednesday m., May 24, 1882.

BEANS & PEAS.	
Bayo, ctl	2 75 @3 25
Butter	3 75 @4 25
Castor	3 50 @4 00
Pea	4 00 @4 25
Red	2 50 @2 80
Pink	2 50 @2 80
Large White	3 50 @3 75
Small White	4 00 @4 25
Lima	4 00 @4 50
Field Peas, b'lk eye	1 5 @1 75
do, green	2 60 @2 25
BROOM CORN.	
Southern	3 @ 3½
Northern	4 @ 6
CHICCORY.	
California	4 @ 4½
German	6½@ 7
DAIRY PRODUCE, ETC.	
BUTTER.	
Cal. Fresh Roll, lb.	30 @ 31
do Fancy Brands	— @ 32½
Pickle Roll	— @ —
Firkin, new	28 @ 31
Eastern	18 @ 20
New York	— @ —
CHEESE.	
Cheese, Cal., lb	11½@ 13
EGGS.	
Cal. Fresh, doz	23 @ 25
Ducks	— @ —
Oregon	— @ —
Eastern, by expr's	— @ —
Pickled here	— @ —
Utah	— @ —
FEED.	
Bran, ton	15 50 @16 00
Corn Meal	@38 00
Hay	10 00 @15 00
Middlings	22 00 @23 00
Oil Cake Meal	@27 50
Straw, bale	62½@ 70
FLOUR.	
Extra, City Mills	5 25 @5 50
do, Co'ntry Mills	4 75 @5 00
do, Oregon	4 75 @5 12½
do, Walla Walla	4 50 @5 00
Superfine	3 50 @4 25
FRESH MEAT.	
Beef, 1st qual'y, lb	7½@ 8
Second	6½@ 7
Third	5½@ 6
Mutton	4 @ 5
Spring Lamb	6 @ 7
Pork, undressed	6½@ 7½
Dressed	9½@ 10
Veal	7½@ 8
Milk Calves	7½@ 8
do, choice	— @ 10
GRAIN, ETC.	
Barley, feed, ctl	1 70 @1 74
do, Brewing	1 80 @1 90
Chevalier	— @1 70
Buckwheat	1 50 @1 75
Corn, White	— @ —
Yellow	1 72½@1 75
Small Round	— @1 75
Oats	1 30 @1 67½
Milling	2 00 @2 10
Rye	2 25 @2 50
Wheat, No. 1	1 70 @1 72½
do, No. 2	1 62½@1 65
do, No. 3	1 45 @1 50
Choice Milling	— @1 72½
HIDES.	
Hides, dry	19 @ 19½
Wet salted	9½@ 11
HONEY, ETC.	
Beeswax, lb	23 @ 25
Honey in comb	14 @ 18
Extracted, light	9 @ 10
do, dark	7 @ 8
HOPS.	
Oregon	20 @ 21
California, new	22 @ 25
Wash. Ter	19 @ 20
Old Hops	— @ —
NUTS—Jobbing.	
Walnuts, Cal	10 @ 11
do, Chile	7½@ 8
Almonds, hd shl lb	8 @ 10
Soft shell	14 @ 15

Brazil	10 @ 11
Pecans	13 @ 15
Peanuts	[illegible]
Filberts	14 @ 15
ONIONS.	
Red	— @ —
Silverskin	75 @ 80
do, new	90 @1 00
Oregon	— @ —
POTATOES.	
New, lb	2 @ 3
Early Rose	2 30 @2 60
Petaluma, ctl	— @ —
Tomales	— @ —
Humboldt	— @
" Kidney	— @ —
" Peachblow	— @ —
Jersey Blue	— @ —
Cuffey Cove	— @ —
River, red	— @ —
Chile	— @ —
do, Oregon	1 75 @1 90
Oregon Peerless	1 75 @1 90
Salt Lake	— @ —
Sweet	— @ —
POULTRY & GAME.	
Hens, doz	5 50 @ 7 50
Roosters	6 00 @11 00
Broilers	4 00 @ 9 00
Ducks, tame, doz	6 50 @ 7 50
Geese, pair	1 25 @1 50
do, young	2 50 @3 00
Wild Gray, doz.	— @3 00
White do	50 @1 00
Turkeys	15 @ 18
do, Dressed	— @ —
Turkey Feathers, tail and wing, lb.	10 @ 20
Snipe, Eng	1 75 @2 00
do, Common	50 @ 75
Quail, doz	75 @ 80
Rabbits	1 00 @1 25
Hare	1 50 @1 75
Venison	5 @ 7
PROVISIONS.	
Cal. Bacon, extra clear, lb	14½@ 15
Medium	14½@ 15
Light	[illegible] @ 16
Lard	13 @ 16
Cal. Smoked Beef	11½@ 12½
Shoulders	9½@ 10½
Hams, Cal	13½@ 14
do, Eastern	16 @ 17
SEEDS.	
Alfalfa	14 @ 16
do Chile	— @ —
Canary	3½ @ 4
Clover, Red	14 @ 15
White	45 @ 50
Cotton	— @ 20
Flaxseed	2½@ 3
Hemp	— @ 5
Italian Rye Grass	25 @ —
Perennial	25 @ —
Millet, German	10 @ 12
do, Common	7 @ 10
Mustard, White	1½@ 2
Brown	2½@ 3
Rape	2½@ 2¾
Ky Blue Grass	20 @ 25
2d quality	16 @ 18
Sweet V Grass	— @ 75
Orchard	20 @ 25
Red Top	— @ 15
Hungarian	8 @ 10
Lawn	30 @ 40
Mesquit	10 @ 12½
Timothy	9 @ 10
TALLOW.	
Crude, lb	7 @ 7½
Refined	10½@ 11
WOOL, ETC.	
SPRING—1882.	
San Joaquin, free	20 @ 23
do, fair	18 @ 19
do, dusty	14 @ 17
Southern Coast	15 @ 22
Stanislaus & Tuolumne	23 @ 26
Sonoma & Mendocino	26 @ 28

Fruits and Vegetables.

[WHOLESALE.]

Wednesday m., May 17, 1882.

FRUIT MARKET.	
Apples, bx	2 00 @ 3 50
Bananas, bnch	2 50 @ 4 00
Cherries, box	— 40 @ 1 25
Cocoanuts, 100	6 00 @ 7 00
Cranberries, bbl	12 50 @14 00
Gooseberries	5 @ 8
Limes, Mex	8 00 @10 00
do, Cal, box	2 00 @ 8 00
Lemons, Cal, bx	1 75 @ 2 50
Sicily, box	6 50 @ 7 50
Australian	— — @ — —
Oranges, Cal, bx	3 50 @ 4 50
do, Tahiti M	— @25 00
do, Mexican	15 00 @17 00
do, Loreto	— — @— —
Pears, bx	— — @ —
Pineapples, doz	8 00 @ 3 00
Strawb'r's, chst.	4 50 @ 8 00
DRIED FRUIT.	
Apples, sliced, lb	— @— 10
do, evaporated	— — @— 12½
do, quartered	— 6 @— 6½
Apricots	— 21 @— 22
Blackberries	— 14 @— 16
Citron	— 28 @— 30
Dates	— 9 @— 10
Figs, pressed	— 4 @— 7
do, loose	— 3½@— 4
Nectarines	— 14 @— 15
Peaches	— 7 @— 9
do pared	— 18 @— 20
Pears, sliced	— 9 @— 9½
do whole	— 7 @— 8

Plums	— 4 @— 6
Pitted	— 11 @— 12½
Prunes	— 9 @ 10
Raisins, Cal, bx.	— — @ 2 50
do, Halves	— — @ 2 75
do, Quarters	— — @ 3 00
Eighths	— — @ 3 25
Zante Currants	— 8 @ 10
VEGETABLES.	
Artichokes, doz.	— — @— 50
Asparagus, box	75 @ 1 00
Beets, ctl	— @ 75
Cabbage, 100 lbs	1 25 @ 1 40
Carrots, sk	— 50 @— 60
Cauliflower, doz	— 50 @— 60
Cucumbers, doz.	— 50 @ 1 25
Garlic, lb	— — @— 1½
Lettuce, doz	— 10 @— —
Mushrooms, bx	— — @ — —
Okra, dry, lb	— — @— 50
Peas, green, lb	— — @— 1½
do, sweet	— 1½ @ 2
Parsnips, lb	— — @— [illegible]
Peppers	— 20 @— 25
Rhubarb, bx	— 65 @ 1 00
Squash, Marrow fat, ton	— — @50 00
String Beans	— 7 @— 8
do, wax	— 6 @— 7
Summer Squash, box	1 25 @ 1 50
Tomatoes	— 10 @— 12½
Turnips, ctl	— 75 @ 1 00

Bags and Bagging.

[JOBBING PRICES.]

Wednesday m., May 24, 1882.

Eng Standrd Wheat	8¾@ 9
Cal Manufacture	
Hand Sewed, 22x36	8¾@ 9
20x36	8½@ 8¾
23x40	12 @13
24x40	12½@13½
Machine Swd 22x36	8½@ 9
Flour Sks, halves	9½@10½
Quarters	6 @ 6½
Eighths	4½@ 4¾
Hessian, 60 inch	— @12

45 inch	[illegible]
40 inch	8½@ 8¾
Wool Sks Hand Swd	
3½ lb	— @47
4 lb do	52½@55
Machine Sewed	— @49½
Standard Gunnies	13½@14
Bean Bags	6½@ 7
Twine, Detrick's A	32½@35
" " AA	35 @37

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JAS. P. HULME, Late Miller & Co. — JACKSON HART.

HULME & HART,

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Orders for Goods not in our line will be carefully purchased by experienced buyers. Ranch Supplies and the best Sacks and Twine, Tobacco, Sheep Dips, etc., furnished to customers. Doing business exclusively on commission. Liberal advances made on consignments at low rates of interest. Personal attention given all consignments. We are agents for the

PARADISE MILLS FLOUR.

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Green and Dried Fruits,

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"THE OLDEST HOUSE!"

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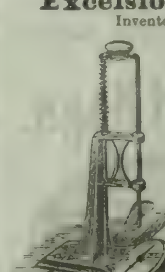
References.—Tradesmen's National Bank, N. Y.; Ellwanger & Barry, Rochester, N. Y.; C. W. Reed; Sacramento, Cal.; A. Lusk & Co., San Francisco, Cal.

Excelsior Fruit Pitter.

Invented by A. Donatella.



This machine recommends itself by the following good qualities. Rapidity of work, one operator doing the work of four with knives. It cleans the pit perfectly, wastes no fruit, and leaves the plum in two equal parts. It is easily operated. Makes no litter, the pits dropping in a vessel under the table. The plum remaining between thumb and finger can be placed directly on the riddle for the Dryer. Simplicity of construction. Cannot get out of order. Will work equally well on green or very ripe Plums. Prunes, Apricots or Nectarines pitted with this machine dry more evenly and look nicer than when chipped off with a knife.

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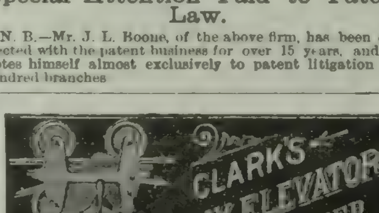

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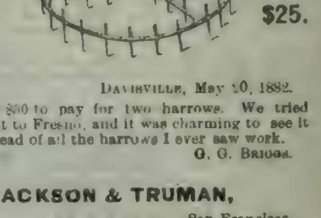

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To Threshers.

It is light, can be attached to any thresher; $5.00 per year will keep it in repair. By its use 500 bushels more per day can be threshed and cleaned, saving to the farmer enough to pay his threshing bills, also putting the grain into merchantable condition, saving time lost in reopening sacks and cleaning over. Farmers and Threshers will please call and see for themselves, at No. 128, 15th street, between C and D streets, Sacramento. Also, my Feeder and Elevator Attachment, so well and favorably known as to need no comment.

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SANITARIUM.

This popular and healthful summer and winter resort for families, pleasure seekers and invalids, is situated in

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Seven miles south of Lakeport, four miles of Kelseyville, and in sight of Clear Lake, at an altitude of 1700 feet, and is **Sheltered from the Chilling Coast Winds and Fogs** by mountains 1600 feet in hight, which for

Grandeur and Beauty of Scenery are Unsurpassed on the Pacific Coast,

While the Beneficial Effects of its Mineral Waters are equal to any in the United States or Europe.

MAGIC SPRING.

Analyzed by Prof. W. B. Rising, University of California.

Temperature	8.
	Grains per U. S. Gallon.
Chloride of Sodium	1.290
Bicarbonate of Potash	0.544
Bicarbonate of Soda	21.763
Bicarbonate of Lime	50 411
Bicarbonate of Magnesia	70.243
Bicarbonate of Iron	0.973
Bicarbonate of Manganese	trace
Silica	7 398
Alumina	0.169
Organic Matter	trace
Free Carbonic Acid	74 462
Total	237.262

W. B. Rising, Berkeley, April 3, 1882.

Dr. C. M. Bates (formerly of San Francisco), having become sole proprietor, by purchase and lease, of these justly celebrated Springs, will devote all necessary time and attention to persons requiring the use of the waters.

Good Hotel and Cottage Accommodations.
Carriages, Buggies and Saddle Horses Furnished at Reasonable Rates.

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Daily excursions are made to Borax Lake, Sulphur Banks, and other points of interest. A new trail leads to the summit of Uncle Sam, 4,400 ft above the sea.

Ample provisions are made for the entertainment of the patrons of this popular resort. The Hotel and the cottages are furnished with comfort and taste. Among the diversions of the place are boating and sailing—yacht and steamer, bowling, billiards, croquet, equestrian exercise, fishing and hunting, and a beautiful pavilion for music and dancing; in short, nothing is lacking for the enjoyment of those who seek rest and recuperation or interesting and healthful recreation beneath the shady oaks and by the ever beautiful lake, in a climate which, for health and for comfort, is acknowledged to be unsurpassed, if, indeed, equaled in the world. Billiards, croquet, ten-pins, and baths, free.

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Tourists can find at the Calaveras Group larger, taller and a greater number of Big Trees than can be found in all other groves of California combined.

THE MAMMOTH GROVE HOTEL is situated right in the Calaveras Grove. This grove contains 93 of these giants of the forest.

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Is six miles distant, and contains 1,380 Big Trees of immense size. This grove has been inaccessible to visitors until quite recently. A good horseback road now connects the two groves. There is the finest trout fishing and hunting in the immediate vicinity.

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Three Different Routes to the Springs,

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LEAVING SAN FRANCISCO AT 8 A. M.

Fare will not exceed TWELVE Dollars either way. Daily Mail via LAKEPORT, Semi-weekly mail via WILLIAMS. Post Office, Express Office and Telegraph Office here all the year through.

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This Celebrated Resort for PLEASURE and HEALTH will be opened for the reception of guests

On and after April 15th.

Stage connections made at LOS GATOS with MORNING and AFTERNOON trains of the Narrow-gauge Railroad.

THROUGH TICKETS

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ROOMS CAN BE SECURED

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Our Large Warehouse at 31 Market,

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Of all the Latest and Most Improved Patterns, including

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Just Arrived by rail, a Large Shipment of

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For Straw or Wood. The new device,

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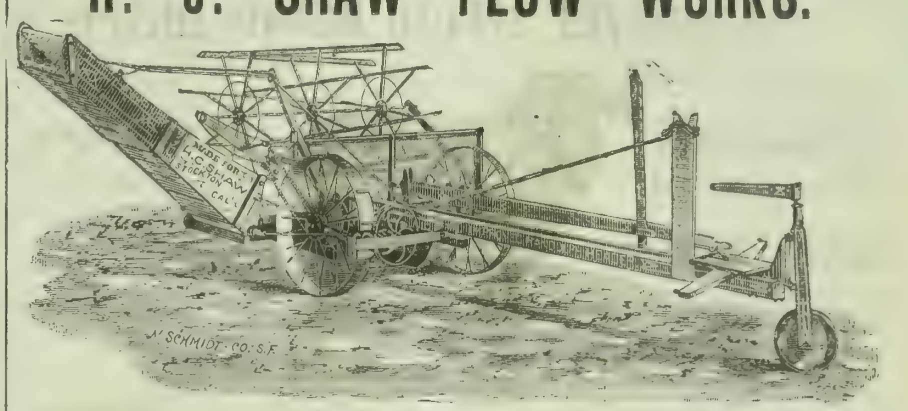

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Steel Laid and Hand Made.

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Corner of Front and M Streets, Sacramento.

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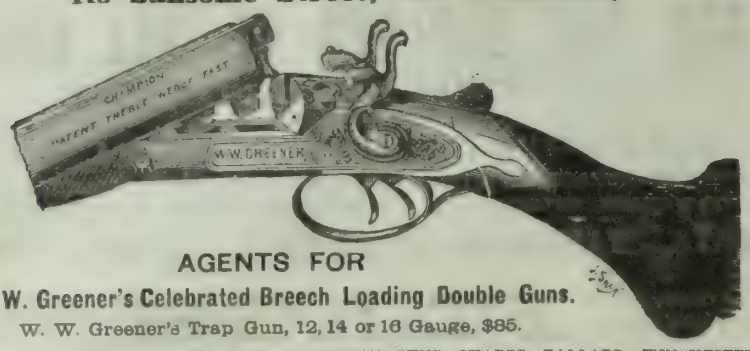

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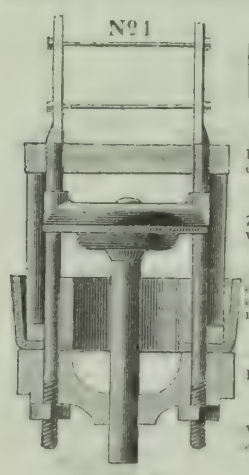

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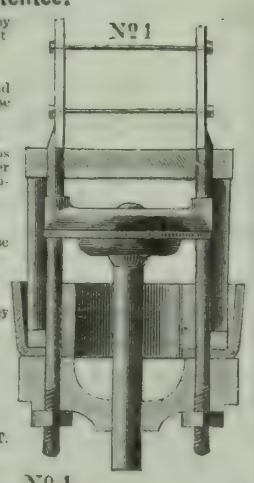

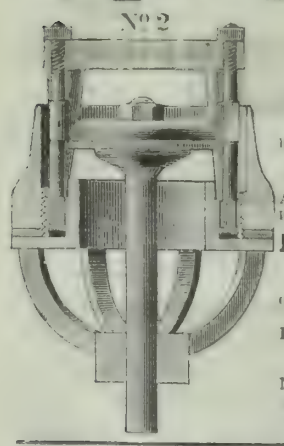

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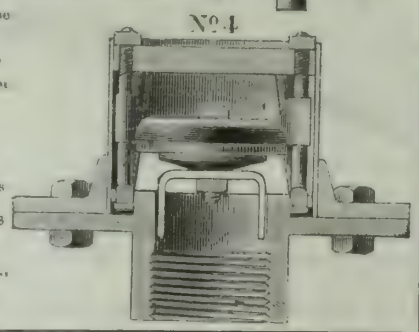

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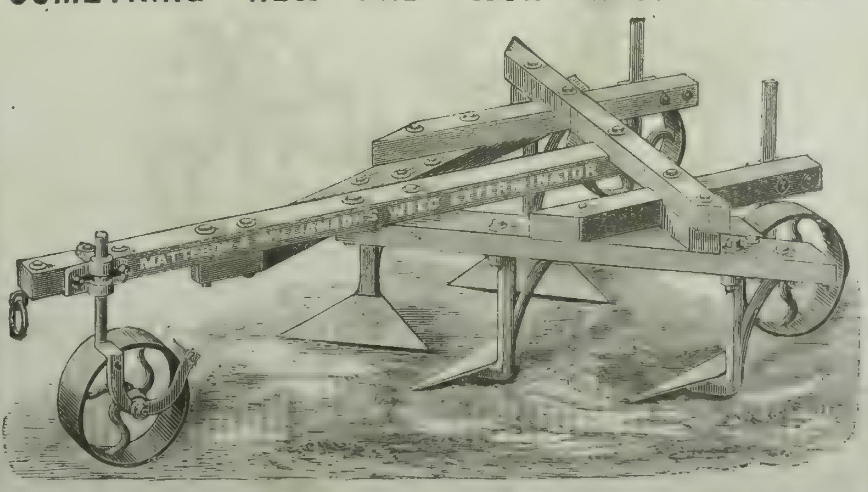

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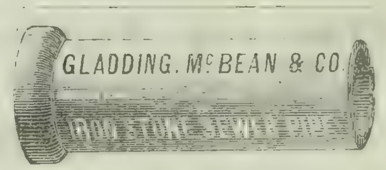

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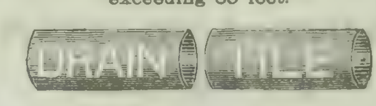

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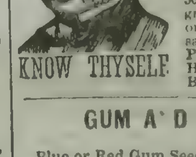
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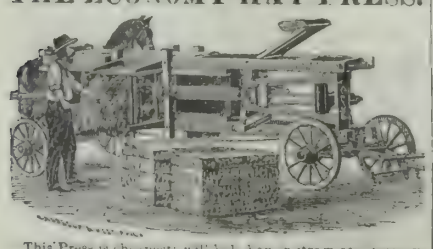

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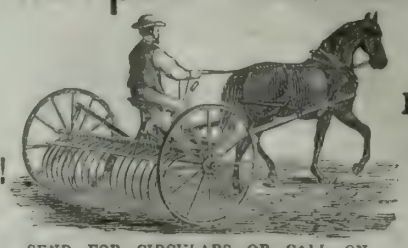

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32-Page Edition.] TOURISTS' EDITION. [With Map of Routes.

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Bear River.

The scene herewith given will remind many a pioneer, who entered this State by way of the Henness Pass route, of the then beautiful river whose head waters they encountered near the summit, and whose increased volume they again met with at the crossing of Steep Hollow creek, near Cold Springs. Bear river was then a beautiful stream, clear and limpid, coursing along a comparatively shallow canyon, often widening out into considerable valleys, covered with a luxurious growth of trees, underbrush and grass. It is one of these localities that our artist has chosen for his subject.

But men came here to mine—to dig from the pebbly beds and many banks of her rivers the glittering gold of California—with their picks and shovels, with their rockers and sluices, the rivers soon lost their charm. When nothing but beauty and loveliness was found, muddy waters and scarred banks began to appear. As time wore on, and the rivers and their banks became exhausted, the intervening hills were attacked, washed into the rivers and from thence, by the floods of winter, carried to the quiet valleys below. The Little Giant, with its tremendous power, loosened the foundations of the hills, and sand rock and blue gravel cemented together, were washed down to destroy the valley farms and desolate the homes of a prosperous people.

SCENE NEAR THE HEADWATERS OF BEAR RIVER.

In view of the ruin of the river by the miners it is interesting to read an account written long before the beginning of mining. Edwin Bryant, in 1847, wrote his book "What I Saw in California," giving an account of Bear river in its best estate. He said: "Bear river, where we struck and forded it, is about 50 yards in breadth, with a rapid current of limpid water, foaming over a bed so unequal and rocky that it was difficult, if not dangerous, to the limbs of our mules while fording it. The margin of the stream is thinly timbered with cottonwood and small willows. The fertile bottom, as we proceeded down it, varying in width from a mile and a half to one-eighths of a mile, is well covered with grass of an excellent quality, and I noticed in addition to the wild geranium and several other flowers in bloom, the wild flax, sometimes covering a half acre or more with its modest blue blossoms. I also observed strawberry vines among the grass in the Bear river bottom."

This picture of a lovely river flowing through a fertile field as Bear river was in the early days, is in marked contrast to the desolation which now marks its course.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

From the Valley to the Coast.

The Story of a Summer Ramble.

Written for the RURAL PRESS by G. T. THISSELL.

Without ceremony, except to shake hands and say good morning, I will tell the story of our ramblings.

After a hard summer's toil, we bid adieu to the hot plains of the Sacramento valley, and hied ourselves to the cool and balmy breezes of Mendocino and Lake counties. Our party consisted of our better half, two loving daughters, two sons, and Mr. Ganel; also three hounds and a setter, with the ever indispensable John to aid in preparing the sumac. First let me tell you of our outfit: Two sacks of shot, 1,500 cartridges, 1,000 percussion caps, two kegs of powder, three repeating rifles, three shot-guns, and all other accoutrements for a three months' tramp. We piled bedding and a thousand and one other articles into two small spring wagons. After stowing away our better half and daughters among the boxes, we seated our voluptuous form by the side of one hind wheel. In the other wagon was placed the hounds (for you know hounds can't walk on a trip like this). Then we seated John Chinaman by the side of the other hounds, the boys occupying the front seat. Our outfit was complete. On the 13th of August we hoisted the American flag, left our beautiful home and all its comforts, and took up our Gypsies, rambling at the rate of six knots per hour, rolling up the dust like a cloud; filling our eyes and covering us with dust till we looked more like ash-cats than anything else.

The first place of interest was Davisville. It is situated near Putah river. The climate is dry and warm: fruit of all kinds does well. The Central Pacific railroad passes through Davisville. From here our route lay along the bank of Putah river. Though dry in the summer in many places, during the rainy season it is a large stream. Our next place of note was Winters, also in a beautiful location on the bank of Putah river. The land here is rich and fertile, well adapted to the production of apricots and peaches. Winters is a desirable place to locate. Land can be had at $85 to $100 per acre. The Pleasant Valley & Clear Lake railroad passes through Winters. The climate is very even; the atmosphere is light and dry.

From Winters we wound our way through the beautiful farms to the low, rolling hills. Leaving Pleasant valley two or three miles south, we entered

Putah River Canyon

Here the scenery was grand. Every turn in the road presented some new aspect of interest, filling our hearts with joy. For several miles the scenery is wild and romantic. In this canyon are several mineral springs. The efficacy of these springs is wonderful, having cured, it is said, rheumatism and the chills and fever in a few days. Here is also one of the best water powers on the coast. In 1868, Mr. Seely and sons erected a fine flouring mill. In 1872 it was washed away, and has not been rebuilt. Here also is the famous "eagle rock." No one can pass through this gorge without admiration. At every turn in the road the pass seems to be coming to a sudden close. On the right the cliffs overhang the narrow track that has been cut through the solid rock. One mile farther and we are at the remains of the old toll road, which for years was a nuisance to Yo'o and Napa counties. There is now a fine county road the entire length of the canyon. Two miles more and we are at the "devil's gate." At this point the river has forced its way through the solid granite, while on either side the rocks are piled hundreds of feet high. Here in the gorge, on a large rock, is to be read: "Corner-stone of Yolo, Napa, and Solano counties."

After five miles of dust and rocks we strike camp, and, having pitched our tents, we prepare to get our first meal as the wandering Gypsies. Imagine our surprise to find ourselves lacking a pot. Having borrowed one, John was all right. Soon we gathered around the linen as it was spread on the rocks and sand. To say we did justice to this meal, would convey no idea. Dear editor, did you ever camp out with your grub set on the ground, in an old dusty corral, the wind blowing at the rate of 15 miles per hour, sand and gravel flying, holding your hat on with one hand, trying to appease nature with the other? If not, you know but little about it. But just let me tell you it is splendid for a change. Being tired with the toils of the day, we soon turned in, with our heads at an elevation of about 45°. During the night we awoke and found our extremities extending at least two ft. from beneath the tent. We always had a dislike for early rising. For once we broke over old habits.

On August 14th, by six o'clock, we were on the road. There is but little farming land here. The canyon is very narrow. Four miles brings us to "Goslin's grade." Passing through low, rolling hills for two miles, we enter

Berryessa Valley.

Three miles on is Monticello. It is situated in Berryessa valley, two miles from Putah river. Monticello has a fine location, surrounded with rich and fertile land. It is proud of two stores, two hotels, a blacksmith shop, livery stable, and three dead-falls in the shape of saloons, which are the curse of all towns. The land here is of a sandy nature, and very productive of wheat and barley. Fruit also does well. Peaches, apricots and plums are fine. Berryessa valley is 16 miles long by four miles wide. It is one of the garden spots of California. Land sells here at $40 and $60 per acre. Land monoply has killed the enterprise of the valley. There is great need of a railroad.

We drove 16 miles and camped on Knoxville creek. The water is cold and excellent. There is very little farming land on this creek. The mountains are high and rough.

To-day Bob met with the loss of his sombrero; it blew in the camp-fire and was entirely ruined. We found plenty of small game all along the road. On August 15th we were astir at five o'clock, and trolled up Knoxville creek six miles; passed Knoxville at 12 o'clock. The mines are only working about 60 men—one-half their usual force. The air here is pure, when out of reach of the mines. Its elevation is 1,200 ft. above the level of the sea. We drove one mile from town, and camped in the broiling sun for dinner. We then left the main road and drove four miles. Southwest of Knoxville we killed a fine deer. The mountains here are all covered with chaparral. On August 16th the cook called us at four o'clock. We started off for a hunt and killed two fine bucks. This is a beautiful little valley, with about 400 acres of farming land. The land is thin and water poor. This ranch is now used for a stock ranch. We took a spin around this evening, and found no deer, but lots of fun.

On the morning of August 17th there was not a cloud in the horizon; the sun rose bright and clear. We breakfasted at six o'clock. No deer this morning. Footsore and tired. Very warm at 10 o'clock. We left at 12 o'clock for parts unknown, and finally returned to the main road. We passed the Manhattan mines, four miles from Knoxville. The mines are now shut down. Up grade we went three miles, with the road very rough. The land is awful poor, and not a living creature to be seen—no, not even a lizard; nothing but tar-weed and rocks. Our girls wanted to turn back, and our better half looked mighty tired. The hounds and John Chinaman were just about roasted. At three o'clock we camped in

Huntington Valley.

This is a beautiful place, with cold water and fine shade. We stopped over August 18th, killed a fine buck, took a spin around in the evening, started eight deer, made a water-haul, and turned in at nine o'clock.

Sunday, August 19th, everything quiet; all hands asleep. North wind and quite warm. In the evening Mr. Abby, of Winters, came up and camped. On Monday morning all hands were off for a hunt, with six repeating rifles, five hounds and two curs. We left the main road five miles and went to Jericho, killed one deer—shot him seven times. The fore-quarters were all dog meat, and the hind-quarters, too. This was the hottest day of the season at Lower Lake; mercury 106°. We killed another deer this evening. August 21st we pulled up camp at eight o'clock, and set out over a rough road. Huntington valley is a small valley, two miles wide by four miles long. The land is rich but rather low. It is a fine place for hogs; the hills are covered with a low, scrubby oak, loaded with acorns—there are thousands and tens of thousands of bushels of them. Fruit also does well; apples, pears and plums. There is but little attention paid to the cultivation of fruit; the orchards are badly neglected. No fruit pests have made their appearance in this valley. The climate is excellent. There is one thing we have noticed all along the road, at every house there are from five to 10 children, all stout and hearty, and just about as many dogs. The reason for this is, that it is a sheep country. The children herd the sheep through the day and the dogs guard them by night.

We went up a heavy grade to-day and passed Cape Horn at nine o'clock; then down grade five miles. We bursted the front axle at two o'clock—the king-bolt gave way. We arrived at

Lower Lake

Hungry, dusty and tired; the hounds were about gone in. The Mongolian's lip was hanging down like a pound of liver. "No good campy. Pay me money, me go back." Not one pound of bacon, cheese or potatoes to be had. The land here is second grade. The timber is large but scrubby. We got a few peaches here; they were like the darkey's oysters—better than they looked. No attention is paid to the cultivation of fruits. The farms all around here are in a dilapidated condition. They need the iron horse and Gabriel to blow his horn to wake them from their lethargy. They are at least 10 years behind the times. We drove three miles and camped. The road is rough and rocky. There was no farming land at this camping place. On August 22d, at 5:30 o'clock, we were in motion, for we were to visit the

Howard Springs,

Distant five miles, over a rough and hilly road. There was magnificent scenery; timber, pine, oak and cedar. The springs are located between high hills. It was hot and sultry, with very little shade, and but few campers on the ground. There was no good fresh water. We took a bird's-eye view of the Howards, and left for the Bonanza springs, distant two miles. We arrived at the Bonanza, badly sold—not a camper on the ground; even the proprietor had left. There was not a pound of feed to be had at these springs. We took our horses back to the Howards, and fed tar-weed and squirrel grass. The Bonanzas are well elevated, with good cold water. The air is pure and cool. The mountains are covered with beautiful ferns. The soil is loose and red. There is no farming land in this vicinity.

On Aug. 23d, we visited the Howards Springs. The accommodations for campers are excellent, with the exception of good shade. There is a good hotel, a two-story lodging-house and 15 cabins, 10x12 ft. These are rented to campers at reasonable rates. There are 12 springs, named as follows: Borax, Lukewarm, Alum, Sodium, Cold, Silica, Warm; one fountain, not named, boiling magnesia, cold magnesia, six feet apart; five fountains, combination, 40 ft. from magnesia; boiling iron, 30 ft. from combination. There are warm and cold bath-rooms. Water to supply the hotel is brought from the mountain side, about 800 ft. distant. At 12 o'clock, we pulled up tent and left for better hunting grounds. It was three miles to the Siegler Springs. There were 40 campers on the ground. The scenery is beautiful. Here we turned to the left and took a wrong road up grade two miles. We had to double-up teams and twisted off the king-bolt, and all hands and the dogs had to walk. John, the cook: "Too muchy muchy; no good walky. Pay me money; me go back." Here the hounds struck a deer trail—bad luck to the hounds. Down grade three miles brought us to Rice's sawmill. This is the finest timber we have seen. The scenery is wild and romantic.

Last night, Aug. 23d, we struck camp at the foot of

Uncle Sam Mountain.

Not one acre of farming land was seen along our route yesterday. Uncle Sam is a grand old mountain, covered with chaparral and evergreens, looking down upon the surrounding country. From its lofty peak one has a grand view. Its elevation is 2,000 ft. above the level of the sea. The climate here is cool. Apples, pears and plums are splendid. Peaches and apricots are a failure. Vegetables do well. There are no fruit pests in this orchard.

Aug. 25th the sun rose bright and clear; not a cloud in the horizon. The little birds sang merrily. The hounds jumped and barked with joy as we went forth to explore Uncle Sam. We found him a dry and rough old customer. At three o'clock we struck out for

Kelsey,

Distant five miles, following around the western base of Uncle Sam. The road was rough, the soil thin and timber scrubby. Kelsey is a dull place. The orchards all along the road were sadly neglected. They all complain of hard times. Kelsey has a fine school, three churches and but one saloon. The poor saloon keeper eyed us, wondering that the dust and traveling did not give us a thirst for his fire-water. Apples, pears and plums do well here, but peaches look worse than the Old Harry.

On Aug. 26th, a little before six o'clock, we were on the road for

Lakeport,

Situated in a big valley, distant nine miles. Lakeport is a beautiful town. The streets are wide and clean. Lakeport has its quota of children and dogs. The land here is very rich, in many places low and wet, and covered with a heavy growth of tar-weed. In the valley fruit does well, though but little care is taken of the trees.

After a short halt, we took the road and dust for

Pearson Springs.

Three miles over rolling hills. We camped for dinner in Scott valley. Here is fine land, timber good, water cold, and plenty of fine fish, trout and silver-sides. Our route now led down Scott creek. Fields of corn and other produce greeted our eyes on every turn in the road. At five o'clock we struck camp at Pearson's Springs. We are now in the midst of scenery grand and magnificent. Pearson's Springs are one-half mile from Scott creek, nestled in a delightful cave, surrounded by beautiful mountains covered with evergreens. The majestic oaks that line the road from the springs to Scott creek afford fine shade and the best of camping ground. There are four springs—iron, sulphur, soda and magnesia. These springs have many advantages over other mountain resorts. They are only half a mile from Scott creek, where feed of all kinds is easily obtained, while your larder may be filled at any time with the choicest products of flesh and vegetables from the surrounding valleys.

On August 27th the songs of a thousand birds awoke us from our slumbers to view the sun as it ascended in majesty to the throne of day; and we also saw him roll downward and sink in the west, and no great mountains of clouds piled up to hide his parting rays. What a joy to spend a Sabbath surrounded by the works of nature! The pure mountain air, the cold, fresh water as it comes bubbling from the mountain side, the sweet songs of the little ones as they ramble through the shady groves or climb the mountain glen, all proclaim the goodness of God.

August 28th: We must hasten breakfast, for we are to have an excursion to the

Blue Lakes.

After a pleasant drive of one and a half miles we reached them, and our lines had scarcely touched the water before one of the finny tribe lay wriggling on the bank; then another and another, till they lay piled up like fresh-cut stove-wood. Tiring of this sport, we took to a boat and launched out upon the deep blue waters. Here a sight met our eyes never to be forgotten. The water was one living mass of wriggling fish! Mr. Menzies, our partner in this day's sport, guided the boat, while I stood in the bow and killed the fish with the ore and lifted them in. Tired of this, we returned to camp, where an excellent dinner awaited us—venison, new potatoes, green corn, string beans, and all other luxuries that the heart could wish.

On August 29th we rose early, to join a company to cut a wild-bee tree. This is fun alive. The axes had scarcely sounded on the tree when the little fellows came down and made it lively for the boys. As we were a little lame, we kept at a proper distance. There is always a hero in every day's excursion, and Mr. Parmeter was ours to-day. The wild honey gave him the colic. Oh, that face, as he rolled on the sand!

On August 30th, as we were sure of a cloudless day, another grand hunt was planned, and Mr. Kehert, the proprietor of the springs was to play a prominent part and lead the young hunters to fresh hunting ground. Imagine the crest-fallen hunters as they return with one old three-legged deer. Mr. Menzies and I chose the better part. In company with several ladies and a dozen or more happy children, with fishing tackle in hand, we wound our way to Scott creek. It was strange, there was only one hungry fish in that creek, and he was only about four inches long. When we returned to camp he was like the darkey's fish—"Golly, hadn't he shrunk!"

We Visited Batchelor Valley

In the afternoon. The land is very rich. Corn, pumpkins and potatoes grow to perfection; also apples, pears and plums. Peaches are rather small. There is no care taken of the trees. There are no fruit pests in this valley. On Aug. 31st, a little past six o'clock, we were on the road for parts unknown. We passed the Blue lakes to the right, and took an up grade for three miles. It is a toll road: two-horse team 50 cts. Here is a fine orchard. Down grade we went five miles to Cold creek. Here our baby caught the first trout—12 inches long. Down Cold creek we went to Russian river. The mountains are very rough. Down Russian river we went three miles to Cleveland mill; flour five dollars per barrel. No farming land was found along the road that day. Our route from here was down Russian river, through low, rolling hills, to Ukiah, a distance of seven miles. The night of Aug. 31st was cold. The boys sought shelter in the barn. The fog came rolling in like a wet blanket. Our course was due West, up Orr creek two miles. We have now to climb Russian river mountains. At night we expect to camp in the great redwood forests. For four long hours we climb this beautiful grade, and at 10 o'clock we stand upon the divide between the great Pacific and Russian River valley. At four o'clock we pass Low Gap post office and Dead Fall.

September 2d was cold and cloudy. We left the main road and drove to Mr. Nadishie's, two and a half miles distant. This is a fine place to camp. Apples, pears, plums, grapes, tomatoes, cabbages and potatoes were good, and we waited over a day. On September 3d, Sunday, the sun rose bright and clear; everything was quiet. The gentle sea breeze that comes fanning the beautiful fern that covers the mountains—how invigorating it was! The invalid and dyspeptic here find nature's own remedy. There is no sound of the church bell, no puffing of the iron horse as he goes rushing by; no weekly or daily paper to peruse—all, all are hushed in nature's solitude. So come with me and let us view the

Giant of the Forest

Only 300 ft. from camp he stands, 48 ft. in circumference, 300 ft. without a limb. The howling blasts have blown at least 50 ft. from off the top, and yet he seems to almost penetrate the clouds. The storms of a thousand years have hurled against him, and yet there he stands defying the tempest, scarred, worn and covered with beautiful moss. Many of these trees, when made into shakes and pickets, delivered in Ukiah, 18 miles distant, bring $200 to $250. We had visitors to-day from the logging camps. The application of a little soap and water would have had quite a sanitary effect.

Long before the sun had risen above the horizon on September 4th we were on the road for

Mendocino.

Distant 36 miles. We are now traveling northwest down the divide between Navarre and Big river. We passed three logging camps, a store and post office at Prairie camp.

The morning of September 5th, thanks to the Giver of all good gifts, came and found us safe. No place could be more suggestive of banditti and robbers than this wild, dark glen, shut in by a dense forest and thick underbrush from five to 20 ft. high. At dawn of day we were on the road. After five miles up grade, we are on the divide between the Navarre river and the Pacific; at two o'clock we strike camp at Mendocino. It is situated at the mouth of Big river, on high ground, and commands a mag-

nificent view of the Pacific. Its streets are wide and clean. The buildings are chiefly of wood. Big river is here crossed by a fine bridge. Lumbering is an important branch of industry. A heavy gale was blowing. I thought I had seen water in its greatest majesty and glory, but here was a grandeur, a sublimity and power that excelled all I had ever seen before. The huge, mountain billows of dark lead color, capped with molten glass and tipped with silver foam, came rushing in. Once or twice the sun broke through the angry clouds of fog that enveloped the town, and touched the billows with his golden light, throwing over all the prismatic beauty of the rainbow.

At four o'clock we bid adieu to old ocean, and

Turned our Faces Homeward.

Our route lay northeast. The road was rough and the soil so poor that even a church mouse could not live upon it. After four miles of sand and dust, again we enter the beautiful redwoods. How grand the old giants of the forest are! The shades of night are drawing on, the woods are densely thick. The pale moon shone dimly through the dense forest, throwing the long, dark shadows across the road. Down, down we go. The road is fearfully steep; should a neck-yoke or a brake give way, the result might be serious; but, thanks to our lucky stars, we are safely landed at the crossing of Russian gulch. There is not a rod of level ground to strike our tent. However, we must camp, for it is eight o'clock, and 10 miles to the next camping place. The boys lost one of their fine boots to-day. The Mongolian: "Too muchy muchy; no good campy; pay me money, me go back." My better half cut brush to bolster up her head, and the boys made their bed in an old bear's den.

On September 6th, at three o'clock, the campfires are burning brightly, and all hands are wide awake. None but those with nerves of iron could sleep in this place. The horses are shivering with cold; no bright rays of the morning sun ever penetrate this dark camping ground. As the gray streaks of approaching day made their appearance, we rolled out of this dark and dismal place. All hands, even the hounds, have to walk. Last night Mr. Gavel captured a fine hare; after consultation, we thought it best to turn him loose. There, in the road, not 200 yards from camp, are plainly to be seen the tracks of two California lions as they had walked the road in search of food.

Up, up we climb; eight miles of up grade, and we stand on the divide between Jasper creek and Big river. We are now in the midst of a mighty redwood forest, 40 miles wide by 300 miles long. The scenery is wild, grand and magnificent. Our eyes ache with the intense smoke, as mile after mile is traversed. The fact now breaks upon us that we are in a dense forest, and that is on fire. It is at least 20 miles to the first open space where the sun can shine upon us. The smoke and heat become almost unendurable. The flames on either side of us are leaping up the trees, in many places 100 ft. high. Here and there a great giant of the forest lays across the road, many of them eight to ten feet through.

Eighteen miles from Mendocino we camped for dinner; thence onward up grade three miles; then down grade to Big river; thence up Big river four miles; the road rough, narrow, steep and crooked. No farming land lay along our route to-day, except at Half-way house. On the morning of September 7th, a little after six o'clock, we were under way, traveling in a northeasterly direction. We leave Big river and climb the mountain until we strike the divide that will lead us down to Little Lake. For five long hours all hands and the cook, yes, even the hounds, have to walk. At one o'clock we reach the down grade. Down, down we go; no feed, no water; still down, down we go, and at three o'clock, in a deep canyon, we find the place of "Slim Jim," a sheep herder. Here is good hay and cold water, and we camp for dinner and to dress our deer, for we have killed a fine buck. After a hearty meal and resting our animals, we took the road for

Little Lake.

We found no farming land to-day along our route until within 10 miles of Little Lake, and there was good sheep range. Little Lake is a beautiful village. It is situated on high ground and commands a fine view of the valley. The valley is five miles long by two miles wide. The land is rich, though low and wet in many places. They all complain of hard times, and yet there are no people in the world who show so little enterprise and energy as some of the farmers of Lake and Mendocino counties. These same farmers will gather around the grocery store and swear by the shades of Andrew Jackson, by the great horn spoon, and other oaths, they never saw such hard times, and yet there is scarcely a pound of bacon or lard to be had in the town. What there is is shipped up from San Francisco. And yet this is one of the best places in the State to raise hogs.

We passed Capella at four o'clock P. M., and on the evening of Sep. 8th we camped at Cleveland's mill on Russian river. Here we struck our old trail, and followed it back to camp at Pearson Springs. The grounds were alive with campers. Sep. 10th, Sunday, we attended sabbath school in Batchelor valley, distant four miles. A sad accident happened to-day. One of the little boys was climbing over the fence, when the rail turned and he fell, breaking his arm.

Sep. 11th we drove six miles in Scott valley, and camped in Mr. Morrison's orchard, under a fine walnut tree. We took a spin around and killed one fine buck. On Sep. 12th we planned for a grand hunt. The cook called us at four o'clock. It was nice and cool, and we set off with repeating rifles, three hounds, and two curs. We killed three fine bucks. On the morning of Sep. 13th we left camp at three o'clock and went to the other side of Jordan and killed four deer. The next morning it was eight o'clock when we breakfasted. There was no hunting to-day; all hands were as stiff as stage horses; the hounds were all lame and had their feet tied up in axle-grease. We jerked venison, while the yellow-jackets were thicker than fleas in a hog-pen; got stung twice and it hurt like sin.

Sept. 14th, Sunday: The sun rose bright and looked out from his cloudless throne in the heavens, and kissed the glittering mountains and vale. There was a heavy frost, and ice has formed on all the shrubbery during the night. We have a Sunday to spend in this beautiful valley. Where shall we go? All around us are the most beautiful groves and glens. We turn from them all to the rude school-house on the hill to attend Sabbath-school. About 60 were in attendance. Sept. 21st it rained hard, and we moved into the woodshed. Sept. 22d we had a big hunt; started 14 deer and killed five bucks. Last night the dogs stole one sack of our dried venison. Bad luck to the ship that brought the dogs to America. On Sunday, Sept. 26th, we attended Adventist preaching and Methodist Sabbath-school. There were 68 in attendance. Sept. 27th we drove to Huntington valley; camped one week and killed eight deer. On Oct. 6th arrived at home, in Winters, with 32 sets of buck horns as trophies of our rambling, with many other fine specimens collected on our route.

A Journey to the Mountains

Is always looked upon as a hard and toilsome one; so much so that but few undertake it. When once launched upon the journey, one is gratified to find the toils much lighter and more pleasant than anticipated. It is quite different from a trip to the Eastern States. There you are whirled along by the iron horse at almost lightning speed. Here your highway is a sea of sweet waters, from which you may at any time slake your thirst. On your right and on your left are wild and romantic scenes, to which the overtasked brain can turn with joy and pleasure. Upon the Eastern route how different. There the palace car is your home, going at the rate of 40 miles per hour. Here you have time to view the works of nature, drinking in its grandeur to your heart's content.

Suggestions to Campers.

The first step to be taken is to secure good pulling horses or mules, and suitable wagons for the trip. One requisite will be found a great comfort—a good, substantial tent, with iron pins to stake it securely. There must be plenty good, warm blankets. As to wardrobe, it should be plain and strong, with a change for special occasions, such as visiting the springs and villages, attending church and sabbath-school, which can be done once in a while.

My primary object in visiting the mountains was to restore my health, having been almost an invalid for the last 10 years. Could I but picture the contrast between leaving home and the return I would gladly do so, but words fail me. Suffice it to say, when I left home my standing weight was 118; when I returned I brought down the scales at 156 quick, and was as spry as ordinary men at my age—53 years.

The trip to the mountains is not a hard one. Many places of interest are found in close proximity to the road. There is no occasion for hurry, so the fatigues of the journey can be avoided. Your wagons and tents become your home, and can be fitted up with comfort and convenience, as the taste of the traveler may dictate or his purse allow. The trip will require a month and one-half or two months, or even longer will be beneficial and pay well. It is recreation, change of scene and diet, with the rest the dyspeptic and invalid wants. Leave all your cares, your drugs and medicine at home. Drink pure mountain water, eat wild meat; in other words, rough it a couple of months, and take my word for it, you will come back with health much improved. And now, dear Editor, we hope you will make one of our company in our next ramblings, which will begin Aug. 1, 1882.

[We trust this fresh recital of incidents, scenes and recreation will lead many a tired family to break up this summer for a ramble in the wilds. The cost must be comparatively light when one has the horses and wagons, as most farmers have. Even to city people, who have to purchase the outfit, to sell again on their return, the expense would be much less than in fashionable summering, and the enjoyment and sanitary effects much better, providing one knows how to "rough it." Escape from the haunts of men! Fly to the mountains! Our great regret is that to us it is not possible. Nothing would please us more than to avail ourselves of our friend's kind invitation to join his ramble for 1882.—EDS. PRESS.]

Los Gatos and the Santa Cruz Mountains.

EDITORS PRESS:—A few weeks since leaving San Jose, I passed over the beautiful valley that now is becoming so changed and cut up into neat little country homes, as to lose all its former ranch characteristics. A pleasant drive of 10 miles brings you, by a gradual rise, to Los Gatos. This little burgh is in an unpleasant fix—has grown up rapidly since entering on its teens, and is now feeling most too large and populous to rank among the common villages, and not quite sure of being treated civilly if it should put on full city dress. The town is truly one worthy of ranking higher than some that have taken the surname of City. It has a very desirable location, elevated above the valley and bay, and is in the midst of very pleasant surroundings. The recently divided lands are being settled by an average of good, intelligent citizens, many of them Eastern people, who are aiming to build up homes. Some of them have tried big acres until they are satisfied now to take from 10 to 30 or 40 acres, and with that have some social advantages.

From Los Gatos, by easy graded road, you follow closely along the Santa Cruz Narrow-gauge railroad for several miles up the ravine, passing several comfortable farm residences and some very rough beginnings that, after much labor, will become transformed into orchard, vineyard, garden and the beautiful, healthful home.

These mountain climbers' retreats have endless variety of situations and formations, plenty of trees and shrubbery wherever they are satisfied to allow them to remain. The soil seems suited well to the growth of almost every variety of tree, plant or shrub. The fruits produced are of excellent quality and a favorite in the markets. Near Wright's Station, where the cars enter the tunnel, the population is becoming quite dense. The dwellings, many of them neat and commodious, show taste and refinement. The well-filled school-house, at their weekly literary meetings and at their church and Sunday-school gatherings, speaks well for their literary, social and moral tastes. As often as once a month they listen to a scientific discourse from some able scholar. Profs. Allen and Norton, of the State Normal school, who are improving homesteads there on still higher grounds, were mentioned among their most esteemed lecturers, as their crowded audiences gave testimony. So convenient are these Santa Cruz summit settlers located that they can do business in San Jose and retire each evening to the mountains by the Narrow-gauge railroad. Prof. Norton returns nightly to his family cottage, near the encampment city of Skyland.

There are in this neighborhood several places neatly fitted up to accommodate visitors and health seekers right on the ranch, free from all town formalities, and no bar kept. Visitors need not now fear getting lost anywhere through these mountains, as the railroad is now getting numerous stations, and the whistle is almost constantly screaming between tunnels and freighting stations. Persons of moderate means can reach here from the principal cities and valleys of the State, and enjoy altitude, sea breeze, and grand ocean view off on Santa Cruz and Monterey-bays, and landscapes of great variety, and equaled only by those places we read about but seldom see.

Descending about two miles below Skyland I found excellent accommodations at Hotel de Redwood, where the boarder and the camper would be well used.

The Dakin Farm.

Within six miles of Santa Cruz I found the farm residence of Mr. J. Dakin and the pleasant home of your very interesting correspondent, Mrs. L. J. Dakin, a sister of the late Mrs. Locke, who so often cheered the readers of the RURAL by her instructive letters over the signature of "Mary Mountain." Mrs. Locke's residence was also a pleasant one, in this same range of mountains. It may be of interest to those who peruse Mrs. Dakin's occasional letters to know just all about her and her surroundings, but I cannot nearly gratify their wishes in this matter. To start with, she is not a physical giantess—nothing beyond medium in size; is the mother of three children, two sons and a daughter—the youngest now about 15; yet Mrs. Dakin is very young and sprightly, mentally and physically. The whole family seem to belong to that class that can always find plenty to do, and then like to be about it in earnest. They are just now initiating themselves into a very comfortable new house, built and located with a special reference to the greatest comforts and enjoyments of the owners and the pleasure and health seekers who may desire to spend summer or winter months, and enjoy mountain and seashore life for a season at reasonable expense. The large farm and garden, with all varieties of fruits and berries, hunting and fishing, riding and driving, the sheltered position and the pleasant surroundings are all combined to give ample assurance of a pleasant sojourn to the visitor.

Mrs. Dakin seems to know how to serve the best of hygienic luxuries, with fruits and vegetables in abundance and of best and choicest varieties. As late as April we had fresh apples of different varieties on their table from their own orchard.

It seems very fortunate to have just such safe harbors of rest and enjoyment for those who have been shut up in the city and burdened with too much care and business, and also for farmers' overworked families, who have been breathing the heated malarious atmosphere of the inland valleys, that they may here, for a season, entirely change the scenery and surroundings, and daily get the recreations of the beach and the sheltered Glen Cottage home enjoyments. One can easily forget the precise name of such a well-chosen home, but the easy, natural, good manners he witnessed always abide with him as a fountain of pleasant recollections.

B. W. C.

Science of Value to All Men.

M. Quartrefages, in an address before the French Association for the Advancement of Science, at Bordeaux, thus emphasizes the value of scientific knowledge, not only for those who make it a specialty, but for all practical and intelligent men:

All men cannot be expected to enlist under the banner of professional science. But all may and must acquire scientific notions, sufficient at least to understand the utility of the intervention of special men, and to be able to judge when that intervention becomes necessary. Science is nowadays omnipresent, and tends more and more to become the sovereign of the world. What industry is there that does not want the help of the engineers, and would remain content with the progress already accomplished? What branch of manufacturers would decline the help of chemistry? What medical practitioner, worthy of that name, would consent to forsake physiology, that complex science, the offspring of chemistry, and would do without natural philosophy any more than anatomy? What intelligent agriculturist does not understand that the problems of culture and production are essentially questions belonging to zoology, botany, geology, and chemistry? And in this great city, one of the queens of universal commerce, what merchant would deny the importance of geography?

Science is as indispensable to the military man as it is to the manufacturer, the medical practitioner, and the agriculturist. I am not going to undervalue the share that, in war, falls to inspiration and gallantry. But inspiration must be enlightened by study, and courage must be aided by weapons equal in efficiency and power to those of the enemy. No more than the agriculturist or the manufacturer can the officer master all the sciences, the help of which is necessary to his profession. He cannot be expected to solve by himself all the problems raised by his single art. It is essential that he should first ascertain these problems, and confidentially appeal to scientific men, pointing out to them the application he wants. Let us, therefore, stir up the intellect of all men. Surely, we may hope to bring to light many treasures which, for want of the opportunities which it will be our object to create, might remain buried in the darkness of ignorance.

Our task will be fulfilled only when every man exercising any influence on his neighbor, or having any amount of leisure on his hands, shall have become an enlightened friend of science; when the least among laborers shall know what principles regulate the processes and the practice of his handicraft. Look at the results obtained in England by our eldest sister, the British Association. It is owing to its action that part of the population of England has undergone a transformation. The sons of fox-hunting squires are now geologists, philosophers, botanists, archæologists, etc. It is a banker who presides over the Anthopological Institute, and a brewer who is at the head of the Astronomical Society. The British Association reckons its members by thousands, and all the principal towns dispute the honor of its visits. Let us, then, begin our work with confidence; let us spare no efforts, for none shall be in vain. We know now that in the physical world there is no loss of matter. It is so, and even to a more absolute degree, in the moral world. Will is also a power that increases and multiplies by transforming the minds of men, like a ferment. We have the will for good; let us resolutely apply it, and we shall develop the intellects and raise the hearts of men by the diffusion of scientific knowledge.

PREVENTING FOREST FIRES.—The idea that the best way to prevent forest fires is to burn all trash and small undergrowth annually, seems to gain popularity. One who is well posted in forestry matters says: "If the undergrowth is kept down and dead matter not allowed to accumulate, there will be no fire to hurt the live trees. We know a piece of woods that is burned under every year by sparks from the Reading railroad locomotives, but the standing timber has never been injured. It will not cost a thousandth part as much to clear out all the brushwood in the United States as we lose in one year by the forest fires, and the true way to preserve our forests must start from just here. At any rate, this idea removes the great objection to forest planting—that it may get burned. If rank vegetation is kept down for a few years during the growth of the forest, it will, by its own shade, keep down the growth thereafter."

PATENTS IN GERMANY.—Last year there were 7,177 applications for patents in Germany; 4,339 were granted. This is the largest number granted in any year save one, 1879, when the number of patents issued was 4,410.

PATRONS OF HUSBANDRY.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully solicited for this department.

Grange Leaflet.—No. 1.

Sunshine.

Written for RURAL PRESS by CLARA DENNIS.

If you would know what the world might be without sunshine, those of you who can turn over the pages in memory's book until you find the record of a very rainy winter in California. Naturally, active and industrious people do not mind these gloomy days, because they have the golden ray of sweet contentment ever shining within their hearts with such a strong light that some must be reflected in their countenance and upon those around them. Thus do they unconsciously brighten the home circle of which they form but a small arc.

Sunlight is necessary to the growth of plants, as may be proven by placing them in a dark room or underneath dense foliage for a short time. The leaves turn yellow, the stems are slender and lack solidity, and the plant has a sickly look. While a plant grown in the same soil, but in the sunshine and air, will have rich, dark foliage and a healthy appearance.

Children are subject to the same laws as the vegetation of our land. If you would have healthy and vigorous little bodies to sustain the required mental activity, you must give them plenty of out-door life; girls as well as boys. Dress the girls in such a manner that they may share in the sports their brothers enjoy so much. Never mind the tan or think it unlady-like for girls to take pleasure in these healthful exercises. Teach the boys how to perform household work and sewing, as well as the girls; they will never regret the knowledge. Teach both to work in the garden; encourage them by giving them a little space to cultivate and call "my garden;" and buy them a little spade and hoe of their own. As they dig and plant they will unconsciously acquire a knowledge, in kindergarten fashion, of botany. The result of such an education will be healthy, sensible girls and gentlemanly boys.

We have all noticed how an infant will crow and laugh as he tries to catch the slanting ray of sunlight as it streams upon him, seeming to revel in its brightness. If we would pause to think, his delight might teach us to grasp the little joys that come in our pathway, without reaching and craving for greater ones beyond.

Persons whose lives have, apparently, the least in them to make one happy, are the ones who most appreciate the small pleasures, and always welcome the tiniest ray of comfort with a heart bursting with gratitude to the benefactor.

People who have so many of the comforts of life that they feel as though they must share them with those who have not fared so well, and go about the world doing a little here and there, carrying sunshine and happiness wherever they go.

There are people in the world who seem to bring a flood of sunshine with them whenever they enter a room; they have so much of happiness themselves that they must dispel it upon those around them; they are always doing for others, and that is the fountain of their geniality. Even though their own hearts may be heavy, they lighten their own burdens by forgetting self in helping to bear those of others.

If we would have good, live Granges, we must keep a generous supply of sunshine in them. Each one must bring his or her measure full, that the grand total may be beyond computation. Go with an idea of entertaining others, and not with the expectation that others will entertain us all the time without our bringing one fagot to help kindle the fire of good fellowship.

"Tho' sad and drear our days may be,
A sunbeam shines thro' all;
If it do but rest on our hearts and minds,
As it rests on the cottage wall.
For the golden sunshine of the heart
Will charm away every ill,
And we'll make it feel that the darkest cloud
Has a silver lining still."

May 26, 1882.

SACRAMENTO GRANGE REUNION. The Sacramento Grange reunion, last Saturday, was a very enjoyable occasion. The third and fourth degrees were conferred upon six young men and ladies. Later in the afternoon an open meeting was held. Addresses were delivered by State Lecturer Davis and others. Refreshments were served, and there was a social time generally.

WHEATLAND GRANGE REUNION.—We are requested to state that there will be a harvest feast and Grange reunion given by Wheatland Grange on Saturday, June 3d. All neighboring and sojourning Grangers are invited to attend. The good time always had by Wheatland Grange will insure them a full attendance.—*Sutter County Farmer.*

NEW BUILDING.—It is reported that the Ferndale Grange Business Association have under consideration the proposition of putting up a brick building in Ferndale, suitable for their merchandise establishment.

Oakland Free Market Again.

The following resolutions, adopted some time since by Temescal Grange, was presented to the Citizen's Committee of Oakland, and lately referred to the City Council:

Resolutions by Temescal Grange.

To the Citizens' Committee for the Encouragement of Home Manufacturing in Oakland

GENTLEMEN: The officers and members of Temescal Grange, Patrons of Husbandry, hereby express their approval of the action of your (first) committee in recommending the City Council to so legislate that the farmers, gardeners, fruit and stock raisers of Alameda and Contra Costa counties may sell their own produce in Oakland free of license, for the following, among other reasons:

We believe such privileges, granted to actual producers only, will have a tendency to increase the population of districts adjacent to the city, increase the value of taxable property, increase the patronage of the city stores, schools and other institutions.

It will afford our citizens fresher and more wholesome articles of food (for man and animals), and at less cost than they can now be obtained. The present license system seems a humiliating one to both producers and consumers on this side of the bay. It discourages agriculture in our neighboring districts. It unnecessarily causes the transportation of a large amount of produce through Oakland, to and from San Francisco; it causes expensive transportation fees on the same; it causes, unnecessarily, the payment of commissions to the wholesale dealers and jobbers in San Francisco, and another to the retail dealers in Oakland. It discourages local farmers from raising fruit and garden produce, by disabling them from selling any surplus they may raise above their own wants.

Fruit is not unfrequently allowed to rot in orchards within three miles of Oakland, because it will not pay the producers to gather and ship it to San Francisco, which could be gathered and retailed at moderate prices, with profit to the raisers, but for the barrier of a city license.

The first few weeks' experience after the establishment of the free street market in Oakland, and until the farmers were finally debarred from selling their produce without a license, the indications were favorable to a great and lasting benefit to both residents of the city and farmers. The interest manifested at the time, in establishing a free market, by the citizens of Oakland, although resulting in disappointment, on account of the final enforcement of a license system, shows that the people of Oakland would hail with popularity the privileges to accrue to them by the establishment of a free market.

We therefore petition your committee to take further action in urging the City Council to enact such legislation as will do away with the necessity for farmers and other producers in this and neighboring counties to pay a license for selling their own produce in Oakland, believing that by such action the cost of living in Oakland may be diminished to such a degree as to greatly favor the increase of home manufactures in Oakland.

It is to be hoped that the City Council of Oakland will give this matter due consideration, and fairly meet the best interests of both the country producers and city residents.

The Grange and the Debris.

At Potter Valley Grange, May 13, 1882, the committee appointed, at a previous meeting, to draft preambles and resolutions in regard to the debris question, reported as follows:

WHEREAS, By the process of hydraulic mining, less than 100 companies have been preying upon the people of the valleys, destroying its agricultural area, obliterating its cities and villages, clogging its waterways and changing the rivers from their channels into the agricultural lands, and

WHEREAS, From reliable report no less than 100,000 acres of the best land in the State has been destroyed by the hydraulic system of mining, and over $15,000,000 of taxable property destroyed, and the Sacramento and Feather rivers and some of the bays are being closed to navigation through the above system of mining, which is a great loss to the State and to the tax payers of the same, and

WHEREAS, In disregard of the rights of the farmers to protection and to the interests of the State, interested parties are seeking to bring about legislative action that would be but a deceitful remedy and sacrifice of the vested rights of the tax payers of the State, therefore be it

Resolved, That compromise is a superfluous term when applied to the debris question; that we have in common with all men a right to the integrity of our property and that it is the first duty of the courts and the Government to secure that inviolability of property rights.

Resolved, It is evident that the flow of debris cannot be stopped unless the hydraulic companies withhold their tailings from the reach of the flood waters of the rivers, and therefore that no system of dams in the river canyons will be effectual as a remedy, and that the use of these canyons as dumps by the hydraulic companies is inadmissible and should be stopped; that such uses are inimical to the interests of the State.

Resolved, That the time has come when the proceedings of the hydraulic companies must be recognized as unwarranted and indefensible and the interests of the State and the safety of the Sacramento valley will be best promoted by confining their operations within bounds wherein they will be harmless to other individuals and communities.

Resolved, That the definite judicial determination of respective rights will alone settle this problem, and we hope that the courts, before which the issue is now pending, will decide in accordance with the spirit of justice of the common law.

Resolved, That farming is the most permanent industry of a civilized country and mining is but temporary, and the temporary should always give way to the permanent, where their interests conflict.

H. P. MCGEE,
H. W. BAKER, } Committee.
T. W. DASHIELL,

Ratifying the Sacramento Convention.

The Anti-debris meeting, held at Meridian on Tuesday of last week, was a marked success. The Odd Fellows' hall was well filled, every seat being occupied, many compelled to accommodate themselves on the platforms around the hall, and the ante-room and hallway were also well filled. After stirring speeches by several well-known men, W. C. Smith introduced the following resolutions, which were unanimously adopted:

Resolved, That we, the citizens of Sutter and Colusa counties, in mass meeting assembled, do endorse the action of the Convention of Supervisors, held in Sacramento on May 3, 1882, and the resolutions there passed.

Resolved, That we urge upon the counties prompt and decisive action, as delay will be our ruin.

AGRICULTURAL NOTES.

CALIFORNIA.

ALAMEDA.

LIVERMORE VALLEY.—*Herald.* Most of the hay will turn out below the average. The present cool weather is very favorable to crops, and even where touched by the north wind, last week, they are recovering strength and brightness. Late-sown wheat will, however, be short, and only summer-fallow will produce a really heavy crop. Many fields of early winter sown are very good, show a bright color, and evince no signs of lack of moisture. The prospect now (provided we have favorable weather from this time on) indicates a grain crop in excess of that produced in this section last year.

BUTTE.

CROPS.—Chico *Record*, May 27: We believe the scare in regard to the coming crop of grain is about over with; and, as is usually the case, there are but few who are badly damaged. In the vicinity of Chico the grain sown on reliable wheat land, and planted in time, gives promise of a fair return. Some pieces that were sown late, owing to the favorable season for so doing, will be short, for the reason that sufficient rains have not fallen to bring it forward. The favorable season for planting, however, caused a larger acreage of winter-sown grain to be planted than usual. Some of our farmers are cutting excellent crops of hay. Accounts of short crops are still received from the west side of the river, and it is probable that many will experience short crops. In this section the prevailing south wind is bringing grain forward splendidly, and our farmers generally will be rewarded by a fair harvest for the faith that was in them during seed time.

COLUSA.

EDITORS PRESS:—Harvesting is in full blast here now, and before this letter will reach the PRESS the din of thrashing machinery will be heard in our midst. The time has arrived when, with few exceptions, correct estimations can be made of the weight of this season's crop. A fall crop was not expected at any time during the season, yet there were times when better returns were expected. The probabilities are that we shall fall considerably short of an average crop this year; but with proper economy in handling, and a slight advance in prices, the farmer may at least hold his own, or possibly advance a step or two. The pioneers of this vicinity say that a total failure never occurred here, and I think this year ought to be a pretty good test of the veracity of their statements. No irrigation is necessary, except for vegetables. There is plenty of water in Strong creek, above this point, for all necessary purposes. The northern branch of the C. P. R. R. will soon be finished as far as Orland, and then the spot which a very few years since was a monotonous plain, will be a railroad town of considerable importance.—L. D. JENKEN, Olimpo.

CROPS.—Willows *Journal*, May 27. We have had delightful weather for small grain this week, and the yield of Willows will be materially increased. Heading has commenced. Geo. Hoag, on the Rideout grant, put the sickle into barley Wednesday, and is getting a third more than he anticipated to the acre. The cool, damp weather has had a good effect along the river and foothills. Haying is being rapidly pushed to completion, and the hands so engaged will soon be harvesting. We have conversed with several gentlemen who have been through Tehama county, and congratulate our sister county on her good luck this season. The wheat and barley about Paskenta is of splendid prospects; the river from St. Johns up will yield a fair crop—in many instances more than an average. From Orland north, through the center of that county, the yield will gradually increase.

CONTRA COSTA.

CROPS.—*Gazette:* The previous good weather continued, with a few slight showers, this week, has been very favorable to the growing and maturing grain, all the while improving the prospect of the harvest outcome. The rain of Wednesday fell at some points in quite copious showers, but generally in the county, only in light sprinkles, nowhere in quantity to seriously harm the new-made hay. Rain in light measure may be pretty certainly looked for on or about the 20th of May, and seldom fails, often ruining a great deal of exposed new hay; but this time the injury has been inconsiderable.

LOS ANGELES.

GRAPE VALUES.—*Commercial*, May 25: The price of red wines has been materially advanced by manufacturers, and now the grape growers talk of raising the price of grapes for next crop. There is a boom in grapes and their products.

MENDOCINO.

HOP GROWERS' MEETING.—*Dispatch*, May 26: Pursuant to a call issued several weeks ago, the hop growers of this valley held a meeting, at the Court House, on Saturday last. The meeting was called to order by J. B. McClure, and, on motion, L. F. Long was chosen chairman, who stated the object of the meeting to be to organize an association and adopt a trade-mark for Russian River hops. He stated that this step was necessary for self-protection, as he had known of instances where hops from other localities had been shipped to San Francisco and branded "Russian River," thus defrauding the purchaser, and also tending to bring the hops from this valley into disrepute, and to cripple the industry. The organization was completed by the election of J. B. McClure as Secretary. Mr. Jos. A. Knox, of Hopland, then offered the following resolution, which was adopted: That the hop growers of Mendocino county form themselves into an association to be known as "The Hop Growers' Association of Mendocino." On motion, the chairman appointed D. W. White, Chas. Luce, John Mewhinney, J. A. Knox and J. B. McClure a committee to draft by-laws, etc. L. F. Long was afterwards added to the committee. The committee was instructed to draw up a code of laws for the government of the association, and also articles of incorporation, and to report progress at the next meeting, which will be held to-morrow afternoon at 2 o'clock.

SAN JOAQUIN.

CROPS.—Lodi *Sentinel*, May 29: Present indications are favorable for more than an average yield of the winter-sown crop. The summer-fallowed grain is seriously burnt in some places, but on the whole the damage done by the late north winds will not be so great as was at first feared. During the last week of cloudy and moist weather grain has filled out wonderfully, and it is now quite certain that the farmers of this region will harvest more than average crop.

SANTA CRUZ.

CROPS.—EDITORS PRESS: As I before this informed you, the May frosts of this year have bitten hard in Pajaro valley. I cannot now remember the exact words I have written you about this frosty month, but whatever I said was truth when it was said. I think I put the apricots as injured; I must now add they are ruined—at least mine are. They are still on the trees and look pretty fair, but on jarring the tree slightly they fall to the ground in a discouraging shower—very discouraging, indeed. As to the wheat, it has been reported on the valley as 50% to 60% gone. Since that report there has been cool weather, heavy fogs and one stout rain. Under these favorable circumstances such of the wheat as is not frozen dead in the head may make some effort to recover. You see, the trouble with most of the wheat seems to be in the second joint of the stalk. At that joint the stalk is constricted or puckered by the frost (or by something), so that the sap tubes are closed up in a way that the sap below the joint cannot connect with the sap above the joint; therefore, the sap that is above the second joint can, for a while, keep the head looking green, but is not able to fill it out. There is a glimmer of hope. Since the rain I have examined some stalks—some constricted stalks—and I find under the glass a glistening presentment looking like an effort of the sap to flow through, or past, the constriction. This may not amount to much, but it is a glimmer. We will have cherries, late apples and berries—perhaps currants—but our other fruits in the valley are, in the language of the foiled constable's official return, "*non est inventus, in swampum, uvastumpum, nocomeatibus.*"—J. W. G., Watsonville.

SONOMA.

PETALUMA FAIR.—*Argus*, May 26: At a meeting of the Agricultural Association, District No. 4, held in this city on Tuesday last, the following officers were elected: J. McM. Shafter, President; W. E. Cox, Secretary; Lee Ellsworth, Treasurer. Directors.—H. Meacham, Petaluma; T. H. Ink, St Helena, Napa county; William Zartman, Petaluma; J. McM. Shafter, Marin county; A. P. Overton, Santa Rosa; L. W. Walker, Marin county; S. S. Drake, Solano; James Adams, Santa Rosa. The time for holding the fair was set for August 28th to September 2d, inclusive.

HAY.—The farmers of Sonoma county are just now in the midst of haying. In the immediate vicinity of Petaluma there has been a considerably quantity already cut and put in cock. While in some instances the yield has been remarkably good, the general production is not up to a general average. There will be sufficient, however, to keep hay from running up to famine prices.

STANISLAUS.

WIND AND CROPS.—Modesto *Herald*, May 25: P. W. Cook informs us that the north wind has been very severe upon all the wheat sown on what is called hard land, but that sown on sandy land has resisted its blighting effects to a greater degree. He gives us an instance in the case of James Winchell, who has a piece of wheat just west of the town of Ceres. In this field there are 120 acres of summer-fallow. Last fall Mr. Winchell concluded to sow this fallowed

land and plow it in. This he did to the extent of about 10 rods all around, when he concluded to finish it with a rolling cultivator. The wheat came up and gave promise of a fine crop, until the late north winds swept over it. Naturally, he expected that portion which he cultivated in to be injured the greatest; but this is not the case. The 10 rods which were plowed in are burned and dead, while that which was cultivated in looks splendid, and will yield a good crop. The line between them is distinctly marked, and has upset the common theory. Mr. Cook says his own wheat presents an enigma. He has both summer-fallowed and winter-sown wheat. The former is heavy land and the latter is sandy soil, and he will have a pretty fair crop from his dry sowing, while the fallowed land looks spotted and will be cut for hay. J. E. Stuart informs us that he has a fine prospect for a good yield, both from fallowed land and from winter-sown. He says it has passed the critical period, being now in the hardening process. It stands about three feet high, and is heavy on the ground. He thinks his summer-fallow will yield 25 bushels to the acre, and winter-sown 15 bushels. He says the great trouble is, he has not enough of it. The same reports concerning the freaks of the north wind come to us from every quarter. It has burned the wheat in patches and streaks. That planted in sandy soil has resisted the effects of these winds to a greater extent than that in heavy soil. Some venture the theory that the alkali in the heavy soil has been the destroying element.

SUTTER.

CROP NOTES.—Yuba City *Farmer*, May 26: Traveling across Sutter county last Tuesday, we had an excellent opportunity to see the condition of the crops. In most places they look well. Here and there may be observed places among winter-sown grain where it has come up scattering, but generally it looks well. Barley is whitening, and will, in many places, be ready to harvest in a few days. Summer-fallow of every description is full of promise, while the winter-sown will yield about an average. What struck us with surprise was the small amount of hay that is being cut. Between here and Meridian we only noticed six small areas that have been cut to hay. Crossing Long bridge and entering the boundary of Swamp Land district, No. 70, we find the grain in splendid condition. Wheat and barley is just as thick as it can stand, and is of splendid color, except in a few isolated spots where the frost has injured it. One piece of barley of 160 acres on J. Hagerman's place is as fine as we have seen. There will not be much hay cut in No. 70, and they will cut that the last of this week, if the weather is favorable. The north winds of Friday and Saturday did not do very much damage, and the cool weather that has prevailed since has been very favorable. A friend who has been traveling in Yolo and Colusa counties, says haying is progressing finely, and a large area will be cut. The *Bee* reports the crops in eastern Sacramento as being very promising. In fact, the bulk of the grain that will be raised this year will come from those counties that are threatened with destruction by detritus from the hydraulic mines—Butte, Sacramento, Sutter, Placer and Yuba.

DEBRIS MEETING.—A public meeting was held at the Brittan school-house to discuss the debris question last Friday evening, May 19th. G. E. Brittan was called to the chair, and Mr. Ohleyer was introduced as the speaker of the evening. A large number were present, indicating, as the speaker told us, that public sentiment was advancing and widening in the valley. As proof of this, we were reminded of the action recently taken by six different counties in the State, and the fact that some of the leading papers were taking stronger grounds in favor of the farmer than formerly, was pointed out as a significant one. Another indication of advance was found in the fact that the State has taken the matter up. An appropriation is expected from Congress. Warning was given not to rely too much upon this, even if it is granted. The speaker thought an appropriation was needed, but he did not want to see it put into dams. Several comments were made upon the Mendell's report concerning the efficiency of these dams. The conclusion arrived at was that these structures might settle, and their usefulness become impaired; that it was not intended to make them water tight, or sand tight, and that the valley people took all the risks, while the mountain folks took none. Mr. Ohleyer went on to show that the valley lands were not being destroyed by rocks and bowlders, but by sand. We were shown by a diagram to what extent this sand has filled the channels. It would be well to circulate similar diagrams, as this one shows very clearly what changes are taking place in our rivers. The following resolution was adopted: *Resolved*, That we heartily approve of the organization perfected at Sacramento, and the resolutions adopted. A vote of thanks was then given to Mr. Ohleyer for his clear exposition of the subject, after which the meeting adjourned.—J. M. ALLEN, Sec'y.

TULARE.

LATE CROPS.—*Delta*, May 26: Farmers who have failed in making a crop of wheat, owing to the rains not falling at the proper period, yet have time to put in a crop of late vegetables. Water in the ditches will enable them to wet up several acres, which they can plant to corn, beans and potatoes. Corn to-day is retailing in Visalia at two cents per pound, bayou beans are selling at five cents, and white beans seven cents. Even should a large crop be raised, and thus cause a reduction in prices, still there would be left a good margin for profit.

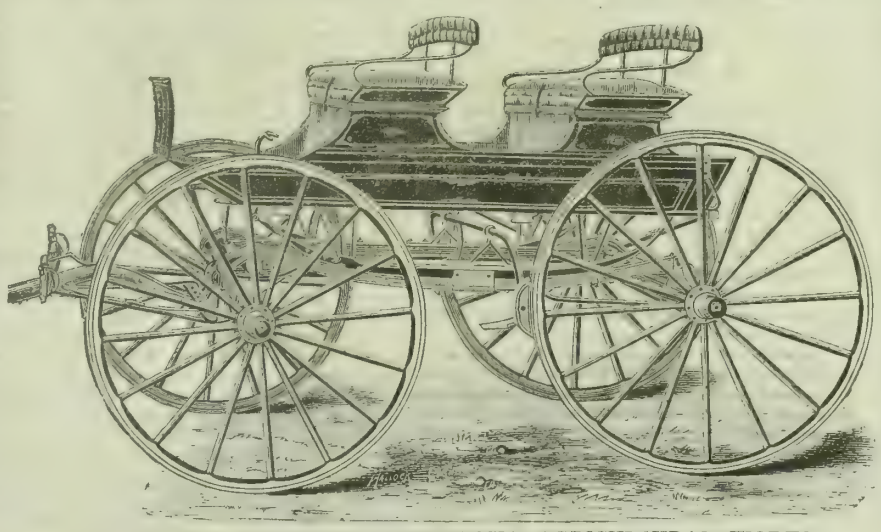
YOLO.

CROPS.—*Democrat*, May 25: More favorable weather than the present could not be wished for to mature the growing crops, and we are told that the wholesome effects are quite plain to be seen. Much of the grain is filling nicely, although there is a large amount that will not pay for harvesting. A continuance of the present cool weather will make better crops in this county than have heretofore been calculated upon. We have learned of no summer-fallowed grain that will not make a fair yield. A gentleman from Winters has placed on our table a sample of wheat taken from a field near that town, which is well filled and the kernel large and plump. He says this is a fair sample of many fields in that locality.

YUBA.

GOOD CROP PROSPECTS.—*Appeal*, May 26: B. F. Frisbie has 600 acres in wheat, near Yuba City. On 400 acres, summer-fallowed, the grain is shoulder high, and will, he thinks, yield 40 bushels to the acre. On 200 acres, winter plowed, the grain is about three feet high and will probably yield 20 bushels to the acre. There are not many fields that will yield 40 bushels to the acre this season. S. E. Wilson, of Sutter, does not expect more than an average of 25 bushels of wheat from his 900 acres, 600 of which were summer-fallowed. Some of this last will, perhaps, yield as high as 40 bushels. His grain has plenty of hight and looks very well generally, but on about 100 acres it did not make a stand.

GRAND ISLAND CROPS.—T. J. Barr, the thrasherman, returned yesterday from a visit to Grand Island. He found the crops in Mormon basin looking splendid; wheat and barley five feet high. He says the barley there will yield 80 bushels to the acre, and the wheat nearly as much. He brought with him the finest stool of barley he saw. It has 126 stalks, and may be seen at White, Cooley & Cutts'. Mormon basin occupies about a fifth of the cultivated portion of the island. Outside of it, the crops on all but about two-fifths of the reclaimed portion will be fine, the wheat yielding about 40 bushels and the barley 50 to the acre. On the remainder of the land the crops will be light.



THOROUGHBRACE WAGON, OF BENICIA AGRICULTURAL WORKS.

Benicia Agricultural Works.

We lately paid a visit to the above-mentioned works, and were fairly surprised at their extent and completeness. The principal owners are Messrs. Baker & Hamilton, of this city and Sacramento. The factory was formerly located at San Leandro, and was known as the Sweepstake Plow Company.

The Benicia Agricultural Works comprise foundry, machine, wagon, smith's, paint and finishing shops, covering a floor surface of nearly two and a half acres.

The wharf connected with the works is over 600 ft. in length. All the machinery is entirely new and of the best description, with all the latest improvements. Over 200 skilled mechanics are engaged.

The overland train passes through the works and stops to deliver and receive passengers.

One of their specialties is the manufacture of spring, express and thoroughbrace wagons, and of every description, to order.

We herewith give an illustration of their thoroughbrace wagon. Other illustrations appear in the advertisement on another page. Their premises are well worth a visit, and we recommend our readers to call at the works and see for themselves.

ACCORDING to the estimates made by the State Engineer the average flow of water in King's river, through the months of April, May and June, is 6,726 ft. per second. Taking the usual allowance of one cubic foot per second for each 160 acres of land irrigated, the flow of this stream during the three months mentioned is capable of irrigating 1,076,740 acres, or 1,682 square miles of Territory.

Railway Fares to Resorts.

The natural beauty of our health and pleasure resorts, and their value to those seeking restoration of mind and body, will, ere long, make our State famous throughout the world. They would even now be much better known and more widely patronized were it not for the high price of railway carriage. The people of the Eastern States and of Europe are connoiseurs of resorts, and would be drawn by the charm of new scenes and a unique climate to spend their months of recreation with us. They would appreciate our resorts even more highly than we do ourselves. At present, however, thousands are held back by the high charges of the railway companies. Only those with an excess of money can undertake the journey merely for pleasure, but instead they avail themselves of cheap Eastern railway charges and go to Eastern resorts, or else cross the Atlantic and enjoy the moderate expense of life on the continent. This would be greatly changed if the railways would abate their heavy charges, and thus open the way for thousands to California. Our State will never be fully appreciated by the great population at the East until the barriers are broken down and the journey across the continent is brought within the reach of those with moderate means. We hope this change will not be long delayed.

Announcement Extraordinary.

We lately noticed the following good thing at L. Sage's Congress Springs Hotel, Santa Clara county. It is creditable, no doubt, jointly to "Mark Twain" and "actual facts and occurrences in hotel experience." We give it for the interest of all concerned.

SPECIAL NOTICE

This hotel has been built and arranged for the special comfort and convenience of summer boarders. On arrival each guest will be asked how he likes the situation; and, if he says the hotel ought to have been placed up upon the knoll or further down toward the village, the location of the house will be immediately changed. Corner front rooms, up only one flight, for every guest. Baths, gas, hot and cold water, laundry, telegraph, restaurant, fire alarm, bar-room, billiard table, daily papers, *coupe*, sewing machine, grand piano, and all other modern conveniences in every room. Meals every minute if desired, and, consequently, no second table. English, French and German dictionaries furnished every guest, to make up such a bill of fare as he may desire, without regard to the bill-affair afterward at the office. Waiters of any nationality and color desired. Every waiter furnished with a libretto, button-hole bouquet, full-dress suits, ball-tablets, and his hair parted in the middle. Every guest will have the best seat in the dining-hall and the best waiter in the house. Any guest not getting his breakfast red-hot, or experiencing a delay of 16 seconds after giving his order for dinner, will please mention the fact at the office, and the cooks and waiters will be blown from the mouth of a cannon in front of the hotel at once. Children will be welcomed with delight, and are requested to bring hoop-sticks and haw-keys to bang the carved rosewood furniture especially provided for that purpose, and peg-tops to spin on the velvet carpets; they will be allowed to bang on the piano at all hours, yell in the hall, slide down the bannisters, fall down stairs carry away dessert enough for a small family in their pockets at dinner, and make themselves as disagreeable as the fondest mother can desire. Washing allowed in rooms, and ladies giving an order to "Put me on a flat iron" will be put on one at any hour of the day or night. A discreet waiter, who belongs to the Masons, Odd Fellows, Knights of Pythias, and who was never known to even tell the time of day, has been employed to carry milk punches and hot toddies to ladies' rooms in the evening. Every lady will be considered the belle of the house. The office clerk has been carefully selected to please everybody, and can play draw poker, match worsteds at the village store, shake for the drinks at any hour, day or night, play billiards, good waltzer, and can dance the German, make a fourth at eucher, amuse children, is a good judge of horses, as a railway and steamboat reference is far superior to Appleton's or anybody else's guide, will flirt with any young lady, and not mind being cut dead when "pa comes down," can room 40 people in the best room in the house when the hotel is full, attend to the annunciator, and answer questions in Hebrew, Greek, Choctaw, Irish, or any other polite language at the same moment without turning a hair. Dogs allowed in any room in the house, including the w(h)ine room. The proprietor will always be happy to hear that some other hotel is "the best in the country." Special attention to parties who can give information as to "how these things are done in Yewrup." The livery connected with the establishment is complete in all its details. Our horses all can trot to the wire in 2:15 and less. Pedigrees furnished, carriages and vehicles with coat of arms and heraldic devices of all descriptions and to suit the most fastidious. Footmen and drivers uniformed and can converse on any subject, a classical education being made a condition of service. The proprietor will take it as a personal affront if any guest on leaving should fail to dispute his bill, tell him he is a swindler, the house a barn, the table wretched, the wines vile, and that he, the guest, "was never so imposed upon in his life, will never stop there again, and means to warn his friends."

News in Brief.

THE bicycle riders of the United States are assembled at Chicago for convention.

IN Cincinnati the microphone is used to detect the leakage of water in the pipes.

THE Philadelphia *Times* says the Knights of Labor number 70,000 in Pennsylvania.

PROF. WM. B. RODGERS, President of the National Academy of Sciences, is dead.

THE strike in the Pittsburg coal mining district, threatens to extend to 1,200 miners.

MARSHAL HENRY, of Washington, estimates that the cost of the Guiteau trial will be $50,000.

IT is believed that Dillon and Davitt have virtually superseded Parnell in the leadership of the Irish party.

THE Mexican Central road has been built 223 miles northward from the capital, and 163 miles southward from Paso del Norte.

THE Commissioner of the Land Office has refused to deliver certain land patents, having ordered an investigation into alleged frauds in the entries on which they are based.

THE President has nominated Pay-Inspector Joseph A. Smith to be Chief of the Bureau of provisions and clothing and Pay-master-General of the Navy, with the rank of Commodore.

MINNEAPOLIS is to be lighted by electricity generated by water power at the Falls of St. Anthony, in the heart of the city. A company has been organized, with a capital of $200,000.

MRS. MARY LEBAN BERGER, sister of the late Cornelius H. Vanderbilt, will contest his will, upon the ground that it was fraudulently procured by Terry and others, to whom he left his property.

A PARTITION sale of the Bennett property in New York realized $1,361,000, each parcel being knocked down to J. G. Bennett, although there was lively bidding. The old *Herald* building on Nassau street sold for $650,000.

THE Carson *Appeal* reports that a gentleman arriving from the eastern part of the State, says that a war between the Shoshones and the Bannocks is nearly certain to begin at once. The most bitter hatred exists between the two tribes.

GOV. PACHECO decided to give his cadetship to Anapolis to John Taylor McMillan, of Los Angeles. The matter was left to a competition at Los Angeles, and those who conducted it informed Pacheco by telegraph of the success of McMillan.

THE railroad war between the Denver and Rio Grande Railroad Co., who have been trying to keep the Denver and New Orleans road from entering the Union depot, is still raging. In a fight two of the Denver and Rio Grande engines were wrecked.

THE post office department has decided that there is no law to prevent a box for receiving mail being placed by railroad employes in a depot, and the mail matter being placed therein. It is a convenience to the public, which would not be readily yielded.

THE city of Texarkana is a phenomenal city. It lies in the two States of Texas and Arkansas; hence its name. The State line runs through the center of its chief street, and on each side is a population of 3,000. It is considered the gateway of the Southwest.

THE North American Silk Exchange, recently incorporated in New York, is negotiating for 350 acres on Long island for a nursery of mulberry trees and for 2,000 acres in Kentucky on which to raise silkworms. The principal supply of eggs has been obtained at Corinth, Miss.

THE Census Bureau has issued a bulletin showing that the total population of the United States is 50,155,780; total area of country, 2,970,000 square miles; total number of families, 9,945,916; total number of dwellings, 8,955,812; number of persons to a square mile, 17.29

THE President, in a message to Congress, recommends that no immediate measure be made to remove the Apaches from the Mescalero and Jicarilla agencies, but that Congress provide funds for the adequate support of those Indians at the present reservation occupied by them.

THE Pittsburg district convention of coal miners decided to order a strike for June 1st, but only in the pit of the operators who are filling contracts for the miners now on strike, or for those supplying the city yards. It was resolved to submit passively to the importation of colored laborers.

THE House Committee on Territories, has proposed a bill, providing a civil government for Alaska. It places the government of the proposed Territory in the hands of a District Attorney, District Judge, Clerk, Board of Commissioners and Marshal, who shall also be Customs Collector, etc.

SECRETARY TELLER announces his policy regarding the Indians as adverse to dictation from churches and pilanthropic organizations. He favors liberal expenditures for education, granting patents to tribes for their lands and making the Indian self-supporting, but relieving him of his gun and issuing lumber instead of tent material.

GEOGRAPHICAL and scientific circles are interested in the accounts brought to England by Capt. Burton and Commander Cameron, from the gold coast of Africa. The former stated that on landing he found women washing sand for gold, and earning from half a dollar to four dollars a day. They found gold spangles after the rain everywhere in the streets and roads.

A Legend of Orizaba.

Written for the RURAL PRESS by J. M.

I.

Where the restless, wild Atlantic
Beats the sands of Vera Cruz,
Inland far a form gigantic,
Meteor l ke, the traveler views.
High in spectral grandeur towers
Orizaba's peak of snow;
Verdant groves and tropic flowers
Deck the smiling vale below
Deck the mountain skirts the flowers,
Decks the crest a veil of snow.

II.

Rivals for the prize contending,
Arctic pole and torrid zone,
Each a graceful raiment lending
To robe the mount from foot to cone.
In the landscape, far extending,
Coffee shrubs unnumbered grow,
Fig tree, lime and orange blending,
Stretch in panorama show,
Jessamine, rose and lily blending,
Shaded by perpetual snow.

III.

Rounded dome and pointed steeple
On the plain their shadows cast,
Where is seen the wavy riffle
Of the river coursing past.
In that vale with fragrance laden,
As I rambled years ago,
Loved I well a beauteous maiden,
One who did my peace o'erthrow
Loved and wooed a dark eyed maiden
Of the land of flowers and snow.

IV.

Not a word by either spoken
Told the secret of our breast;
Tender looks the only token
Of this passion unconfessed;
Stolen glance from eyes delighted,
Faith eternal as the snow,
Constant as the radiant white head
To its verdant base below.

V.

Thus I sipped the cup of pleasure,
Dallying in the groves of love,
Doting on my dark-eyed treasure,
Lustrous as the stars above.
Ah, that flower-embedded villa!
Where I wandered to and fro,
Waiting for the light mantilla
That encaged my heart below
Watching for her lace mantilla
As to mass or feasts she'd go.

VI.

Open wide the villa's portal,
Wide the hall and winding stair,
Guarded not by any mortal,
Yet I dared not enter there.
Stern was her sire, and haughty,
Icy as the peak of snow;
Much he loved his child, and naught he
Judged her equal here below;
Equal to his daughter, thought he,
Solely angel hosts could show.

VII.

Watchful eyes our love discovered;
Fearful was the story told
Of the famished wolf that hovered,
Threatening the unguarded fold;
And the lamb (my loved doncella)
Sheltered from the prowling foe;
Never more the lace mantilla
Could my straining vision know.

VIII.

Came she not. Her stay protracted
Told me that my hopes were vain,
Told my hopes and heart distracted
That we ne'er should meet again.
Shadows of despair came o'er me,
Clouds of darkness seemed to throw
A gloom o'er hill and vale before me,
Mists enwrapped the peak of snow;
Hill and vale and crest before me
Seemed to feel and share my woe

IX

Sudden from my dream awaking,
In her father's gaze I stood;
There abrupt my purpose breaking
For his daughter's hand I sued,
Her true heart and faith possessing—
Would he deign the boon bestow?
With the gift a father's blessing?
Short and sharp he answered, "No!"
Short and sharp, instead of blessing,
Came a brief laconic "No!"

X.

For a space my wrath concealing,
Sussive, honied words I spoke;
To his softer self appealing,
All in vain; till thus I spoke:
"Heartless man can nothing move you?
Pity my fate no pity show?
You are like the peaks above you,
She is like the vale below—
Like the warm vale before you,
Nestling near the frigid snow."

XI.

Then I spoke in tones emphatic
Long in wonder did he stare;
Doubting not a strange lunatic
Had escaped his guardian's care,
Then his sterner mood returning,
Few his words, but like a blow
They fell upon my senses burning;
From his roof he bade me go
From his roof with gesture spurning
All discourse, he bade me go.

XII.

Slighted, stunned, my suit rejected;
One sole thought remained to thrill
With gladness my sad soul dejected,
She was true and loved me still.
From her vine-entangled lattice
Came a greeting soft and low;
Whispered thro' the webbed clematis:
"*Tan valer, te quiero yo*—"
Came through ivy and clematis,
"Your's my heart where e'er you go."

XIII.

"Away!" I cried, "ye fears despondent!
What to me her sire or kin!
To my heart is her's respondent;
Ne'er their grace I'll seek to win.
With my lute I'll take my station,
When her evening lamp's aglow;
There (as custom of her nation)
Sweet in song my love shall flow—
Sweet in song my heart's ovation,
Spite of sire or kin, shall flow."

XIV.

Soon as shades of eve descending
Marked the close of parting day,
With the night-bird's warble blending
Might be heard a lover's lay.
Now in joyful cadence floating,
Now in plaintive numbers low,
Varied strains—and each denoting
Feelings deep of joy or woe
Varied strains to her devoting
All my life in weal or woe.

XV.

Strange it seemed that to my greeting
Cold she list, nor tarried long.
Seemed her silhouette retreating
Ever to avoid my song.
"'Tis a woman's whim—a notion,"
Thought I to myself below,
"Thus to test my heart's devotion,
Coldness and reserve to show;
And her strange and flitting motion
Means a shy reserve to show."

XVI.

So I followed her undaunted,
East or west where e'er the light
Of lamp or taper shone, I chanted
In the silent air of night.
Dark the villa stood and lonely,
Where once a hundred lights did glow;
Why deserted, now with only
One sad flickering ray to show?
Why, oh why! thus drear and lonely
Does it life and joy forego?

XVII.

Alas! as from a dream I started,
When a neighbor told the tale;
Sire and maid had long departed,
Journeying far beyond the vale.
She to whom I sang so fervent,
On whom I did my love bestow,
Was an aged, trusty servant,
Guardian of her villa. Lo!
An ancient, worthy, maiden servant,
Aged sixty years or so.

Ojai Valley, Cal.

A Real Sweet Story.

It was by far the worst quarrel they had ever had, and they had had many, for she had a temper, and they were both of them impulsive young people, with very little self control.

"You are a false, selfish, untruthful, manlike man," said she.

"And you a suspicious, unreasonable, unwomanly woman," said he.

"Take back your letters," she cried, flinging a parcel tied with hyacinth blue ribbon on the floor at his feet.

"I will," he muttered, between his clenched teeth, picking up the parcel and throwing it into the fire, where it blazed brightly for a moment or two, and then flew away in thin uncanny black fragments up the chimney. As the last fragment disappeared, Rick turned again to Letty, with frowning brow, and asked, as he had asked before, "Do you still persist in accusing me of deceit and falsehood?"

"I do," she replied, "unless you show me the charm."

"I will not show it to you," he declared, with violent emphasis. "If my word be not sufficient, I refuse to give you further proof. I wonder that you dare insult me by asking it. And I also wonder how you, believing me to be false and untruthful, can be willing to trust your future to me. And, to speak frankly, I begin to think we have made a great mistake in supposing that we could spend that future happily together, for I am fully convinced we are anything but

Two souls with but a single thought,
Two hearts that beat as one.

[These lines were quoted with most sarcastic inflection.] And, furthermore, I also begin to think that perhaps it would have been better if we had never made this mistake—If we had never met, in fact."

"Oh, indeed, sir!"—with great assumption of dignity. "Have you just arrived at that conclusion? I have been sure of it. But there is nothing easier than to part. Your letters are already disposed of. To-morrow I will send back your ring and picture. And then, when I am free once more, I can try and please my mother (our acquaintance, as you are well aware, has never pleased her), and in pleasing her I may find I am doing a pleasant as well as a wise thing for myself."

"Are you referring to Broughman Brown?"

"I am referring to Broughman Brown."

"By heavens!" exclaimed Rick, seizing his hat, "this is too much. Letty, good-bye forever!"

But Letty began humming an air from "Patience," drumming an accompaniment on the window pane, and vouchsafed no answer. Rick rushed from the room. The humming and drumming ceased instantly, and the whilom performer listened intently. Five minutes passed and still the street door did not slam. "He is waiting for me to come out into the hall and beg his pardon, I suppose," she said, with a defiant grimace, "but I won't," and she turned again to the window as the door shut with a bang.

And then she flung herself on the lounge, kicked of her slippers, and cried like a sunshower. Rick gone, and gone forever!—Rick, whom she had loved so dearly, and who had loved her so dearly, for two long years. And why? Just because that silly, giggling Lena Varian, with her pale blue eyes and straw-colored hair, had chosen to tell fibs about him. And, shaking the tears from her lashes, she began scolding herself as hard as she had scolded poor Rick. "The idea, Letty Lounsberry, of your believing that girl before him! What possessed you? He did flirt a little with her, that is true; but all men flirt a little with girls who persist in admiring them and flattering them. But he never gave her the little gold pig—your Christmas gift to him—never! How she got it I can't imagine; but he would have explained if you had given him a chance." And the absent mother, gone to Aunt Emory's for a two days' visit, came in for a share of reproach. "If she had only let our engagement be known instead of insisting upon our waiting until Rick was 21, and I had not been obliged to carry my engagement ring in my back hair, the only place where it is safe from baby's—goodness gracious! baby!" And Letty suddenly remembered that ever since Rick came in to make a morning call, knowing Mrs. Lounsberry was absent—poor fellow! he'd have stayed away if he could have foreseen his reception—baby had been sitting alone in the dining-room in the middle of the big dining table, surrounded by all the pickle and marmalade jars and fruit cans and catsup bottles and jam pots out of the store-room. For it was the monthly house-cleaning day, and the store-room fell to Letty's share, the foreign help being gifted with too great a talent for smashing and breaking, to say nothing of an equally great talent for abstracting and devouring both sweets and sours. Letty sprung from the lounge, thrust her feet into her slippers, and hastened where duty had been calling her for some time. Baby sat, as good as gold, nursing a bottle of tomato sauce, snugly wrapped in a dish towel, in the very spot where she had been when Rick's ring summoned her to the door. Only one small flask lay broken on the floor, filling the air with the subtle fragrance of garlic. "That won't be missed," said Letty. "Thank fortune, there is no worse mischief done." But the "thank" was scarcely uttered, when her eyes fell upon the last jar of the famous peach marmalade, the secret of the making of which died with grandmamma, and which was being carefully kept for Aunt Emory's (Aunt Emory was an old maid worth $30,000) birthday. There it stood directly in front of baby, with more than half of its thick paper torn off, and a yawning cavity made in its precious contents by little scooping fingers.

"Oh, baby, why couldn't you have taken any jar but that?" asked Letty, reproachfully and dramatically.

But baby evidently had no excuse to offer for not doing so, for she kept on crooning to her bottle doll, while her sister hastily fashioned another paper hat and tied it securely over what remained of the original covering.

Then said baby, "Rick kiss I—nice Rick!"

Oh, that is what he was doing when she foolishly imagined he was waiting for her to come and implore her forgiveness—bidding good-bye to baby. She might have known it, for he had always loved baby dearly.

"Yes baby; nice Rick, dear Rick, good Rick; but, for all that, the ring he gave me goes back to him to-morrow unless I hear from him to-night. How dare he wish that we had never met?"

But she did not hear from him that night, and the next day the little band of gold was released from its hiding place in her thick brown hair, and a too faithful messenger placed it in Rick's hands as he left his place of business. But, ah! what a silent, sorrowful maiden wandered about the Lounsberry dwelling thereafter! What a listless, weary voice repeated the nursery rhymes that baby demanded fifty times a day!

"No nice—no more," said baby, missing the merry tones and happy laugh.

But Mrs. Lounsberry was not at all displeased with the turn affairs had taken. Broughman Brown suited her much better as a prospective son-in-law than Richard Creighton. One was a wealthy young brewer, the other a poor clerk in a counting-house.

"Letty will soon get over it," she said to Letty's father, whose heart ached at the sight of his daughter's sad face. "A first love disappointment is always hard to bear for a while. I thought I'd have died when Steph. Ford married my cousin; but I didn't. I lived to marry you, and I have a seal-skin cloak, and Mrs. Ford hasn't even a jacket."

And so Broughman Brown, who was really a manly, generous, good-hearted fellow in spite of his beer and wealth, encouraged by the maternal head of the house, began devoting himself in the most ardent fashion to Letty; and she, seeing her mother's pleasure thereat, and hearing no word from Rick, received his attention in a passive, unresponsive way.

Three months went by, and it was Aunt Emory's birthday, and that eccentric old lady had decided to divide it among the family, lunching with one portion, dining with another, and supping with a third. The lunch party was given at her sister Lettia's (Mrs. Lounsberry), and some half a dozen old friends and some dozen relatives were bidden to the feast. Letty, in a sea-green gown (Rick's favorite gown), with a spray of pink hyacinths (Rick's favorite spring flower) in her hair, went quietly about welcoming the guests, Broughman Brown following her like her shadow, until lunch was announced. Then taking her place at the table, the young man still near her, she raised the cover from and dipped a spoon into the last jar of grandma's famous peach marmalade (she had had it placed before her, trusting to be able to hide the mischief baby had done), when somebody said, addressing her mother: "Have you heard that Richard Creighton is going abroad for his health? He has given up his situation, and sails in a day or two. They say he has failed fast lately."

And the very next moment Aunt Emory fixed her spectacled eyes upon her neice's poor pale face, and asked sharply: "What's the matter, child? Do you see anything dreadful in the sweets?"

"No, ma'am," answered Letty, with a pitiful attempt at a smile, when the spoon struck something harder than preserved peaches should be.

"Let me help you," said Broughman; and with one turn of his wrist he placed upon the dainty China shell before her—a wad of paper.

"And so that is the last of the celebrated marmalade, is it?" said Aunt Emory. "I don't want any. I prefer my sweets unmixed with unknown foreign substances. Take it away, Norah."

But Letty was already slowly unrolling the paper (it proved to be the missing part of the jar's original hat)—a rather difficult thing to accomplish, as it stuck persistently to her small fingers; but accomplished at last, when out rolled the little gold pig. And on the inside of the paper was scrawled, in Rick's bold hand, these words:

"MY DARLING.—How foolish we are—I mean, I am! Here is the charm. Miss Varian had it about ten minutes last night—only long enough to show it to you and tell you a story about it. Baby will give it to you. Had no paper; so I tore a piece off one of your jam pots. Will see you to-morrow evening. RIX."

Never did any young lady so suddenly break through all the conventionalities of society; never did daughter so quickly forget the wishes of her mother; never did niece so unflinchingly brave the displeasure of a $30,000 aunt, as did Letty Lounsberry the instant after she had read this note.

"Broughman," she cried, looking at him with beautiful, beseeching eyes, "I must see Rick. *I must—I must.* You will go and bring him to me, dear?"

It was the first time she had ever called him "dear," and, alas! he felt that it would be the last. For a moment he pulled his long mustache nervously. "We are not very good friends, you know," at last he said.

"Yes I know. But I am to blame for that too," said Letty, hurriedly. "Forgive me, Broughman, but I must see Rick."

And the good fellow, hesitating no longer, turned from that imploring face, and with grief tugging at his heart-strings, went off to see his rival. He found him, and brought him back to the girl they both loved.

And what do you think Aunt Emory did—Aunt Emory who had over and over again said, only as Mrs. Broughman Brown, Letty should inherit any of her money. "Left the house in a passion?" not a bit of it. She laughed and laughed until she could laugh no longer.

"Now I shall have something new to tell folks," she said. "They must be tired and sick of my old yarns. I'm sure I am. Love, gold pigs, jealousy, and marmalade all mixed up together. It's one of the funniest things I ever heard in all my life."

"I'm glad you think so," said Mrs. Lounsberry. It don't strike me that way. What are they going to live on?"

"Oh, I'll look after them," said aunt Emory; and her remark made a very good ending to this real sweet story.

WOMEN'S STRENGTH.—The strength of women lies in their heart. It shows itself in their strong love and instinctive preception of right and wrong. Intellectual courage is rarely one of their virtues. As a rule, they are inclined to be restless and excitable, allowing their judgments and actions to be swayed by quick emotions of all kinds, but, above all, it is in their hopefulness and endurance that they find their chief power. Who is the last person to give up hope in the case of a member of the family who has apparently gone to the bad? What mother or sister with deep and ardent love for such will ever cease to cherish hope or endure suffering on their account? The patience of women is proverbial, and their whole lives are bound up in their affection. Few people will deny that love in one form or another makes up the beauty of life to women. It enters into all she does. Any work outside her immediate circle is undertaken most often from pure desire to help some one else to know something of the mysterious happiness of love. Unlike men, women chiefly look for personal intercourse with those for whom they are working. If their interest lies among the poor, they are desirous of sympathetic personal acquaintance with them; and very little good work of a lasting kind has been done by women without their own influence of love being brought to bear on the individual case.

TRACINGS ON GLASS FOR THE LANTERN.—The following method, by George Smith, appears to be satisfactory. A piece of finely ground glass is rubbed over with a trace of glycerine, in order to make it as transparent as possible. It is now easy to write or draw on the prepared surface with a hard and finely pointed black lead-pencil, and the glass is so transparent that the finest details of any engraving, over which it can be placed, can be seen quite distinctly. The drawing having been finished, the plate is washed with water, in order to remove the glycerine, and dried. A thin coat of Canada balsam or of negative varnish now serves to render the slide permanently transparent and ready for the lantern.

Single Women.

A clever old maid once said that it was far better to be laughed at because you were not married; than not be able to laugh because you were. There is sound logic in that. It is well for woman to marry if she meets a good, true man, who loves her and whom she loves; but if she be not suited, better that she remain single. The majority of old maids are helpful, loveable, and sweet-tempered, and fill their allotted niche as acceptably as do their married sisters. Are they not more to be honored than they would have been had they merely married for a home or position? Our young ladies have erroneous ideas upon this subject. They feel almost disgraced if they have arrived at a mature age and are not yet able to write Mrs. before their names. Their whole ambition is to get a husband, by hook or crook; but get him somehow they must. Consequently, they take the first man that offers himself, whether he really suits them or not.

Now, girls, do not marry in haste. Get the best education possible, help about domestic affairs, and enter upon some trade or profession for which you have a taste, and master it. Skilled labor is always well paid. Don't spend your time repining because you cannot see the coming man. If you never see him you can live useful, happy lives. You think if you had a husband you would have a strong arm on which to lean, a sharer of sorrow and trouble. Alas! many a slender woman has not only had to stand alone, but serve also as a prop for children and husband; and very few wives find in their husbands all the sympathy and companionship they desire. If you are good for anything you will not be hurt by remaining single; neither will you be elevated by becoming "John's wife." Do your duty in life, and you will count for one in the world whether you are married or single.

A PHOTOGRAPHIC GUN.—Muybridge must look out for his laurels. His instantaneous pictures of the movements of the horse have now been fully equaled by the efforts of M. Marrey, a French naturalist, in taking a photograph of birds on their flight. The difficulty in this effort was to keep the object in the field of the camera. To remove this difficulty this gentleman has devised what may be called a photographic gun. The barrel is a telescope—that is to say, it contains the lenses of a camera. There are 16 apertures which take the place of the chambers. The photographer puts in a sensitized plate behind these apertures, and performing an operation analogous to cocking the weapon, he is ready for the field. On seeing a flying bird he takes aim and pulls the trigger, the chamber revolves once, and in one second he obtains 16 little pictures of the bird in various positions. Hitherto, M. Marrey has made use of his photographic gun for the purpose investigating the flight of birds. In these cases, clearness of definition is of little consequence, so long as a dark image or silhouette the shape of the bird is obtained, so that it matters little whether the object aimed at be focused or not; but it is obvious that in a multitude of other cases the image can be obtained perfectly in focus. Indeed, it will be seen that the system of thus carrying a small camera to be steadied against the shoulder admits of extension, and may prove of the utmost service to the photographer.

SMELL OF PAINT.—To get rid of this most objectionable odor in a chamber or a living-room, slice a few onions and put them in a pail of water in the center of the room; close the doors, leave the window open a little, and in a few hours the disagreeable smell will have almost gone. Another method is to plunge a handful of hay into a pailful of water, and let it stand in the newly-painted room over a night; this plan is also effectual. The foregoing have the important advantage of being simple remedies, as the necessary materials are always easily obtainable. Yet another plan, but it is rather more complicated. Place a grate of lighted charcoal on a piece of flag or slate in the center of the room, and throw on it a handful or two of juniper berries; shut out all ventilation from the room for 24 hours. The doors and windows can then be opened, when it will be found that the nasty sickly smell of paint has entirely gone. The furniture may be left in the room during the process, and none of it will be injured. But the best way to avoid the smell of paint is by not having the painters in the house.

BLACK WALNUT can now be manufactured very cheaply. One part of walnut peel extract is mixed with six parts of water, and the wood is coated with the solution. When the material is about half dry a solution of bi-chromate of potash with water is rubbed on it, and then your walnut is ready. Furniture dealers have been known to make excellent walnut from very poor pine, but the difference was slightly perceptible; however, this method is said to defy detection.

A LITTLE girl of seven years exhibited much disquiet at hearing of a new exploring expedition. When she was asked why she should care about it, she said: "If they discover any countries, that will add to the geography I have to study. There are countries enough in it now."

"PAPA, is it nice to make remarks about people's dress?" "Why, certainly not, darling; what do you ask that for?" "Nothing papa, only mamma said my dress was awfully shabby, and wondered why papa hadn't noticed it long ago."

Young Folks' Column.

Our Puzzle Box.

Cross-Word Enigma.

My first is in young, but not in old;
My second is in lead, but not in gold;
My third is in long, but not in short;
My fourth is in gill, but not in quart;
My fifth is in two, but not in three;
My sixth is in wood, but not in tree;
My seventh is in some, but not in all;
My eighth is in bat, but not in ball;
My ninth is in ounce, but not in dram;
My tenth is in fence, but not in dam;
My eleventh is in meat, but not in ham;
My whole you'll find a river of the West,
If all these letters you have rightly guessed.

ED. J.

A Floral Bouquet.

1. An article, a portion of the body and cash.
2. Unmarried men, a measure and a heavy weight.
3. A projection upon a wheel, an exclamation and a measure of distance.
4. A domestic quadruped and to slide.
5. A cunning animal and a covering for the hand.
6. A falsehood and to be without.

JERRY.

Pyramid Puzzle.

The initials mean departing; the finals, a frame of bars.
1. A consonant.
2. A conjunction.
3. A girl's name.
4. A kind of bed.
5. To adorn.

A. B. C.

Curtailments.

1 Curtail to descend and leave a transgression of divine law.
2. Curtail closely confined and leave an instrument for writing.
3. Curtail prodigious and leave to embrace.
4. Curtail a building spot and leave to be seated.
5. Curtail a hoop and leave a curse.
6. Curtail frequently and leave a preposition.

KATHARINE.

Problem.

Put nine sheep in four pens and have an odd number in each pen. How is it done, and how many sheep will there be in each pen?

Answers to Last Puzzles.

NUMERICAL ENIGMA.—"Don't give up the ship."

LETTER CHANGES.—1. Bane: cane, Dane, Jane, mane, vane, wane. 2. Arbor: ardor, armor. 3. Bard: bark, barn, bars, bart.

DECAPITATIONS.—1. Tom, on. 2. Seat. eat. 3. Bray, ray.

NAMES OF TOWNS.—1. Bridge-water. 2. Sun-cook. 3. Spring-field. 4 Sea-brook. 5. Little-ton.

REVERSALS.—1. Reed, deer. 2. New, wen. 3. But, tub. 4. Ton, not. 5. Level, level. 6. Liar, rail.

Jip and Jack.

All the little boys on Twenty-second street were in a state of excitement. You could see it in their flushed faces and clenched fists—and—yes, I am sure I noticed tears in two pairs of bright eyes.

Jack and Jip must have wondered why their little friends stopped so often in their play to caress them. Perhaps the doggies never knew; but I know, and am going to tell you all about it.

Jack and Jip were two little orphan dogs. Nobody knew where they came from; but one day they came to play with the little boys in Twenty-second street, and there they are to-day.

Such fine times as the children had! No game of foot-ball was complete without Jack, and Jack was never so happy as when with the children. Little Jip was almost a baby, always happy, and always under foot, but he enjoyed it all. And so it came about that the little boys adopted these stray waifs, and fed them from their own lunches. Never were two dogs so loved.

But to-day the little faces were sober, and the little eyes were filled with tears. Jack and Jip were in danger, for all unlicensed dogs were to be shot.

Fred and Jamie sat on the sidewalk and talked it over. They knew that it was hard enough for their father to provide for his little boys; it was plain that he could not help them. Poor little men! they were in real trouble.

Finally, Jamie said:

"Why, Fweddy! I've got 'leven cents!"

"And I've got seven!" said Freddy.

Then they began to dry their tears. There seemed to be a way out of this, after all.

Other little boys contributed their mites; what the children could not give they begged of friends, and went from house to house, telling their little story. And everywhere Jack and Jip followed them, and wagged their delighted tails.

You may be sure that it was not long before there was quite enough money raised; the licenses were paid, and the dogs were saved. To-day there are no happier little dogs in the world than the little Chicago waifs—and, if the dogs are happy, what can you say of Jamie and Fred?—*Tribune.*

A FEW days ago a little child gave expression to an old story in the following manner: It seems that the little fellow had discovered a bee crawling upon his hand. Finally the bee stopped for a moment, and, after remaining stationary for an instant, stung the little fellow. When the cry of pain was over, the little child said to his mamma that he didn't care for the bee's walking about on him, but he didn't like to have him sitting down on him.

Good Health.

Warts and Their Cure.

A correspondent of the *Herald of Health* writes to that journal as follows, on the subject of warts: Can you explain to your readers the cause and cure of these troublesome and disfiguring excrescences? There seems to be a mystery and superstition connected with them, and they are said to be *banished* (that is the phrase) by some charm or incantation—the relic of a bye-gone age. One April fool's day I saw a smart boy pick up a nicely folded parcel, he having forgotten it was all-fool's day; upon opening it, he cried out:

"Gorry! somebody has rubbed every one of these beans on his warts, and now he has given them to me. I shall get them."

And sure enough, shortly after, his hands were covered with them. Another counted his warts, and a friend, to cure them (subsequently I learned), made, in an exposed place, as many lines at there were warts, and the sufferer was cured as the marks disappeared. Another dropped as many beans into a well as he had warts, and the warts disappeared as the beans decayed. I saw a young girl with her eyes intently fixed upon the new moon, while she knelt upon the ground. Amused at this seeming lunar worship, I saw her reach her hand behind her and pick up the first object that met her touch, and this she rubbed upon the warts that marred her shapely fingers, in the full faith that it would banish them.

This occult dealing with this superabundant cutaneous supply is very prevalent even in intelligent families. We have tried the skins of a potato, frequently applied, milk weed, bean leaves, alum and caustic—all without avail. Will you enlighten us, for you are our oracle in all matters relating to health or comeliness.

To the above the editor replies as follows: We print the above from our esteemed correspondent only to say we don't take any stock in it. Warts come and go all the while on the hands of the young, whether treated or not, and the circumstances regarding their appearance and disappearance in connection with something done, give rise to the various superstitions regarding them.

FAT OF THE OLD AND YOUNG.—The influence of age on the chemistry of the body is a department of physiology as yet very imperfectly investigated. The composition of the fat, however, at different periods of life, is obviously one of the simplest problems connected with the question, and it has been lately investigated by Lanquer. In newly born children the fat has a particularly firm consistence, constituting a peculiar tallow-like mass, with a melting point of 45° C. The fat of adults, however, separates at the ordinary temperature of a room into two layers. The upper layer is completely fluid, translucent and of a yellowish color, and only solidifies at temperatures under zero, Centigrade. The lower layer is a crystalline mass, which has its melting point at 36° C. Further investigations were made on about a kilogram of each kind of fat. The fatty acids obtained from the fat of newly born children (after precipitation with hydrochloric acid) were found to melt at 51° C., and those obtained from the fat of adults had a melting point of 38° C. The former was found to contain three times as much palmitic and stearic acid as the latter. The palmitic acid preponderated over the stearic in each kind of fat, but much more in that of children than of adults, the proportion being in the former four to one, but in the latter nine to one. There are 86% of oleic acid, 8% of palmitic acid, and 2% of stearic acid in the fat of an adult; whereas in the child the proportion of oleic acid is only 65%, the palmitic acid 28%, and the stearic acid 3%.

DEAD DRUNK.—M. Grehaut made an interesting communication to the Biological Society of Paris at a recent meeting, on the subject of fatal doses of alcohol. In order to determine what quantity of alcohol is present in blood when death ensues from drinking it in large quantities, he made a series of experiments, all of which gave the same results. By means of an œsophageal syringe, he injected into the stomach of a dog 30 grams of alcohol every half hour until the dog died. He then collected some of the blood of the animal, scrupulously taking the same precautions as when an analysis of the gases present in the blood is made. He then distilled it *in vacuo*, using for the purpose, with the necessary modifications, a mercury pump, such as is employed for analyzing the gases of the blood. M. Grehaut's experiments convince him that death happens when the blood of the animal presents the proportion of one part of absolute alcohol to 100 of blood; that this substance acts directly on the constituent elements of the blood; that the condition known as "dead drunk" exists when drunkards continue drinking, but when the alcohol imbibed ceases to be absorbed and the blood presents the proportion of one part of alcohol to 195 of blood; that is to say, almost the half of the quantity present in the blood when death is caused by drinking. M. Grehaut believes that, if death from drunkenness is less frequent than might be expected, it is because drunkards generally stop drinking when this proportion exists (one in 195).

Domestic Economy.

TAPIOCA PUDDING.—One cup of tapioca, one quart of milk, four eggs, one tablespoonful melted butter, and two tablespoonfuls of sugar; nutmeg. Soak the tapioca four hours in two cups of cold water; it should absorb it all. Warm the milk slightly, and soak the tapioca in this an hour longer. Rub butter and sugar to a cream, and having beaten the eggs very light, whip all these together, before putting in tapioca and milk. Pour into a buttered pudding-dish, grate a little nutmeg on top, and set in the oven. In five minutes stir up carefully from the bottom to hinder the solid settling of the tapioca. Shut the oven and bake until "set" and nicely browned. Eat with pudding-sauce, or with sugar and butter, if you send to table warm. It is good cold with milk and sugar.

GRAHAM BREAD.—No. 1. Three pints of graham flour, or two pints of graham and one pint of wheat flour, one pint warm water, one cup yeast, one-half cup molasses, a little salt, one-half teaspoonful saleratus. No. 2. One pint sweet milk, two pints graham flour, one-half cup of molasses, to which add one teaspoonful soda, and one of salt. Mix thin enough to pour. No. 3. Three-quarters of a pint of graham flour, three-quarters of a pint white flour, a handful of Indian meal, a teaspoonful salt, three heaping teaspoonfuls of baking powder. Mix all thoroughly together while dry. Then stir in half a small teacupful molasses; add sufficient cold water or sweet milk; and water to make a stiff dough. Bake immediately.

PEANUT CANDY.—The thick peanut candy sold by the confectioners is made by removing the shells and skins from roasted nuts, putting them an inch thick in a buttered tin pan, and pouring over them sufficient sugar boiled to a caramel point to hold the nuts together, but not to cover them. Directly after sugar has reached the degree of boiling it begins to burn; at this moment the sugar boiler must be taken from the fire, set at once into a pan of cold water to check the boiling, and the caramel, as the boiled sugar is now called, is poured over the nuts. White sugar is to be used in making this candy.

CREAM CAKE.—Two cupfuls of pulverized sugar, two-thirds of a cupful of butter, four eggs, half a cupful of milk, half a teaspoonful of soda, one teaspoonful cream of tartar, three cupfuls of flour. Bake in jelly-cake pans and spread between the layers the following: Cream—Half a pint of milk, two full teaspoonfuls of cornstarch, one egg, one teaspoonful of vanilla, half a cupful of sugar; let the milk come to a boil and stir in the cornstarch made into smooth paste with a little cold milk; take out a little of the boiling milk and add it gradually to the well-beaten egg and sugar; stir this into the rest of the milk and continue to stir constantly until it becomes quite thick and smooth.

VELVET CAKE.—One pound of sugar, half a pound of butter, one pound of flour, one pint of ice water, four eggs, two teaspoonfuls of Royal baking powder sifted well with the flour. Bake in jelly-cake pans, and spread icing and grated cocoanut between the layers. Pastry cream may be used with the cocoanut instead of the icing; or it may be flavored delicately with orange, and put together with orange marmalade. It may also be baked in a loaf.

COCOANUT AND RICE PUDDING.—Boil one teacupful of rice in milk until soft and dry. While it is still hot, stir into it a quarter of a pound of butter. Then add the well-beaten yelks of six eggs, a pound of sugar, a grated cocoanut, and rose-water or lemon peel to taste. Stir in the stiffly-beaten whites of four eggs, and bake. When cool, spread over the top the whites of two eggs, beaten to a stiff froth with some sugar and the juice of a lemon. Color it a little in the oven, or with a salamander.

BROWNED POTATOES.—Browned potatoes are very much liked now when new potatoes in the market render the old ones tasteless. Peel them and steam them until they are tender; then about half or three-quarters of an hour before dinner—supposing there is a roast of beef or lamb or fowl in the dripping pan in the oven—lay the potatoes under the meat. When they are browned take them out with a skimmer, let them drain, and send them to the table on the platter with the roast.

COTTAGE CHEESE.—The skimmed milk is allowed to become slightly sour or "clabbered." The pan is then set upon a cool part of the stove to warm gently, or upon the top of a kettle of boiling water. It should get no warmer than new milk, when the whey will appear clear and separate from the curd. When separation takes place, pour the whole into a bag of thin material, and hang to dry. When it ceases to drip, turn the curd from the bag, and mix with salt and a little sweet cream.

DOUGHNUTS.—One cup of white sugar, six tablespoons of melted butter, two eggs, one and a half cups of sweet milk, a little salt and a little nutmeg, three even teaspoons of cream of tartar and one and a half of soda, mixed with the flour, flour enough to roll and cut well. If there is too much flour they will be harder. Fry to a nice brown in hot lard.

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Saturday, June 3, 1882.

TABLE OF CONTENTS.

GENERAL EDITORIALS.—Bear River, 429. Benicia Agricultural Works; Railway Fares to Resorts, 433. The Week; The Mineral Springs of California, Paso Robles Springs; Colony of Redlands, 436 Our Mountain Lakes, 437. The Mineral Springs of California, 438 39-40 Health and Pleasure Resorts of California, 444 Notices of Recent Patents, 450

ILLUSTRATIONS.—Scene near the Headwaters of Bear River, 429. Thoroughbrace Wagon, of Benicia Agricultural works, 433 El Paso de Robles Hot and Cold Sulphur Springs, San Luis Obispo County, 436. View of Donner Lake, Nevada County, 437.

CORRESPONDENCE — From the Valley to the Coast, 430-31.

PATRONS OF HUSBANDRY.—Grange Leaflet; Sacramento Grange Reunion; Wheatland Grange Reunion; New Building; Oakland Free Market Again; The Grange and the Debris; Ratifying the Sacramento Convention. 432.

AGRICULTURAL NOTES, from the various counties of California, 432-3.

NEWS IN BRIEF on page 433 and other pages.

HOME CIRCLE.—A Legend of Orizaba (Poetry); A Real Sweet Story; Women's Strength; Tracing on Glass for the Lantern. 434. Single Women; A Photographic Gun; Smell of Paint, 435

YOUNG FOLKS' COLUMN.—Our Puzzle Box; Jip and Jack, 435.

GOOD HEALTH.—Warts and Their Cure; Fat of the Old and Young; Dead Drunk, 435.

DOMESTIC ECONOMY.—Tapioca Pudding; Graham Bread; Peanut Candy; Cream Cake; Velvet Cake; Cocoanut and Rice Pudding; Browned Potatoes; Cottage Cheese; Doughnuts, 435.

MISCELLANEOUS.—Science of Value to all Men, 431. The Lane Mineral Springs; The Manufacture of Organs, 450.

Business Announcements.

Wagons, Benicia Agricultural Works, Benicia, Cal.
Wagons, A. W. Sanborn & Co., S. F.
Electro-Magnetic Belt, W. J. Horne, S. F.
Windmills, etc., F. W. Krogh & Co., S. F.
Althouse Vaneless Windmill Woodin & Little, S. F.
Mineral Water, California Volcanic Water Co., S. F.
Barb Wire, Huntington, Hopkins & Co., S. F.
Commission Merchants, M. T. Brewer & Co., Sacramento.
The Baldwin Hotel, San Francisco, Cal.
Travel, Pacific Mail Steamship Co., S. F.
The "Dairy Queen," Geo. W. Freeman, Oakland, Cal.
Grand Hotel, Wm. Montgomery, Santa Rosa, Cal.
Ætna Springs, W. H. Lidell, Lidell, Cal.
Artificial Limbs, Menzo Spring, S. F.
Cycle, New York Plow Co., New York.
Riverside Colony Land, S. C. Evans, Riverside, Cal.
Hotel Del Monte, Geo Schoenwald, Monterey, Cal.
Furniture, Indianapolis Chair Manufactory, S. F.
Agricultural Implements, Frank Bros., S. F.
Clear Lake & Calistoga Stage Line, W. F. Fisher, S. F.
Pacific Coast Steamship Co., Goodall, Perkins, S. F.
Adams Springs, Miller & Stolle, Lake Co., Cal.
The Harmon Seminary, S. S. Harmon, Berkeley, Cal.
Ojai Valley House, F. B. Barrows, Nordhoff, Cal.
Sulphur Springs, Blackburn & James, El Paso de Robles.
"The Geysers," W Forsyth, Cal.
Napa Soda Springs, Wm. J. Kelly, Napa Soda Springs, Cal.
Gordon Springs, Hoffman & Co, Cobb Valley, Cal.
"Abel Stearns Ranchos," A. Robinson, S. F.
Tubbs Hotel, S. I. Kellogg, Oakland, Cal.
Lands for Sale, W. B Parker, Vacaville, Cal.
Hard Wood and Ship Timber, John Wigmore, S. F.
Kellogg Hotel, C. H. Holmes, Kellogg, Cal.

The Week.

Our paper this week is resonant with the notes of outdoor life, the subdued voices of the forest, the murmuring of waters, and the quiet of the mountain lake; and, in contrast to these, are suggestions of the bustle and activity, the roll of stages, the romping of children, the chat of the loungers on piazzas and beneath the trees, which comprise the daily accompaniments of life at the springs and pleasure resorts. To all who seek an outing, whether it be in following the throng to the "resort," or in pursuing the lonely wandering of the campers, there will be found matters of interest in this week's RURAL. The pleasure and health resorts of California are continually increasing in number and in their attractions and accommodations. They are occupying, too, a larger place in the public mind. This is well, both for their power to draw tired people away from too constant labors to rest and recreation, and because they serve to make our State more interesting to visitors from abroad, who, coming once, often repeat their visits, or else permanently remain among us, and thus help to build up our regal State.

The Mineral Springs of California.

On other pages of this issue we give the most complete review of the mineral springs of California ever attempted by a newspaper. The material is drawn from a careful monograph on the subject by F. W. Hatch, M. D., permanent Secretary of the State Board of Health. This document, being of a technical character and circulated mainly among members of the medical profession, is not attainable by the mass of readers whom its researches would interest and benefit. For this reason, we have attempted the publication in popular form, and trust that the result will be to the advantage of our readers everywhere.

The mineral springs of our State are one of the resources of California which are too often overlooked. Not only do they dispense their healing and restoring virtues to our citizens whom the cares and toils of life have enervated, but they bring to us a host of tourists and health seekers from all parts of the world. The number at present visiting our springs and health resorts is hardly a tithe of the throng who will come hither when our springs and their healing powers shall be better known. It is natural, in view of their short history, that knowledge of them should be somewhat fragmentary and incomplete. Concerning this point, Dr. Hatch says: "Practically, the history of our mineral waters, as derived from an actual knowledge of their effects upon disease—intelligent observation of the results of treatment with those afflicted with diseases properly diagnosticated—would, if it could always be secured, furnish us a much more reliable guide in forming just conclusions of their value in any given case than the theoretical reasonings of the chemist. Such accurate information, in the early history of medicinal springs, is not always to be obtained; popular rumors, or even the reports of individuals upon their own experience—of cures effected in their own persons—are to be received with much suspicion, on account of probable diagnostic errors and the misinterpretation of symptoms. Fortunately, we have the experience derived from the mineral springs of Europe as a guide, which have become so well known as curative agents in various diseases, that we are able, with a reasonable degree of accuracy, to associate their effect with certain known combinations of ingredients; and it is true that these effects in general correspond with what the materia medica teaches should be expected from the results of analysis. The same is true of many well-known springs of other States in this country—notably, those of Virginia. The mineral waters of California bear a marked resemblance in their chemical composition with some of those of Europe and Virginia, and from a knowledge of the latter we may draw rational conclusions as to the remedial virtues of the former."

The analysis of the chemist is of great value as supplying data by which our springs can be compared with waters which have secured wide fame because of the cures they have effected and the co-relative benefits conferred. It would seem eminently fitting that the State should undertake work of this kind with reference to our mineral springs, because the effort should be systematic and comprehensive, and its results should be lifted above all suspicion of individual interest in the facts set forth. Sets of analyses procured by the owners of the properties will always be open to suspicion, even if they were really faultless. The recommendations of Dr. Hatch in this respect are worthy of general consideration.

The mineral springs of California ought to assume their legitimate place as instruments, either of evil or of good. They deserve investigation, and the public should be instructed as to their use. This can be done only when their constituents are accurately determined. When this is accomplished, those that possess a real value will continue to command confidence; while the worthless may be exposed.

This much, it is believed, is demanded in the interest of the public. The expenditure of even a small sum in this direction will redound greatly to the benefit of the State, and assist in developing one of its prominent and really valuable interests. It is not pretended that an analysis alone can be an infallible indication of the therapeutical value of mineral waters; experience affords the only positive evidence. Yet chemical analyses, by revealing to the physician the presence of ingredients with whose special effects he is familiar, will enable him to form correct general views of the action of the water, and serve to prevent, as remarked by a distinguished author upon the subject, "The incessant mistakes and mischief which medical men commit in sending their patients, haphazard, to drink mineral waters which are often unadapted to their cases." Analysis—a knowledge of the mineral combinations existing in these waters—added to the experience we are every year acquiring in their use, will give them a practical value, and establish their reputation upon a basis which, without it, they can never attain.

It may be said that the mineral springs are private property, and should be developed by private enterprise. This is true. But the action of individuals is uncertain, and while we are waiting for its determinations the interests of the public suffer. There is, besides, no guarantee afforded of the reliability of the analyses thus procured. They may be reliable, or they may not. Doubtless a considerable number of those already made have been done by competent hands, but of some we have reason to believe that the representations made are simply conjectural; nor can we be sure that due care will be exercised in this regard in the future. An analysis, unless trustworthy, is worse than useless. It misleads those who should, least of all, be the subjects of deception.

We trust the suggestions of the secretary of the State Board of Health will be productive, and that the important material endowment of the State in her mineral springs may ere long develop, and their values set forth in a form acceptable to a world of medical men and their patients.

EL PASO DE ROBLES HOT AND COLD SULPHUR SPRINGS, SAN LUIS OBISPO COUNTY.

Paso Robles Springs.

We give on this page an engraving showing the grounds and buildings of Paso Robles springs, with a glimpse at the surrounding country. The springs take their name from the rancho upon which they are found—El Paso De Robles (The Pass of the Oaks). They are situated in the beautiful valley of the Salinas river, about 30 miles north from San Luis Obispo. This valley is protected from the cold winds and fogs of the ocean by the Santa Lucia range of mountains, and for miles above and below the springs the valley is a natural park, formed by long stretches of level plains, broken at intervals by low hills, and all studded with graceful white and live-oak trees, with occasional groups of native shrubs, the whole forming one of the most picturesque landscapes that the eye of man ever rested upon. In the midst of this scene of natural beauty, the waters burst forth from the earth duly prepared in Nature's great laboratories to minister to the diseases of man. The climate at Paso Robles is as near perfection as can be found, and is quite free from those sudden changes often experienced on this coast. The atmosphere is pure and entirely free from malarial poison.

The engraving shows that much time and effort has been expended in bringing various accommodations for guests. In the article on mineral springs, on another page of this issue, will be found a full discussion of Paso Robles springs from a medical point of view.

Colony of Redlands.

The writer, visiting Redlands in the latter part of March last, was very much impressed with the superior advantages this colony seems to possess. The lands are situated at the extreme end of the San Bernardino valley, where it narrows and rises upon the very flank of the grand old San Bernardino mountain. The altitude corresponds with that of the highly favored mesa lands, which are famous for producing the choicest, fairest and earliest of citrus fruits; table, wine and raisin grapes.

No one can fully realize the superior charms possessed by this colony without viewing its beautifully elevated position. Nearly every lot has a delightful outlook upon the bordering hills and mountains, and the towns, plains and cultivated lands spread out before its lawn-like, sloping front.

When the squares between the grand avenues, laid out in the published map, are improved and highly cultivated, as there is every reason to believe they soon will be, the view of the colony itself, from the very sloping position it occupies, promises certainly a more charming picture than that of any of the most favored colonies, preceeding Redlands in the calendar, on the coast.

A scene of great activity prevailed in laying out the wide and sightly avenues, building the reservoirs and latest improved system of water-pipes and distributing gates; manufacturing upon the ground, at different points, an immense amount of durable cement water-pipes, ranging from 4 to 24 inches in diameter; laying pipes and breaking up new ground. Altogether it was such an outdoor industrial show as but few persons view in a lifetime, and one that seemed to reflect great credit upon its projectors and enterprising managers.

Realizing the importance of a right start in colony building, Messrs. Judson & Brown determined to invite the best class of settlers only to Redlands. They wish to protect the town, laid out for its business center, from intrusion of intoxication dealing saloons, with their associated evils and trouble-dealing accompaniments.

The strength of this colony will be greatly advanced by thus associating a band of worthy settlers who will firmly co operate in worthy undertakings only, and stand by each other in sustaining the good social and business reputation of the community.

Taking advantage of the experience of earlier colonies, we do not see why it should not be demanded that Redlands shall, in many particulars, be an improvement upon others. In another column will be found a more minute mention of this worthy enterprise, published by the representative press of Riverside, in the same county.

TANGLED SILK.—In the portion of Mr. Ewer's treatise on "Silk Culture in California," which we gave on page 415 of last week's PRESS, the printers made a grievous tangle by misplacing the type. In reading from the bottom of the first column, the reader must skip to the 29th line of the second column and then proceed until the connection breaks, when he must go backward to the type now standing at the head of the second column. A little patience will enable the reader to triumph over the disorder—which we regret.

SOME idea of the great slaughter of deer which annually takes place in California and Oregon may be gained from the trade statistics of the hide dealers. One Front street export house has a pile containing 8,000 deer skins in its warehouse. It handles annually some 75,000 skins, and its estimate of the annual number of deer killed is 200,000. The largest portion of the skins now in this market came from eastern Oregon, where deer are still abundant.

Our Mountain Lakes.

As the summer heat becomes more and more oppressive, the dwellers in the valleys will flee as birds to the mountains to breathe the clear, cool air, and enjoy the crystal waters girt about by the grand forests of the Sierras. The mountain lakes are the chief centers of resort, and they have a charm peculiarly their own.

We would make special reference at this time to the far-famed Donner lake, which is shown in the engraving on this page. As introductory to his well-known book on the "Fate of the Donner Lake Party," C. F. McGlashan introduces the following description of the lake, which was the scene of their dread sufferings, and the death which brought to many of them release from woes unspeakable.

Three miles from Truckee lies one of the fairest and most picturesque lakes in all the Sierras. Above and on either side are lofty mountains, with castellated granite crests, while below, at the mouth of the lake, a grassy, meadowy valley widens out and extends almost to Truckee. The body of water is three miles long, one mile and a half wide, and 483 ft. in depth.

Tourists and picnic parties annually flock to its shores, and Bierstadt has made it the subject of one of his finest, grandest paintings. In summer its willowy thickets, its groves of tamarack and forests of pine, are the favorite haunts and nesting places of the quail and grouse. Beautiful speckled mountain trout plentifully abound in its crystalline waters. A rippling breeze usually wimples and dimples its laughing surface, but in calmer moods it reflects, as in a polished mirror, the lofty overhanging mountains, with every stately pine, bounding rivulet, blossoming shrub, waving fern, and—high above all, on the right—the clinging, thread-like line of the snow sheds of the Central Pacific. When the railroad was being constructed, 3,000 people dwelt on its shores; the surrounding forests resounded with the music of axes and saws, and the terrific blasts exploded in the lofty o'ershadowing cliffs filled the canyons with reverberating thunders, and hurled huge bowlders high in the air over the lake's quivering bosom.

In winter it is almost as popular a pleasure resort as during the summer. The jingling of sleigh-bells and the shouts and laughter of skating parties can be heard almost constantly. The lake forms the grandest skating park on the Pacific coast.

Yet this same Donner lake was the scene of one of the most thrilling, heart-rending tragedies ever recorded in California history. Interwoven with the very name of the lake are memories of a tale of destitution, loneliness and despair which borders on the incredible. It is a tale that has been repeated in many a miner's cabin, by many a hunter's camp fire, and in many a frontiersman's home, and everywhere it has been listened to with bated breath.

Our mountain lakes are well described in the following paragraph by Prof. John Le Conte:

Hundreds of little Alpine lakes, with their clear, deep, cold, emerald waters, are embosomed among the crags of the Sierra Nevada mountains. Their origin may be traced to the more powerful actions of glacial agencies in past times; in some cases, gorges dammed up by ancient moraines. The streams that now supply these "Gems of the Sierra" are born in the cold, gloomy solitudes of the upper mountain region, amid perpetual snow banks. Many of these charming lakes are nestled in the least-explored portions of the "High Sierra," and have not been mapped or described; nay, some of them have as yet no designating names. They are the reservoirs of melting snows, and some of them—as those near the headwaters of the Yuba—are the sources of summer supply for hundreds of miles of mining ditches. Hence, the existing condition of our topographical knowledge of these wild and imperfectly explored mountain fastnesses renders it impossible to furnish anything like a complete catalogue of the mountain lakes of the Sierra Nevada.

Mountain Lakes of the Sierra Nevada.

NAME	Max. length in miles.	Max. width in miles.	Approx. area in square miles.	Hight of surface above the sea level in feet.	Max. depth in Feet.	Hight of bottom above sea level in feet.
Gold	4	2	.....	.....	.....	.....
Truckee	1	½	.....	6,904	90	6,814
Eureka	.....	.....	.....	.....	65	.....
Meadow	2	½	.....	.....	180	.....
Donner	2¾	½	.....	5,964	.....	.....
Washoe	3¾	2½	.....	5,003	.....	.....
Tahoe	21½	12	192	6,247	1,645	4,602
Tenaya	1	½	.....	.....	.....	.....

The foregoing table embraces some of the conspicuous lakes embosomed among the crags of that portion of the Sierra Nevada extending from Lassen's peak (lat. 40° 30′) in the north, to Mt. Brewer (lat. 36° 30′) in the south. With the exception of Tahoe, most of them are comparatively small.

These Alpine lakes, with their clear, fresh, snow-fed waters, surrounded by lofty snow-clad peaks, whose slopes are covered with magnificent groves of pine and fir, constitute the most attractive feature in the lesser summit valleys of the Sierra Nevada. The charmingly picturesque character which they impart to the wild and rugged scenery of these mountains has not been overlooked by tourists, poets and artists. But the inaccessibility of most of these "emerald gems" has prevented them from receiving that notice which their exquisite beauties deserve. As civilization penetrates into these mountain retreats, they will become more accessible, and consequently better appreciated by cultivated visitors. The most extensive, as well as the most celebrated, of these bodies of fresh water is Lake Tahoe.

Trips for Pleasure in California.

California is so much of a pleasure resort, as a whole, it is difficult to point out any part of it not worthy of a visit. Still more difficult is it to select that portion pre-eminent over all others for beauty of scenery, salubrity of climate and general attractiveness; and in another column we have arranged a list of the more prominent places, by consulting which the tourist may select which suits him best.

VIEW OF DONNER LAKE, NEVADA COUNTY,

The dimensions of California preclude the possibility of a trip which will include the whole scope of the State. But, as there is no finer country in the world for summer excursions and camping out than this, a jaunt over a portion of it will suffice for most persons. One can, moreover, choose the kind of scenery he prefers, and, to a great extent, the climate also. The moist, cool atmosphere of the coast, the warmer and drier air of the mountains, or the heat of the valley, present a variety difficult to find elsewhere in the same area. In summer we do not need, in our excursions, to count on rainy days. It never rains here during what is known as the "dry season." One can sleep in the open air or in tents for six or seven months in the year without inconvenience. We have before given a general sketch of the more frequented routes of travel, and repeat here much previously said.

Tourists are somewhat apt to think that after they have seen Yosemite, Lake Tahoe, the Geysers, the Big Trees and a few more of the "sights" of the State, they have seen it all. But there are many beautiful spots in California which lie off the route of travel, which are worthy of a visit. The number of "springs," and other health resorts, has increased greatly of late; and there are now numerous camping grounds, where those who prefer camping out to hotel life will find all the necessary conveniences.

Going south from San Francisco on the peninsula there is a pleasant road from San Mateo over the hills, by Crystal Springs to Spanishtown and Purissima creek, noted for the finest trout in the State, as they are perfectly pure, the creek falling over the cliffs into the ocean. Further on is San Gregorio creek, with its lagoon famous for fishing. There is a hotel here. Then we come to Pescadero, a coast town much frequented in summer and noted for its "pebble beach." The Pescadero and Butano creeks, near by, afford fine sport for the angler. Beyond that is Scott's valley, and then Santa Cruz, the well-known watering place. Between Purissima and Santa Cruz there are numerous creeks other than those mentioned, with plenty of fine hunting and fishing. Camping grounds will be found all along at many points.

Another trip, starting from the city, is to go by the railroad by way of San Mateo, Redwood City, Menlo Park, etc., to Santa Clara and San Jose, the beautiful towns in the Santa Clara valley. From the first, one may branch off to the foothills of the Santa Cruz mountains, where he will find Blackberry farm, Congress Springs and Los Gatos. From San Jose one may go to the famous Almaden quicksilver mines, and in the opposite direction, a beautiful ride is out to Alum rock, on Penitencia creek, and from there up to the summit of Mt. Hamilton, where the Lick observatory is being built. From San Jose, the S. P. R. R. carries its passengers down the valley past Gilmore (from where one may go to the Gilroy Hot Springs), through the San Juan pass into the Pajaro valley, and across to the noted watering-place of Monterey, where the railroad company has erected a magnificent hotel. There is the beautiful bay of Monterey, with its splendid beach running around from Monterey to Santa Cruz. At various points on the line of the beach are hotels, camping grounds, and various accommodations for tourists and campers. Aptos and Soquel are the most prominent points.

Back of Santa Cruz the range of mountains of that name offers a splendid opportunity for camping, fishing and hunting, and there are numerous public resorts and springs, such as Magnetic springs, Wright's and others. The climate in the vicinity in summer is beautiful, and the mountains usually filled with campers.

Following on down the coast, we strike back through the Salina valley to Soledad, and from here may visit the Paraiso springs, seven miles distant. Then continuing on down the valley again we meet the plateau on which is Paso Robles springs, a noted health resort. Then further on we arrive at San Luis Obispo, an old Spanish town surrounded by grain fields and sheep and cattle ranges. Between there and Santa Barbara these ranges prevail. Santa Barbara is on the coast and is usually reached by steamer and not by the route we have mentioned, which is the way one would have to go by wagon.

To see the coast and its towns below Monterey, the best way to do is to take one of the Pacific Coast Steamship Co.'s steamers and go as far as San Diego and back. In this way Santa Barbara may be visited conveniently. You can also stop at Los Angeles, and by lying over a trip, visit Santa Monica, the orange groves of Los Angeles, and vineyards of Anaheim.

Back from the coast is the charming city of Los Angeles, with its lovely environment. Beyond is San Gabriel valley, with the famous Sierra Madre Villa, popular far and near. By rail eastward one reaches the valley of the Santa Ana, and sees Riverside, a horticultural jewel, with the Glenwood cottages in the midst of orange groves. Beyond is the beautiful San Bernardino valley with the lovely Crafton retreat at its head, the Arrowhead springs, with their medicinal waters and enchanting traditions, and Waterman's hot springs, which have wide fame, but are not now open except for transient visitation.

Returning to the coast one may take the steamer and see San Diego with its magnificent harbor and splendid climate. Returning, as the steamer comes up it passes through the Santa Barbara channel, between the islands and mainland, and coasting along up, finally enters the historic portal of California—the widely famed Golden Gate.

Starting again from San Francisco, as a center, going north along the coast we visit Sausalito and San Rafael, and back of them Mt. Tamalpais, and borne by the North Pacific coast narrow-gauge road, we pass through a beautiful country, up along the shores of Tomales bay, passing on the way Paper-mill creek, Taylorsville, and many beautiful camping spots; then on through the redwood timber to Duncan's mills and the Russian river, famous for its beautiful scenery.

Then again by a route ending at the same place, one may go to the S. F. & N. P. R. R. to Donahue, Petaluma, Santa Rosa (where you leave for Mark West springs), to Healdsburg, on the Russian river. From here Litton springs, Skaggs' springs, the world-famous Geysers, etc., may be visited.

A beautiful trip is up through the fine vineyards of the Napa valley, where are hosts of summer resorts. In this county many pleasant summering places are established in the neighborhood of Napa City, St. Helena, Calistoga, Kellogg, and other places. Among the well-known resorts are the Napa Soda Springs, Litton Springs, Nook farm, Sulphur springs at Calistoga, Etna Springs, near Pope valley; Sulphur Springs ranch, near Knoxville, and Petrified Forest.

Entering Lake county from the west, the Highland Springs is the first resort reached by stage from the railroad station at Cloverdale. From Ukiah to Lakeport by stage, the Blue lakes and the Pierson Springs are approached. Entering the county from the south, by stage from Calistoga, the traveler passes Mt. St. Helena, and can take a magnificent view from the summit by tarrying at the Mt. Toll House, and take a short horse-back ride. Anderson Springs, Harbin Springs, Glenbrook, Adams' Springs, Siegler Springs, Howard Springs, Soda Bay, on Clear lake; Sulphur Banks and Borax lake, Mound cottage, Bartlett Springs are among the notable attractions of Lake county. Lake county seems admirably and wonderfully adapted for a universal tourists' field, and is some day destined to attain a world-wide reputation.

Shasta county, from the well-watered bottom lands of the upper Sacramento valley up to the refreshing Strawberry valley, at the base of Mt. Shasta, some 70 miles or more, is a pathway full of joy to the hardy tourists who delight in rugged walks of nature. The United States fish-hatching establishment on McCloud river and Soda springs, clear fishing brooks and rivers, good fishing, etc., are here met with.

In Contra Costa county, the view from the summit of Mt. Diablo, on a clear day, is grand and wonderful in the number of cities and towns embraced in the vast extent of populated territory brought within the scope of the tourist's vision. A Byron, in this county, are hot sulphur springs which are lately becoming quite noted. The Piedmont springs in Alameda county, back of Oakland; the bay baths at Alameda; the sulphur springs in Colusa county; the White Sulphur springs near Vallejo, in Solano county; Webber lake, Donner lake, and hosts of other attractions, might be mentioned.

In Calaveras county, six miles from Knight's Ferry (Stanislaus county), are the Lane springs.

A warm and remarkably dry climate is found, early and late in the season, on the western borders of the Sacramento and San Joaquin valleys, which is remarkable for its sanitary qualities, which seem specially kindly and favorable in many localities to sufferers from pulmonary afflictions.

The whole range of the Sierras, which extends the length of the State, abounds in magnificent scenery. It would take more than a page of our space simply to mention the points of interest. At different points in the range and the foothills, hydraulic and quartz mining are carried on extensively, and those who have never seen the former should visit at least one gravel mine while in California.

It is, of course, impossible, in a brief article, to enumerate all the pleasure and health resorts of California, or all the thousand and one places where people go to amuse themselves in the summer months. We shall, in future issues of this journal, take occasion to mention other than those spoken of here. Every little canyon and glen, every mountain valley, every nook has its picturesque points, known to a chosen few. Here and there are places more widely famed. The vineyard regions of one section, the orange orchards of another, the wheat fields of another, possess charms to allure people of differert temperaments. Others, again, prefer the solitudes of the hills, where the unbroken forests reign supreme, where they can retire for a time from the busier scenes of life.

The Mineral Springs of California.*

Locations, Descriptions, Analyses and Virtues.

Various classifications of mineral waters have been made. The simplest is the best for present purposes. They are all based upon the predominance of some one or more principal ingredients. Hence we have the alkaline waters, the distinguishing constituents being carbonates or bicarbonates of soda, potassa, lime, magnesia, etc., and containing considerable carbonic acid gas; the salines, most of them being aperient with the chlorides of sodium and magnesium, sulphates of soda, potassa and magnesia, etc.; sulphurous waters, characterized by the presence of sulphureted hydrogen, in other respects being alkaline or saline, in accordance with the predominance of one or the other class of ingredients; and the chalybeate, containing a certain proportion of iron, in combination with substances belonging to one or another of the above classes. Then, again, we have the thermal waters of different degrees of temperature, from 75° to 100°, or even 140°.

Waters of the alkaline class, known also as carbonated or acidulous waters, have been chiefly advised in certain affections of the stomach and intestines, catarrhal in character, in bronchial catarrh uncomplicated by cardiac disease, in gout, for the relief of which they have attained celebrity, in chronic rheumatism, in functional disturbances and engorgement of the liver, in catarrh of the bladder, in diabetes mellitus and in dropsy. They are advised in the dyspepsia attended with excessive acidity of the secretions, "with sour or rancid eructations and regurgitations," and flatulent distention of the abdomen. Pure alkaline waters are seldom purgative; but, being usually associated with the salines, they may become so. They are often more properly alkalo-salines. They are commonly decidedly diuretic, and correct an acid condition of the urinary secretion. Hence, probably, their utility in rheumatism. For the chronic forms of this disease they are used internally or in warm baths, and are of decided efficacy.

The saline waters are aperient, diuretic, and excitant to the liver and its secretions, and to other members of the glandular system. They are, as above remarked, commonly associated with one of the other classes, and hence their medicinal effect will be accordingly modified. Many of them are thermal. They are used both internally and for bathing, and have been found efficient in various cutaneous diseases; in scrofula, and in gout and rheumatism. They have also been employed successfully in diabetes, and Bright's disease; in calculous concretions of the gall-duct, and in uterine engorgements.

Both of the above classes of mineral springs are frequently associated with iron in greater or less proportion, and hence are called chalybeate waters, whenever the iron is in sufficient quantity to become prominent. Chalybeate waters possess, in a high degree, the virtues of the ferruginous preparations, being in a form acceptable to the stomach, and which is readily introduced into the blood, improving its quality and effecting the gradual removal of those states of the system known as chlorosis and anæmia. They are of great benefit in disturbance of the functions of the uterus, characterized by amenorrhœa, when accompanied with a debilitated condition of the system, and also in excessive menstruation. Probably the improved hygienic conditions by which the patient is surrounded add greatly to the salutary effect of these waters.

Sulphurous Waters.—The medicinal effects of these waters depend mainly upon the combination of sulphureted hydrogen with the ingredients already described as composing the saline, alkaline, and chalybeate waters. They are admitted, however, by all authorities, to exert a sedative action peculiar to themselves, more or less marked, according to the quantity of the sulphureted hydrogen they contain. To the same substance is due, in part, their diuretic action. They have attained considerable reputation in chronic skin diseases, and in scrofula. For their curative virtue in chronic rheumatism they have very justly gained a great notoriety, but in such cases their efficacy seems to depend more upon their external use, in warm baths, than upon their internal administration. In paralysis, without organic lesion, they are of service, while in the same disease attended with cerebral or spinal apoplexy, they are regarded to be injurious. (Stille.) "In engorgement of the liver, abdominal plethora, and hemorrhoids, the saline-sulphur waters have long been justly esteemed as trustworthy remedies." (Walton.) According to Dr. Thompson (Cycl. of Pract. Med.), they are injurious to those laboring under general plethora, or are affected with inflammatory fever. In lead-poisoning they constitute a very valuable remedy, effectually eliminating the poison from the system. They are also strongly advised, used internally, and as baths, in cases of amenorrhœa or defective menstruation, and in chlorosis.

Hints on the Use of the Waters.

From what has now been said—which is but a general outline of the history of mineral springs and their uses—it may readily be understood that they are complex agents, varying according to their combination and temperature, and not to be used indiscriminately or ignorantly. That they are capable of doing great good has been abundantly demonstrated; that they may exert a power for evil, is not less certain; and these opposite effects may result, not alone from the different kinds of water used, but also from the method of using it. For example, a saline or alkalo-saline water may be purgative or diuretic, almost at the pleasure of the person taking it. Large drafts taken before breakfast will probably produce an aperient effect; smaller ones at intervals during the day will be diuretic.

As to the quantity to be taken during the day, it may be stated, as a general rule, to be two or three glasses before breakfast, and as many during the day. It is better to pause, or even walk for a few minutes between each glass. Mineral waters should not be used within an hour of the time of meals. When visiting the Ætna Spring, the writer was informed by visitors that a full draft of the water, taken soon after meals, invariably caused vomiting.

Small doses are often preferable to large ones. Except in the case of aperient waters, designed to regulate the bowels, a principal effect sought to be obtained is that resulting from the alterative action of the water—a slow modification of the system, a gradual stimulation of the organic processes—by which the secretory organs are improved and glandular obstructions removed. Thus, judiciously used, many of the waters may prove a valuable tonic, while taken with less caution the principal purposes of their administration may be thwarted. Ordinarily, several weeks of treatment are required to fulfill the indications. Mineral waters taken with all due care occasionally disagree, or they are strangely inefficient, or even do harm in cases apparently suited to their use. In such instances, competent medical advice is needed to correct the trouble, to regulate, increase, or diminish the quantity taken, or to change the time of taking it.

Baths.

The external use of mineral water is often more efficient in disease that its internal administration. It is attended, too, with greater risks. It may be cold, tepid, warm or hot. Certain general rules have been laid down regulating the use of baths. They are better employed on an empty stomach, as in the morning before breakfast, or at bed time, or an hour before dinner. When two baths are used daily, as is the custom at many watering places, probably the best times are before breakfast and an hour before dinner; or, when it is desirable to promote perspiration, in the evening, the patient retiring to bed immediately. Cold baths should, as a general rule, not be of longer duration than five minutes; warm baths, 15 minutes; hot baths, five to fifteen minutes. "In some cases, especially when the bath is used for cutaneous diseases, the patient may profitably remain in for a much longer period, even from half an hour to an hour. As a general rule, and especially for delicate persons, active exercise should be avoided while in the bath; and always, on coming out, the bather should be well rubbed over the whole body with a coarse towel." (Moorman, "Mineral Springs of the United States and Canada.")

Hot baths are decidedly stimulating in their action, increasing the force of the circulation and exciting the heart. The author above quoted, justly regarded as high authority in the use of mineral baths, states that they are "potent and positive agents. When applied to the human body they are never negative in their influences, but will do either much good or much harm, according to the judgment and skill with which they are employed. * * * * They should never be prescribed merely for the name of a disease, however carefully its nomenclature has been selected. The precise existing state of the system, whatever may be the pathology of the disease, ought always to be carefully looked to before a course of hot bathing is directed."

Hot baths should never be used by persons having organic disease of the heart, or are the subjects of hemorrhage from the lungs, or of a plethoric condition, with tendency to cerebral congestion, as indicated by vertigo or swimming in the head. Warm baths are likewise contra-indicated in such cases in proportion to their temperature.

Cold bathing, though considered tonic in its effect, should be avoided by those much debilitated, and in whom reaction is feeble or slow in coming on.

Consumptives, even in the early stage of disease, should keep away from these watering places. Many of them are well adapted by location and climate for persons of this class, it is true, and so far may be resorted to; but there is no fact in medicine, or in the history of consumption, more fully attested than that the treatment of that disease by mineral waters, especially the saline and alkaline waters, and their combinations, is positively hurtful.

The following springs have been brought to the notice of the writer. Some of them have been personally visited and examined, and of others every reasonable effort has been made to obtain an authentic history.

Alkaline Springs.

California Seltzer Water.—This spring is located in Mendocino county, in the Coast mountains. It has an agreeable alkaline taste, is antacid, slightly diuretic, and, in large quantities, is laxative. An analysis in our possession gives the following result to each pint:

	Grains
Free carbonic acid—abundance.	
Bicarbonate of soda	6.65
Carbonate of lime	8.80
Carbonate of magnesia	5.65
Chloride of sodium	2.15
Carbonate of iron and siliceous acid—traces	
Total	23.33

The name of the author of the above analysis is not in the possession of the writer.

Adams' Spring.—It is located in the mountains of Lake county, about eight miles south of Clear lake. Each gallon of water contains the following:

	Grains
Carbonate of lime	28.714
Carbonate of magnesia	99.022
Carbonate of soda	57.039
Carbonate of iron	.517
Chloride of sodium	4.112
Silica	7.318
Organic matter	2.811
Salt of potash—traces	
Nitric acid—traces	
Total	199.430

Each gallon also contains 304 cubic inches of free carbonic acid gas. We have not been able to visit this spring. It has attained a high reputation for the relief of the disorders to which this class of waters is especially suited. It has afforded marked relief in rheumatism, and is much esteemed by those who have used it for the correction of certain diseases of the stomach associated with deficient secretion of bile. It is also thought by many who have visited it to be useful in chronic metritis.

Allen Springs, Lake County.—Among the many springs with which Lake county abounds, these are regarded by those who know them best, as being among the most valuable. Their location is in a canyon near the head of Cache creek, about 45 miles from Williams, in Colusa county. As just stated, the location is near the head of Cache creek, a beautiful spot, shaded by live oaks. There are two principal mineral springs. The following qualitative analysis, by W. T. Wenzell, has been brought to my notice: Chlorides of sodium, magnesium and potassium; bicarbonates magnesium, sodium and calcium; sulphate of sodium; phosphate of iron; silica, carbonic acid. It is strongly ærated with carbonic acid; salts of sodium and magnesium predominate. The waters of Allen springs have acquired considerable reputation in hepatic affections, and especially in chronic renal diseases. Dropsy, associated with the latter, has been greatly relieved, and in an extreme case, reported to the writer, cured by the use of the water.

Geyser Spa Spring.—This spring is located in Sonoma county. The solid contents in one quart of water are reported as follows:

	Grains
Bicarbonate of soda	3.87
Bicarbonate of magnesia	2.45
Carbonate of iron	0.95
Carbonate of lime	1.14
Chloride of sodium	2.49
Sulphate of soda	0.85
Silica	0.45
Loss	0.08
Total	14.28

The water of this spring, like some other mineral waters, is bottled and sold for ordinary use. It is esteemed by many as an antacid, and mild corrective of disordered digestion.

New Almaden Vichy Water.—The spring containing this water is located in Santa Clara county, near the New Almaden mines, about 60 miles south of San Francisco. It has been much used in old rheumatic and gouty affections, and is of value in debilitating and chlorotic affections, and in some gastric disorders and diseases of the liver. It has been advised in renal affections and gout. Analysis gives this result to each quart (name of the chemist not known):

	Grains.
Carbonic acid	28.02
Bicarbonate of soda	50.03
Bicarbonate of lime	8.00
Oxide of iron	1.02
Sulphate of lime	10.05
Sulphate of magnesia	3.00
Chloride of sodium	8.04
Solid constituents, with traces of silica	108.16

Alkalo-Saline Springs.

Hot Borate Springs.—This remarkable spring is situated in Lake county, near the town of Lakeport, at an elevation of about 1,500 ft. It is easily reached by the Napa Valley railroad to Calistoga, and thence 30 miles by stage.

The water of this spring, as analyzed by Mr. Moore, is found to be of a remarkable character. His analysis is subjoined:

	Grains.
Chloride of potassium	Trace
Chloride of sodium	84.62
Iodide of magnesium	.69
Bromide of magnesium	Trace.
Bicarbonate of soda	76.96
Bicarbonate of ammonia	107.76
Biborate of soda	166.29
Sulphate of lime	Trace.
Alumina	1.26
Carbonic acid, free	36.37
Silicic acid	8.38
Matters volatile at a red heat	65.77
Total, in one gallon	484.35

In this table the constituents are necessarily calculated as anhydrous salts. The biborate of soda, however, contains about 47% of water when crystallized, and the 103.29 grains given above correspond to 195.35 of crystallized borax. The most extraordinary feature in the above analysis is the large amount of ammoniacal salt shown to be present in this water; in this respect exceeding any natural spring water which has ever been analyzed. The borate spring has been used in nephritic and calculous diseases, dependent on excess of lithic acid, and also in certain scaly cutaneous eruptions.

Bartlett Springs, Lake County.—The Bartlett springs are among the most popular of any of the numerous resorts of Lake county, at least among the population of the central portion of the State. They are located in the southern portion of the county, near the head of Cache creek, and about 45 miles from the town of Williams, in Colusa county, from which place they are reached by stage. The situation is upon a flat surrounded by hills; upon the southeast slope of one of these lie the springs. There are two principal springs—one yielding the "Bartlett" water proper, and the other said to contain soda and iron. No thorough or authentic analysis of either of these springs has been made, but a doubtful qualitative examination is said to have revealed arsenic among ingredients in the "Bartlett" water. It is pleasant to the taste, is cathartic, and very decidedly diuretic; it is also alterative; and the fact cannot be denied that it has been shown by abundant testimony to be of very considerable efficacy in many cases of chronic rheumatism, skin diseases, and hepatic and renal affections. It is much esteemed in dropsy, in uterine catarrh, and in functional derangements of that organ; in neuralgia and chronic malarial affections.

Tolenas Spring.—The water of this spring is to be classified as alkaline, or alkalo-saline, though no analysis has yet been made of it. The location is about five miles north of Suisun, easily reached by the lines of the Central Pacific R. R. from Sacramento or San Francisco to Suisun, and thence private conveyance. The place is said to be resorted to by many invalids from that portion of the State, who, for the most part camp in the vicinity. Small cabins have been erected for those who prefer an indoor life. The water is esteemed by many who have used it for its efficacy in chronic dyspepsia, and in renal disease. It is charged with carbonic acid gas and bottled at the spring.

Chalybeate and Alkalo-Chalybeate Springs.

Pacific Congress Spring, or Saratoga Spring.—This is a saline water arising in the Coast range mountains, 10 or 12 miles southwest from Santa Clara. The locality is one of natural beauty, healthful, and admirably suited as a resort for those seeking a pleasant retreat from the cares and excitement of city life, where pure air and varied scenery combine to invigorate both body and mind. Excellent accommodations have been provided, the grounds have been improved, shady walks laid out, bathhouses erected, the water being artificially warmed to any desired temperature, and everything is arranged to ensure the comfort and enjoyment of the visitors. It has become, of late years, one of the most fashionable watering places of California. Like the water of the Napa and Litton springs, this too is bottled upon the premises, and sold in the cities of the State. It is highly prized by many for its agreeable taste and antacid properties. In acidity of the stomach, in indigestion, in cases of faulty and depraved secretions from the liver, its use has become familiar to many who receive it at their own homes. The large amount of iron it contains would almost entitle it to be ranked as a chalybeate water, and renders it of essential service in chlorosis, anæmia, and wherever iron in combination with salines is indicated. Used freely at the springs before breakfast, this water acts as a purgative. It has a decided diuretic action when taken during the day in non-laxative doses. Analysis yields the following result in each gallon of water:

	Grains.
Chloride of sodium	119.140
Sulphate of soda	42.140
Carbonate of soda	123.551
Carbonate of iron	14.030
Carbonate of lime	17.395
Silica, alumina, and traces of magnesia	49.882
Total	365.857

Temperature, 56 Fahrenheit.

The above analysis was made, I believe, by Bauer.

Napa Soda Springs.—Probably no mineral water in California is so well known, or has maintained its reputation among the community to the same extent, as has that which goes under the name of Napa soda. It is sold and used as a beverage in almost every city and town in the State, and is esteemed as a pleasant, exhilerating drink during the summer months. The spring is located on the western slope of the mountains east of Napa Valley, and only seven or eight miles from Napa City, and has from an early day been a favorite resort of the invalid. Its mineral combinations are such as to make it valuable as a tonic in anæmic conditions of the system, and in chronic dyspepsia where there is a predominance of acidity. It has been found to be an efficient aid to digestion, and a useful tonic, yet gentle aperient, when taken in the morning before eating by delicate females, and is rendered more efficient by the addition of a grain of the sulphate of iron to a bottle of the water.

L. Lanzwurt reported the following analysis, representing the constituents of one quart of water:

	Grains.
Bicarbonate of soda	3.28
Carbonate of magnesia	6.53
Carbonate of lime	2.72
Chloride of sodium	1.30
Subcarbonate of iron	1.96
Sulphate of soda	0.46
Siliceous acid	0.17
Alumina	0.15
Loss	0.62
Residuum from evaporation	17.19

*The account of the mineral springs of California is condensed from a new work on the subject, the report of the State Board of Health for 1880, by F. W. Hatch, M. D., permanent Secretary of the Board. It is not a reprint, but is as comprehensive as we can make it with the data at our disposal, and the publication of such a work in a popular medium will we believe, be of public value.—EDS PRESS.

Besides the value of this water medicinally, its location upon the mountain side of the beautiful and healthful valley from which its name is derived, gives it decided advantages over many other watering places in California.

Litton Seltzer Spring, Sonoma County.—This spring is pleasantly located near Healdsburg, Sonoma county, on the line of the San Francisco and North Pacific railroad, by which access from San Francisco is rendered easy. It is a carbonated alkaline water, clear, sparkling, and pleasant to the taste. The locality is much resorted to as a retreat from city life and cares, and on account of the medicinal properties of the water. The latter has been introduced into the market in bottles, and forms an agreeable beverage and antacid. It contains a larger proportion of iron than most other mineral springs in the State. The following analysis has been reported by Henry G. Hanks: Specific Gravity, 1.0038. When freshly drawn, the water is slightly acid. After standing, it becomes alkaline. One wine gallon of water contains of solid constituents 228.69 grains, in the following proportions: Carbonic acid (combined), 42 96; chlorine, 78.38; sulphuric acid, 2.36; silicic acid, 2 92, oxide of iron, 2.85; lime, 4.41; magnesia, 5 24; soda, 62.19; alumina, ammonia, potash, lithia, boracic acid, organic matter, 27.38; total, grains, 228.69.

Summit Soda Springs.—The location of these springs is near the summit of the Sierra Nevada mountains, 12 miles from the Central Pacific Railroad. The access is by that road, from Sacramento to Soda Springs station, thence by stage to the valley in which the water is found. The road to the springs is good, winding along the mountain side, so as to afford an easy descent to the valley below, the eye being continually greeted, during the route, by scenes equal in grandeur to almost any which the Sierras afford. The springs themselves are beautifully located in an expansion at the head of the deep canyon, along which winds one of the forks of the American river. The accommodations for visitors are excellent.

This might, according to the arrangement of some authorities, be called an "earthly-saline" water, although the large amount of carbonic acid it contains allies it to the *carbonated* waters. It should, therefore, if we can judge from its constituents and their known properties, possess, in a high degree, the remedial virtues which are supposed to pertain to these classes. Thus, the carbonic acid gives it a place in torpid digestion and certain dyspeptic troubles, while the association of its gaseous element with the alkalies and earths, with chloride of sodium and iron, makes it efficacious in diseases due to a scrofulous diathesis, in rachitis, in chronic affections of the mucous membranes, especially of the intestinal canal, in rheumatism, and in cases requiring its diuretic action. In fact, in some of these, more particularly in chronic catarrhal disorders and in rheumatism, it has been used with marked benefit. Probably, also, taken in connection with the climate of the locality, its elevation, its invigorating influence, it would prove effectual as a tonic and restorative in some nervous disorders, in anæmia and chlorosis, in atony of the mucous membranes, debility, and in convalescence from acute disease. Analysis yields the following results in a wine gallon:

	Grains.
Carbonic acid, 186 35 cubic inches	
Bicarbonate of lime	43.20
Carbonate of magnesia	4.20
Carbonate of soda	9.50
Chloride of sodium	26.22
Oxide of iron	1.75
Silica	2.06
Alumina	1.75
Potassa—trace	
Total	88.68

This water was analyzed by J. F. Rudolph.

Seigler Springs.—The value of these springs has long been recognized by the people in the central part of the State, and they have been much frequented by individuals. The location, near the head of a canyon, at an elevation, according to my informant, of more than 2,500 ft., is a pleasant one, and the scenery attractive. There are hot and cold springs—a soda spring, and a chalybeate spring. There is a hotel on the premises, and the surrounding grounds are suitable for camping. All the usual conveniences are provided for visitors—bath-houses and a spacious plunge bath. One of the springs is said to contain arsenic, and to have been found decidedly valuable as a remedial agent in chronic cutaneous diseases. An analysis is said to have been made of the Seigler springs for a private individual by whom they were purchased and extensively improved. I have not been able to obtain a copy.

Soda Springs, Shasta County.—So far as has been ascertained, no analysis has been made of these springs. The locality is of frequent resort, not so much on account of the medicinal value of the water, though this is held in high estimation, as for the advantages afforded in their vicinity for fishing and hunting. Prof. J. D. Whitney thus speaks of the springs in his Geological Report, Vol. 1: "There are two groups of mineral springs in this vicinity, one of which is on the east side of the Sacramento, nearly opposite the mouth of Castle creek; the other is three and a half miles farther up and eight miles from Strawberry flat, at the base of Mount Shasta. The first is called 'Lower Soda,' the other 'Soda Springs.' The latter are in the canyon of the Sacramento, at an elevation of 2,363 ft., and they are considerably resorted to, the water having a high reputation for its tonic effect, and being reported to have a specific action on the kidneys. The water is a chalybeate, there being an extensive ferruginous deposit around the spring. It is also highly impregnated with carbonic acid, sparkling like soda water, whence the name which is usually given in California to springs giving off carbonic acid, and not to those containing carbonate of soda. The temperature of the water was 52° in September, 1862."

Saline Sulphur Springs.

Tuscan Springs, Tehama County, California.—These springs have long been regarded by the residents of that portion of the State as possessing decided medicinal properties. They are located about nine miles from Red Bluff, on the Sacramento river, easily accessible from the latter by a good road. The locality itself is rough, rugged, and uninviting, being surrounded by evidences of volcanic convulsion, at an altitude of about 600 ft. A hotel on the premises affords plain but comfortable accommodations. There are three principal springs, two of which are used for drinking purposes. They belong to the class of "cold sulphur waters." Bath-houses have been erected, the water being heated by utilizing the carbureted hydrogen evolved. Experience has abundantly demonstrated the efficacy of the Tuscan waters in chronic rheumatism, cutaneous diseases of several forms, and constitutional syphilis. They are also said by Dr. Cameron, of Red Bluff, and other physicians, to be almost infallible in the cure of intermittent fever. They have a strongly saline taste, not unlike the Blue Lick water of Kentucky. They act, in most cases, efficiently upon the kidneys, and, with many, as an aperient. They are exceptional in their composition as containing iodine in considerable quantity. The temperature was determined at 78° to 80° for the "Red spring," 68° for the Black, and 66° to 70° for the White. A partial analysis of what is called the "Red water" gave the following results: Acid, sulphuric; acid, carbonic; acid, hydrochloric; iron, as bicarbonate; lime; potassa, as chloride; soda, as chloride; magnesia; lithia; alumina; iodine. Quantitative analysis, roughly made, gave iodine to the extent of 0.06 grams per imperial gallon; nearly 25 grams of soda; one gram of lithia; a large amount of potassa.

Alkaline-Sulphur.

Witter Spring, Lake County.—This spring is situated in a deep canyon of the Coast Range mountains, three miles east of the Blue lakes, five miles from the town of Upper Lake, and 15 miles from Lakeport. The scenery is attractive, a fine view of Clear lake being afforded from the surrounding hills. The elevation is not known. There is a good public house, and a number of cottages or cabins for the use of visitors. There are several springs, the principal one, most relied upon by the afflicted, going under the emphatic name of the "Dead Shot," reference being had to its remarkable efficacy in chronic rheumatism, and in skin diseases, scrofulous and syphilitic. It is cold. In addition to the above there is one sulphur spring, which is artificially heated for bathing purposes, and one chalybeate spring.

Pearson Springs, Lake County.—The Pearson springs are located in an elevated valley, about 200 yards wide, between two high mountains. The situation affords superior accommodations for parties camping out. They are about one and a half miles distant from the Blue lakes, 14 miles from Lakeport and one mile west of Witter Spring. The elevation is not known, though it must be above 2,500 ft. On the hillside, east of the valley, are five springs; the most northern is known as the "Sulphur and Soda" spring; next on the south is the "Bartlett" spring, so called from its resemblance to the principal water at the springs of that name; next south is the "Soda" spring; next is the so-called "Gas" spring, this name being applied on account of the large amount of carbonic acid escaping; it is said to be strongly chalybeate; the character of the next spring, the last going south, is unknown. The gas spring is gently cathartic, and its continued use is said to be an excellent remedy in *habitual constipation;* it is also diuretic, and is supposed to exert a specific influence upon the liver, relieving cases of *jaundice.* It has a reputation as a tonic. The "sulphur and soda" spring is resorted to for the purposes to which that class of waters are usually applied, and has the asserted merit of curing obstinate *catarrhal* affections and *sick headache.* It is used more than any of the other waters here for bathing purposes, being artificially heated for the purpose. The "soda" spring is used as a beverage. All these springs are *cold.*

Thermal Springs.

Paso Robles Springs.—These springs belong to the "thermal sulphurous" class. They are so named from their locality being in a *pass of oaks.* The location is in San Luis Obispo county, access being by stage from the city of San Luis Obispo—a half day's ride—or, by the same mode of conveyance, from Soledad. Probably few of the mineral springs of California have acquired a greater or more favorable reputation than these. There are several springs, varying in temperature from 110° to 140° Fah. The water is used for drinking purposes, as well as bathing, and swimming baths have been prepared for both sexes.

The analyses given below show these springs to be particularly rich in bicarbonate of soda and chloride of sodium. They are actively diuretic and diphoretic, and, when liberally used, laxative. They are particularly distinguished for their curative properties in constitutional syphilitic disease, in chronic rheumatism, and in intractable malarial affections.

A number of instances have come under the observation of the writer, in which great benefit has resulted from a course of treatment at Paso Robles in syphilitic neuralgia, and obstinate cutaneous diseases arising from the same constitutional cause. Analysis in imperial gallon:

	Grains.
Free carbonic acid	10.50
Sulphate of lime	3.21
Sulphate of potassa	0.88
Sulphate of soda	7 85
Peroxide of iron	0.36
Alumina	0.23
Silica	0.44
Bicarb. magnesia	0.92
Bicarb. soda	50.74
Chloride of sodium	27.18
Iodides and bromides—traces	
Organic matter	1.64
Solid contents	93.44

In addition to the drinking water and baths at Paso Robles, there are what are known as the mud or "moor" baths, in which the patient is immersed for a certain length of time. They are stimulating to the skin and nervous system, promote the secretions, and have been thought to be particularly indicated in anæmia, chlorosis, old and obstinate rheumatic and syphilitic affections, in chronic hypertrophy of the liver and of the uterus; also, in old indolent skin diseases. The analysis of the mud or "moor" bath of Paso Robles makes its constituents as follows:

	Grains.
Sulphate of lime	17.90
Sulphate of potassa—traces	
Sulphate of soda	41.11
Carbonate of soda	5.21
Carbonate of magnesia	3.10
Chloride of sodium	96.48
Silica	1.11
Organic matter	3.47
Total	168.38

It contains, also, of carbonic acid, 47.84 cubic inches, and of alumina and the protoxide of iron, traces.

Alum Rock Spring, Santa Clara County.—This spring, or rather the several springs to be found here, is located about seven miles from San Jose, in what is known as the Penitentiary canyon, a romantic passage on the western slope of the Coast Range mountains. The locality is a pleasant one, the surroundings wild and romantic, and in the streams near by facilities are afforded for trout fishing; while the hills everywhere abound in quail and other game. There were noted four springs: the first, nearest the house, used mainly for bathing purposes, and running into the bath houses, temperature, 85°; second, what is called the drinking water; third, the sweet sulphur; fourth, also sulphurous, but weaker than the last mentioned in sulphur and acidulous salines. It is not known that any complete analysis has been made of those springs. They are considered beneficial in anæminic and atomic conditions of the system, in chlorosis, in chronic malarial cachexia, and in debilitated states generally.

Ætna Springs, Napa County.—These springs lie at or near the upper end of Pope valley, at an altitude of 1,000 ft. They are easy of access from the town of St. Helena, from which they are 16 miles distant, by an excellent, graded road over Howell mountain. The location is a pleasant one, the surroundings wild and picturesque, and the atmosphere dry and sufficiently equable. Cottages have been erected for the comfort of visitors, while the grounds afford ample facilities for camping. There are two principal springs, seemingly nearly identical in composition. The temperature is 98° Fahr., and the water is used mainly for drinking purposes. Another, with a temperature of 106° Fahr., supplies the bath-house. The two first-mentioned springs are clear and sparkling, carbonic acid gas being seen to be continually bubbling at the surface. There are also springs called "soda" springs, said to contain iron.

The Ætna springs, though open to the public for only a few years, have already attained considerable reputation, and appear to be rapidly gaining the confidence of certain classes of invalids. Testimonials—perhaps a better test of the value of a mineral water than the most elaborate analysis—from intelligent persons, some of them medical men, have been given, of relief afforded by the use of the water in renal affections, rheumatism, neuralgia, hepatic engorgement, and other similar diseases. They have been compared, not inaptly, in composition and effects, to the Ems water of Europe. The following comparative analysis has been published:

Contents in a Gallon.	Ems. Fresenius.	Ætna. Bauer.
Carbonate of soda, grains	84	75
Carbonate of magnesia grains	7	14
Carbonate of lime, grains	10	10
Carbonate of iron, grains	trace	
Sulphate of soda, grains	trace	8
Sulphate of potash, grains	3	
Chloride of sodium, grains	62	29
Silica, grains	3	trace
Total solids, grains	170	137
Carbonic acid, cubic inches	59	58
Temperature, degrees Fahrenheit	115	98

Skaggs' Hot Springs, Sonoma County.—These springs are located in the Coast Range mountains, 14 miles northwest of Healdsburg, and 8 miles west of Geyserville. The springs and chalybeate well are on the verge of a small "flat," caused by the convergence of the sloping bases of several hills. A hotel has been provided, neat in appearance and well kept, and a number of small cottages for families or invalids; and the excellent accommodations, together with the pure air, the scenery and medicinal properties of the water, render the place attractive. There are two springs of hot water, a small cold soda spring, and a chalybeate well. The principal spring—that most used for drinking and bathing purposes—is situated in the bed of Dry creek, a tributary of the Russian river. It has a temperature of from 130° to 140° Fahrenheit, is clear, sparkling, pungent to the taste, from the large amount of free carbonic acid it contains. This water has been much recommended for rheumatism, sciatica, neuralgia, some forms of indigestion and in chronic diseases of the kidneys. It is believed by the writer to be one of the best springs of which an analysis has yet been obtained, in the indigestion induced by the too free indulgence in alcoholic stimulants, and for the kidney difficulties which complicate such cases. The following analysis was made by Prof. E. W. Hilgard, of the State University; another, made by the writer, giving substantially similar results, is omitted:

	In 10,000 Parts.	Grains per Gal.
Chloride of potassium	0.035	0 200
Sulphate of potassium	0.048	0.260
Chloride of sodium	1.012	5 900
Iodide of sodium	trace	trace
Bicarbonate of sodium	27.672	161.270
Biborate of sodium, borax	4 542	26 470
Carbonate of lithium	0.010	0.060
Carbonate of barium	0 040	0 240
Carbonate of strontium	0.004	0.024
Carbonate of calcium	0.377	2.197
Carbonate of magnesium	0.191	11.113
Carbonate of iron	0 009	0 054
Alumina	0.004	0 004
Silica	1.205	7.023
Total solid ingredients	35.144	205.215

White Sulphur Springs, St. Helena.—These springs are located in Napa valley, about two miles from St. Helena. The grounds have been beautifully laid out and ornamented with shrubbery and evergreens, neat cottages have been erected for visitors, and the entire place with its surroundings, is one of the most pleasant of our summer retreats. There are nine springs, possessing substantially the same medicinal properties, varying only in temperature and in the relative proportion of their solid constituents. Of three of these a quantitative analysis has been made by Prof. LeCompte, the result being the following, in a wine gallon.

	No. 2.	No. 6.	No. 7.
Temperature of spring, August, 1871	89.6 F.	86.0 F.	69.8 F.
Specific gravity	1.00026	1.00040	1.00038
Solids.	Grains.		
Carbonate of lime	1.25	2.44	5.56
Carbonate of magnesia	0 62	0 56	4 36
Sulphate of soda	8.26	11 33	12 84
Chloride of sodium	21.72	23.41	14 23
Chloride of calcium	1.32	0.86	0.78
Chloride of magnesium	0.87	2 22	0 65
Sulphides sodium and calcium	2 65	1.85	1.62
Total	36.69	42.67	40.04
Gases.	Cubic Inches.		
Sulphureted hydrogen	6.15	4.25	trace

The other springs, of which only a quantitative analysis has been made, possess the same ingredients. The waters are used both internally and for bathing.

These springs belong properly to what are called the "light sulphur" waters. Taking into consideration their temperature, more especially that of Number One, which is used principally for bathing purposes, and which is thought to contain a greater portion of sulphureted hydrogen than the others, we can image them useful for the general purposes to which this class of waters are adapted. At the present time, and under present management, the place is kept rather as a pleasant, healthful and fashionable resort for the wealthy citizens of the metropolis and other cities than as a sanitary retreat. For the former it is delightfully adapted; for the latter it might be profitably employed.

Calistoga Springs.—Nine miles from St. Helena, at the present terminus of the Napa railroad, lies the pleasant locality of Calistoga, 500 ft. above the sea. There are five or six principal springs. They are sulphurous and thermal—the temperature of one which was tested being 97°. The waters are employed both for drinking and bathing, and suitable conveniences for the latter have been prepared. They appear to be similar to those of St. Helena, yet probably lighter, containing less of the sulphureted hydrogen and of the metallic sulphides. They have been used with advantage in the diseases to which this class of waters are suited, especially in rheumatic affections. Like the springs at St. Helena, there is the additional advantage of a good hotel. Analysis yields the following result in each gallon of water:

	Grains
Sulphureted hydrogen gas—3.271 cubic inches	
Chloride of sodium	22.250
Chloride of calcium	3.263
Carbonate of soda	3.406
Sulph. soda	1.616
Sulph. magnesia	0.466
Silica	6.500
Alumina—trace	
Total	37.501

The above analysis was made by J. F. Rudolph, of Sacramento.

Harbin Springs.—Twenty miles from Calistoga, in a wild and picturesque canyon of the Coast range of mountains, are what are known as the Harbin springs. Here too are numerous springs, possessing substantially the same medicinal and chemical properties. Like the others of which mention has been made, these are thermal, the principal spring having a temperature of 118° at its source. From this the water is led into bath houses, arranged in such a manner that baths can be obtained of any desirable temperature, either hot or tepid, according to the distance from the source of the supply. Connected with each bath are facilities for the application of steam. No accurate

analysis has yet been made of the water, though an imperfect qualitative analysis is said to show the principal constituents of the two main springs to be, of the one, magnesia and soda, and of the other, the additional ingredient of iron, both being impregnated with sulphureted hydrogen. The Harbin springs are believed to possess the virtues of the weak thermal earthy-saline and chalybeate-saline sulphurous waters. Several obstinate cases of rheumatism, in the chronic stage, coming under the observation of the writer, have been materially benefited by them, and they have been much recommended in some chronic uterine disorders, such as metritis with hypertrophy. As with most of our springs, we find, from personal observation, as well as from the reports of others, that no system or order is observed by those using the water. Each visitor is free to exercise his own judgment, which he often does to his serious injury.

Agua Caliente, or Warner's Ranch Springs.—These springs, which have acquired considerable celebrity in the southern part of the State, are located on what is known as Warner's ranch, in San Diego county, about 50 miles from San Diego city. They are thermal-sulphur waters, and are much resorted to by those suffering from rheumatism, cutaneous diseases and dropsy. At the present time they are in charge of Indian families, who provide rude but, it is said, comfortable quarters for those who prefer not to camp out. By the Indian nations of the country the Agua Caliente springs are regarded as affording an infallible remedy for all bodily ills; and an intelligent friend who visits the locality annually has informed the writer of what are supposed to be remarkable cures of chronic renal and hepatic diseases.

San Bernardino Hot Springs.—These springs, which belong to the calcareous thermal class, are situated five miles from the town of San Bernardino, and about 60 miles from Los Angeles, in an easterly direction. They are easily accessible by the Southern Pacific R. R. from Los Angeles to Colton, and thence by stage. They lie on the side of the San Bernardino mountain. There being no other available account of these springs, I again extract the report of W. F. Blake from the paper of the late Dr. Logan: The warm and hot waters gush out from the granitic rocks on the flanks of San Bernardino and adjacent hights. In one place the springs are so numerous, and the water rises in such volume, that a good sized mill stream of hot water is formed, which flows down into the valley, and is one of the principal tributaries of the Santa Ana river. This brook of hot water retains a temperature of 100° Fahrenheit three or four miles from its source. In the immediate vicinity of the springs, however, no vegetable growth was visible. The rocks and gravel in contact with the water were covered with a snow-white incrustation. The white crust was not found in equal quantities at all the springs. It appeared to be most abundant at one of them. * * * An analysis of the crust, by J. D. Easter, Ph. D., since the return of the expedition, gave the following results: The aqueous extract contained only a small proportion of chloride of sodium. In hot hydrochloric acid, the mass dissolved with strong effervescence, leaving a residue of silica and alumina. The solution contained: Lime (carbonate), chief constituent; silica (soluble in acid); magnesia; alumina and oxide of iron, traces; phosphoric acid, trace.

Gilroy Spring.—This spring is located in the mountains of Santa Clara county, about 30 miles from the town of Gilroy. The access from San Francisco is by the northern division of the Southern Pacific R. R. to Gilroy, thence by stage to the spring. The spring—for there is but one principal spring—is situated in a little mountain valley surrounded by hills. The latter are barren and uninviting, except for the artificial adornments which have been made by cultivation immediately around the spring. The spring itself is located near Coyote creek. The water is clear, hot, containing, according to an unauthenticated analysis, sulphur, magnesia, iron, arsenic, and iodine. It is used both for bathing and drinking. Gilroy spring has a wide reputation for its efficacy in rheumatism and cutaneous diseases, and has become a place of fashionable resort. The locality presents abundant sources of amusement and recreation—trout in the creeks, game of all kinds in the hills. The accommodations at the hotel, both at the table and in the sleeping apartments, are excellent.

Howard Springs, Lake County.—These springs are located about five miles from the "Adams" spring, and one and a half from "Seigler," about five north from "Harbin's" in a direct line by trail. They lie in a flat or basin at an altitude of 2,220 ft., surrounded by hills covered with luxuriant pines. There are said to be 14 springs, hot and cold; the temperature varying from 58° to 109° Fahrenheit. One called the magnesia and potash spring, hot; a warm spring, said to be very strongly chalybeate, with some sulphur, but which is highly charged with carbonic acid; a "borax" spring, a "silica" spring, an "alum" spring, and others. All of these have been named in accordance with the supposed predominance of some particular ingredient, there having been no analysis made of any of them. Excellent bathing facilities have been provided; a hot plunge bath, the temperature being not less than 95° or 98°, and six bathhouses arranged in line, in which water of any desired temperature may be obtained. Number one, the hottest, is said to be about 98°; number two, slightly less warm, and so on to number six, which is cold. There is, in addition, a very cold, sparkling and effervescing "soda" spring, so called, but which is clearly acidulous, which is much used as a beverage with syrup, or with the addition of a little bicarbonate of soda and syrup, when it is drank during effervescence. The diseases for which these springs have been recommended are mainly rheumatism, dropsy, renal and hepatic diseases. There is abundant evidence of their utility in dropsy, dependent upon Bright's disease, and in uterine congestion.

Bonanza Springs, Lake county.—The location is upon the mountain side, among pines which surround and shade them, at an elevation somewhat higher than that of "Howard's," from which they are distant about one and a quarter miles. They are reached by Napa railroad to Calistoga, and thence by stage. There is a warm chalybeate spring, a sulphur spring and a cold plunge bath. These springs are not open for the accommodation of the public, being the property of a Mr. Duke, whose residence, during the season for visiting the watering-places, is on the premises. Parties camping out upon the surrounding hills may, however, avail themselves of the benefits afforded by the water. The writer is not aware of any analysis having been made of either of the springs. They are used medicinally in renal and hepatic diseases, rheumatism, etc.

Fulton Wells, Los Angeles County.—This pleasant resort is situated about three miles north of Norwalk station, on the Los Angeles and Anaheim railroad, and 13½ miles from Los Angeles city. There are two flowing wells of mineral water, bored to a depth of 350 ft. The water is cold, strongly impregnated with sulphur, and containing a considerable quantity of carbonic acid gas. The grounds are the property of Dr. J. E. Fulton, an intelligent physician, who devotes his time to the improvement of the place, and the comfort and health of the guests. The salts are mainly held in solution as bicarbonates, the bicarbonate of iron amounting to 13 grains per gallon or 231 cubic inches. The waters from these wells has been found beneficial in cutaneous diseases, rheumatism and scrofulous complaints. Benefit is also said to have been derived by those afflicted with chronic indigestion. It acts gently upon the the bowels, and decidedly upon the kidneys. Hot and cold baths are provided, and a swimming bath, the water in which is being constantly re-newed, about four ft. deep and 40 ft. in diameter. The following is the analysis of the Fulton wells.

In one gallon of water.	Grains.
Bicarbonate of soda	2.20
Bicarbonate of lime	12.00
Bicarbonate of magnesia	16.50
Bicarbonate of iron	13.00
Sulphurate of soda	.90
Chloride of sodium	10.40
White sulphur	23.00
Total	78.00

Sulphurated hydrogen gas and carbonic acid gas in abundance.

Santa Barbara Hot Sulphur Springs.—The drive from Santa Barbara to these springs, a distance of about five miles, is through a canyon shaded with thick foliage, and surrounded by wild and varied scenery. From the springs themselves the prospect is beautiful, commanding a view of Santa Barbara and the mountains, on the south and southwest, and the broad ocean on the west. The location is near the head of the canyon, nearly 1,500 ft. above the sea, and the atmosphere pure, dry and invigorating. Although the writer has visited the springs himself, the account given of them by Dr. M. H. Biggs, of Santa Barbara, as recorded by the late Dr. T. M. Logan, will give a better idea of their character than would be conveyed by the record of a single hasty examination: "It is said that while this country was in possession of the King of Spain, a corps of scientific men was sent out to this coast, commissioned, among other things, to test the properties of the several mineral springs known to abound there; and, in their report, they pronounced the Santa Barbara hot sulphur springs to be the best and most medicinal, and superior to any other in California 'for the cure of many diseases.' Whether they came to this conclusion from actual analysis or from simply witnessing their effect, is not known. Certain it is that at the present day they are becoming famous for their curative effects in many cases of rheumatism, paralysis, various diseases of syphilitic origin, and skin diseases generally; and from persistent use of the waters (drinking and bathing) many individuals have been cured of such affections." A large, deep spring, or excavation, is used as a plunge bath for those who desire it. The locality of these springs is adapted for a resort for those suffering from other diseases than those to which the water is applicable. The dryness of the atmosphere, the altitude of the place, and its exemption to a very great extent from the northwesterly currents which prevail below, make it a suitable place for the victim of consumption in its early period of development. It possesses, even in a more marked degree, the advantages usually ascribed to the climate of Santa Barbara.

Wilbur Springs.—These somewhat noted springs are located in Colusa county, probably about 30 miles from Colusa. The water belongs to the hot sulphur class, and contains carbonate of soda and sulphates. The following is an analysis of this spring:

Acids—Sulphuric, 29.05; muriatic, 19.20; hydriodic, 7.10; alumina 9.48, free sulphur, 30.07. The acids combine with the bases as follows: 1 Sulphate of potassa; 2. Sulphate of soda; 3 Sulphate of iron; 4 Sulphate of alumina. Hydriodic acid is set free without change.

1. Muriate of potassa; 2 Muriate of soda; 3 Muriate of iron. The iron is in a natural state of oxide—the sulphate of the protoxide.

The water has attained a reputation in rheumatic and cutaneous diseases, and other complaints to which springs of the kind are usually adapted.

Simmons' Hot Sulphur Springs.—Located not far from the above in Sulphur canyon, in Colusa county. They are stronger in sulphur than the Wilbur Springs, and one is said to have a temperature of about 170° Fahr. No analysis has been reported.

Byron Springs, Contra Costa County.—These springs, although but recently brought to the notice of the public, have already acquired considerable reputation. There are said to be numerous springs, sulphurous and saline, hot and cold. Some of them are actively cathartic, others diuretic; some sparkling with carbonic acid, others containing sulphureted and phosphureted hydrogen gas. They are said to have been found useful in the diseases to which mineral waters of this kind are usually adapted—in rheumatism, and in renal and hepatic affections. They are located about a mile from Byron station, on the railroad from Martinez to Sacramento, and near the base of the Mount Diablo range, and of easy access from San Francisco or Sacramento.

The Geysers.—These springs, about which so much has been written, and which form an object of so much curiosity among travelers from the Eastern States, as well as among the people of California, are located in Sonoma county, in a deep gorge of the mountains, through which runs Pluton creek, and about 1,700 ft. above the sea. They consist of many springs, numbered by hundreds, extending along the canyon for a distance of a mile or more, the temperature varying from 200° to 210° Fahr. Then, near by, about three or four miles up the canyon, are the "Little Geysers," consisting of several springs, at a temperature of from 190° to 200° Fahr. Down the canyon, only a mile or two distant, are the "Indian Springs," so named from their having been the resort of the Indian tribes of this vicinity, and from which Edwin Forrest, while in California, was supposed to have derived much benefit. They are not original springs, but are sustained by the union of three streams from the Geysers themselves—the sulphurous, the chalybeate, and the aluminous. These springs are much lauded by the local residents for their efficacy in chronic rheumatism. No analysis, so far as known, has been made of the water. Also, unanalyzed, four or five miles up the canyon, are the "Blue Lick Springs," closely resembling the springs of the same name in Kentucky.

The Geysers, at the present time, are objects of curiosity, rather than of medical interest, though the water of some of them possesses active medical properties—epsom salts springs, iron springs, soda springs, alum springs, and many others in which some ingredient is supposed to predominate. There are also cold water springs, and facilities are afforded for bathing—hot or cold—or these successively.

Unclassified Springs

Highland Springs, Lake County.—These springs are situated in Lake county, about seven miles from Lakeport and Clear lake, at an altitude said to be about 1,700 ft., free from fogs, and in a climate which, like almost all parts of Lake county, is remarkable for its healthfulness. Good accommodations have been provided for guests in the hotel and in cottages. The springs are of easy access from San Francisco by steamer to San Rafael or Donahue, thence by the S. F. and N. P. R. R. to Cloverdale, in Sonoma county, and thence by stage 16 miles. No analysis has been made known, so far as the writer is aware.

Other Springs.—Other springs have been reported, supposed to possess medicinal virtue. One on the mountain near Silver Lake, in Amador county. It is a cold, saline spring, strongly chalybeate. Prof. Price, to whom I am indebted for a knowledge of it, states that it is more highly ferruginous than almost any of the springs of this State.

Another, a soda spring, on the west side of Clear lake, in Lake county.

Another, a saline cold spring, in the Sierra Nevada mountains, near Falling Leaf lake. A quantitative analysis has been made, showing the presence of carbonate of soda, iron, magnesia and lime.

The Magnetic spring, near Watsonville.

Mark West Springs, Sonoma county.

Anderson's Springs, 19 miles from Calistoga. There are hot and cold sulphur springs. No analysis known.

Paraiso Hot Sulphur Springs, Monterey county, six miles from the terminus of the northern division of the Southern Pacific railroad. Said to contain soda, sulphur and iron.

Piedmont White Sulphur Springs, three miles from Oakland. A pleasant place of resort. No analysis has been made known.

The following analysis has been sent me of what purports to be a mineral water discovered in Inyo county, Cal.:

Volcanic Mineral Spring.—This remarkable spring is said to be located in Inyo county, southern California, in what is called Death's valley. If genuine, it is the most wonderful natural water supply which has ever been brought to the notice of the writer. It is a cold spring. The following analysis by Dr. Price has been furnished, the figures giving results in grains per gallon:

	Grains
Chloride of sodium	1,840.72
Chloride of potassium	132.30
Carbonate of soda	1,724.11
Sulphate of soda	651.02
Sulphide of sodium	46.34
Lime and magnesia	traces
Silica	14.28
Organic matter	13.48
Iodine and bromine	traces.
Iron	traces.
Boracic and phosphoric acids	traces.
Total	4,422.25

The water, of which the foregoing is an analysis, is a very remarkable one, being at once a sulphur, salt, carbonate, alkaline and slightly ferruginous water. The digestive and urinary organs are specially affected by alkaline waters; the liver and the alimentary canal by saline ones. The skin and mucous respiratory membranes are, according to the best medical authorities, influenced by sulphur waters, while a special action on the blood has always been attributed to ferruginous sources. When used either internally or externally, it is directed that the water be diluted with pure water. Internally, the dose is fixed at a teaspoonful in a wineglassful of water; externally, it is mixed with one or more parts of water. In its pure state it has a bitter, saline and acrid taste. It is highly praised for its curative properties in rheumatism, catarrhal affections, diseases of the kidneys and liver, dyspepsia and neuralgia. It is powerfully purgative with some, but with others not at all so.

Route to the Yosemite From Nevada.—Tourists seem to think that when they have been to Yosemite valley and the Big Trees, with a flying trip to Tahoe, that they have "done" all the wonders of the Pacific coast. In this conclusion they are away off. For four months in the year tourists can reach Yosemite from this side of the mountains. Taking cars at Reno, the trip down the C. & C. is not devoid of interest. From Hawthorne to Bodie is but 37 miles, and from there to Mill Creek canyon 25 miles. The ride from Bodie to Lundy is full of attractions. Several of the highest mountains of the Sierra are in sight, with Mono lake on one hand, and grand old Castle Peak towering 13,000 ft. high on the other. But the grandest of all mountain trips in the world is through Mill Creek canyon and Tioga district to Yosemite valley. There are changing scenes of awful grandeur along this route which excite continual wonder and admiration; beautiful lakes and streams teeming with trout, and game in abundance. The trip from Lundy to the valley of the Merced, can be made leisurely on horseback in two days in summer. Some enterprising man will, before long, put on a train of saddle animals between these two points. When one party goes over it, the route will advertise itself. The expense of the trip will be less than by the usual route.—*Reno Gazette.*

Employes' Picnic.—Whittier, Fuller & Co., the well known manufacturers and dealers in paints show a praiseworthy interest in their employes and desire for their pleasure and comfort. On decoration day they gave their workmen and their families a picnic at Redwood City, which was largely attended and a very enjoyable occasion.

Volunteer Testimonials from Those Who Have Used Booth's Exterminator.

San Luis Obispo, Ca'

A. R. Booth—*Dear Sir:* We have tried you Squirrel Poison, and find it the best and cheapest of any that we have ever used, and recommend it to all who wish to get rid of the rodent.

Steele Bros., Coral de Piedra,
Jas. H. Blackburn, Paso de Robles,
P. McAbee, Los Osos,
N. Nuckols, Old Creek,
and many others.

Central City, Santa Barbara Co., Cal.

A. R. Booth—*Dear Sir* Your Squirrel Poison gives good satisfaction. Send us some more. Enclosed find check for amount of bill. Kaiser Bros.

Insurance. Now that the season has arrived when the farmers will, to a large extent, insure their growing grain and buildings, we call attention to the Ætna Insurance Co., of Hartford. Its record is without a parallel in this country. Organized in the year 1819, with a capital stock of $150,000 its assets had reached over $6,000,000 in 1871. $3,706,123 was contributed to rebuild Chicago, a larger amount than any Fire Insurance Company has sustained since the world began. To-day its cash capital is $4,000,000, and its assets (exclusively fire), $8,902,272. Fair dealing and absolute security is offered by this old Company.

Dairy Apparatus.—Mr. G. W. Freeman, patentee of the "Dairy Queen Churn and Butter Worker," has made arrangements with the Benicia Agricultural Works to manufacture a large number of this valuable invention. There has been a good demand among dairymen this season for this churn, and from testimonials of those who have used them, we learn that they are highly regarded. To meet the varied demand, four sizes will be made and kept in stock. Parties wishing to have Dairy Queen Churn may address G. W. Freeman, Oakland, or Benicia Agricultural Works, Benicia.

New Gig or Sulky. Something novel and very elegant in the way of a Sulky, may be seen across the way from our office, at the store of Geo. A. Davis, the well-known Agricultural Hardware man. It must be seen to be appreciated. A cut of it will appear in our columns soon. Photographs sent on application to Geo. A. Davis, S. F., or Jacob Price, San Leandro, who is the inventor of it.

Agents can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. Ridout & Co., 10 Barclay St., N. Y.

F. A. HILL, Superintendent. **E. P. PALMER, Secretary.**

BENICIA AGRICULTURAL WORKS,

MANUFACTURERS OF

AGRICULTURAL IMPLEMENTS,

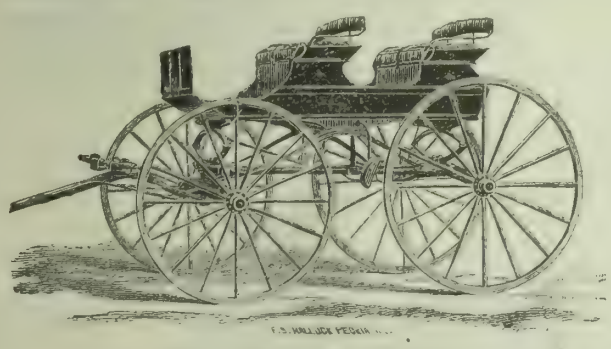
Gang Plows, Road and Field Single Plows, Iron and Wood Frame Harrows, Cultivators, Seed Sowers, Hay Presses, Haying and Harvesting, Machinery Headers, Iron, Farm and Freight Wagons, Patent Iron Gear Spring Wagons, Spring and Thoroughbrace Wagons of all Kinds, Buckboards, Barrows, Store and Warehouse Trucks, Grain Cleaners, Barley Crushers, Eureka Ditching and Grading Plows, Sweepstake Quartz Mills, Etc., Etc.

Recently removed from San Leandro to Benicia, Cal. Formerly Sweepstake Plow Co. The Largest and Most Complete Agricultural Works on the Coast. The buildings are over 1600 feet in length, and have a floor surface of 105,412 square feet, or nearly 2½ acres. The Wharves, connected with the Works by rail, are over 600 feet in length, and have a floor surface of more than 40,000 square feet, including warehouse. The Machinery is entirely new, of latest improved patterns throughout. With this Mammoth Establishment and skilled mechanics in every department, we are prepared to build every kind of implement to order, and parties needing suggestions or assistance in perfecting inventions will have the best kind of aid and assistance, thereby saving time, labor and coin. Our facilities are such as to insure rapid work and prompt shipments, either by rail or water, thus making a good saving for parties in the interior who order goods from these Works. We particularly invite correspondence from the country, and prompt responses will be sent to all inquiries.

SPRING WAGONS.—The increasing popularity and demand for our Spring Wagons, warrants us in claiming for them a superiority over other wagons in this market. We claim a thorough knowledge of the business, acquired by years of experience in both the mechanical and practical construction. With improved machinery and skilled mechanics—using material of the best quality, timber thoroughly seasoned and put together with the utmost care—we challenge comparison with other manufacturers in price for the same quality and finish. We do not compete in prices with the manufacturers of Spring Wagons of an inferior quality, nor shall we impair our work in order to reduce the price, but will build to order Wagons and Vehicles of any kind required, which, for general proportions, style and finish, cannot be excelled on the Pacific Coast, and at a reasonable price. We make a variety of styles, although our Standard Wagons—which we keep in stock and make a specialty of manufacturing—are Nos. 0, 00, 1 and 3. Some of the other styles we do not usually keep on hand, but will build to order. We also manufacture in large quantities and keep in stock (No. 12) Buckboards, as shown in cut below. We manufacture all classes of heavy and light Thoroughbrace and Spring Wagons to order, paint them any color desired, and trim with any kind of material which may be preferred, due notice being given us.

WHEELS.—During the past ten years we have tried almost every description and found none that were strictly adapted to our California climate until we had them built in accordance with our own ideas, based upon years of experience. We now claim to have the best wheel made, being so constructed that they are proportionate in all their parts, with strength and size where required, while the hubs can neither check, swell nor decay, and the grease cannot work through as with other wheels. The entire hub is covered both front and back with two malleable flanges, the outside flange forming the hub band. We have abandoned the use of the Rouse band, which comes higher and is not as good, and will put these wheels on all our wagons unless ordered wood hub. As soon as received from the factory they are passed through boiling oil and placed in the dry house until ready for use. Gearing is best selected Hard Wood, made to our own patterns. Body, best of seasoned Ash, Alder and Sugar Pine, well proportioned. Wood Work all receives a thorough coating of boiled oil, filling the pores of the wood—enabling our Wagons to stand the hot Summer weather of the interior. Springs—Best brand of Swedes Steel, oil tempered; thoroughly tested and warranted, and like our wheels and axles made strictly to our patterns, and for our class of work only.

PAINTING is not excelled in any part of the United States, and material of best quality. The wagons complete are the best that can be made for the money, and are all that can be desired. Stylish, easy running, durable and first-class throughout. We do not prepay freight. Orders from persons unknown to us must be accompanied by the cash, or a convenient satisfactory reference. If a cut is not shown of the wagon desired, please call on us, or our agents, or write us a full description of what is wanted—with an order—and we will guarantee to fill it with satisfaction to the customer and credit to ourselves.



No. 1.—With Pole and Brake.

No. 1 is a stylish 4-Spring Wagon, with Pole and Brake, and 1¼-inch axle. It is adapted for, and extensively used as a Family Carriage—taking the place of a Carriage for that purpose. The seats are easily removed; has a drop tail board, and, for general business purposes, pleasure excursions, picnics, etc., it cannot be excelled. Its style, finish and general appearance makes it a very popular wagon with all. Side Springs, 1¼ inch, 5 leaves. End Springs, front, 1¼ inch, 3 leaves; hind, 1¼, 4 leaves.

Price List:

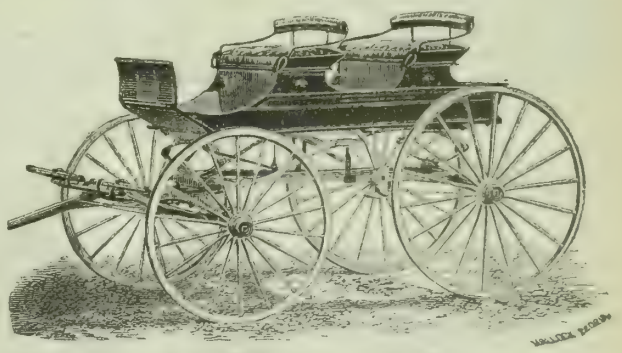
With Wood Hub Wheels.....$220.00 | With Sarven Patent Wheels.....$225.00
Pole for No. 1, $24.00. Shafts for No. 1, $15.00. Brake, $15.00.

No. 1.—With Top.

No. 1, with Top, is a popular Family Wagon and Carriage, and is of the same mechanical construction, style and finish as No. 1 without Top. It is a neat standing Top, with drop curtain; is nicely trimmed and handsomely painted. The Top can be quickly removed if desired, and an open wagon made of it. It takes the place of a more costly vehicle, and supplies a want long felt for a stylish cheap Carriage. Axle, 1¼ inch. Springs same size as used on No. 1.

Price List.

With Wood Hub Wheel.....$270 With Sarven Patent Wheel..$275



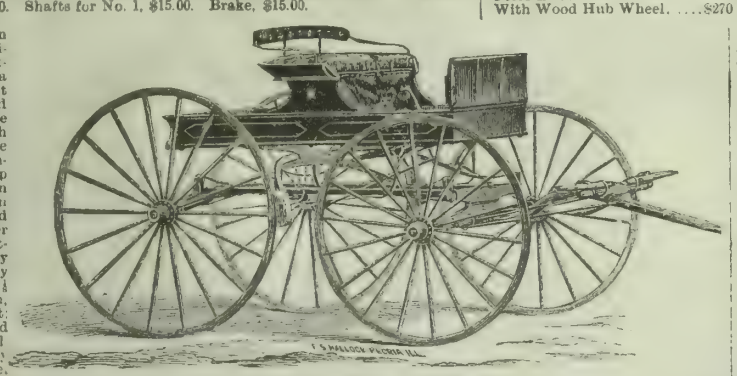
No. 3.—With Pole and Brake.

No. 3 is built very much on the style of our No. 1 Wagon, 4 springs, but has 1¼-inch axles and heavier springs, intended for heavy work and loads; has a drop tail board and good length of body, while the seats are easily removed. It is used as a Grocery and Express Wagon; and for farmers who require a wagon for family use and farm purposes, we can highly recommend it. Price List:

For Open Wagon, Wood Hub Wheel. $225 | Sarven Patent.....$230
For No. 1 Top Wagon " " .. 275 | " " .. 280
Pole only..... 24 | Brake only..... 15

No. 0, as shown in cut, is a light Business Wagon. It is extensively used as a Delivery and light Express Wagon, and is made with Pole and Brake, or with Shafts only. The springs are so constructed as to take up what they lengthen out; are hung upon jacks, and will hold up a much heavier load than springs attached the ordinary way. It is stylishly painted. Axle, 1¼ inch. Springs, ¾ inch, 5 leaves. Price List:

With Shafts and Wood Hub Wheel $155; with Pole only and Wood Hub wheel, $167; Sarven Patent Wheel, with shafts $160; Sarven Patent Wheel, with pole only, $172. Add to above prices for Brake, $12. No 0 Shafts not leathered, $12; No 0 Pole, $24.



No. 0.—With Pole and Brake.

No. 00 is a light Side-spring Wagon—or Buggy—put up with our Patent Equalizing Rods, which cause the body to set level when unevenly loaded; that is, when the load is upon one side, the body will remain level, and not tip sid ways, as is common with side springs. It also makes it ride much easier. Its price makes it popular as a Business Wagon as well as Buggy, it being light, stylish, and neatly painted. Axle, 1 inch. Springs, 1½ inch, 4 leaves. Price List:

With Shafts and Wood Hub Wheel, $160; with Pole only and Wood Hub wheel $170; Sarven Patent Wheel with shafts only, $165; Sarven Patent Wheel with pole only $175. No 00 Shafts leathered, $15. Brake for No. 00 put on, $12. Pole for No. 00, $24.

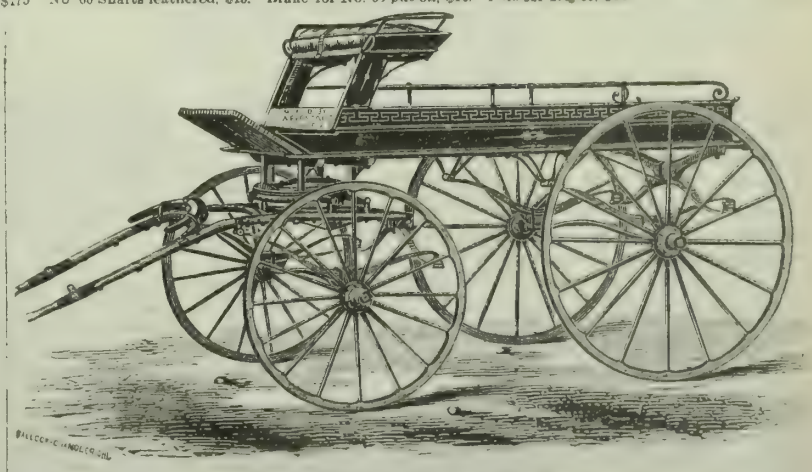
No. 00.—With Patent Equalizing Rods.

No. 12.—Gem Patent Buckboard, with a Combination of Steel and Wood Springs.

Is Stylish, Light, and Easy Running, nice for Business or Pleasure. The Hill's Patent Buckboard is fast coming into favor on account of its combining all the essential points required in style, shape and workmanship. The flexibility of the steel springs, combined with that of the wooden side bars, secures an ease in motion not heretofore attained in Buckboards.

PRICE LIST.

1 inch Axle, Shafts, Sarven Patent Wheels, Iron Dash	$133.00	With 1¼ Axle, add to above prices	5.00
1 inch Axle, Pole, Sarven Patent Wheels, Iron Dash	145.00	With 1½ Axle, add to above prices	10.00
1 inch Axle, Pole & Brake, Sarven Pat. Wheels, Iron Dash	155.00	With Leather Trimming and Dash, add to above prices	8.50
With Leather Dash, add to above prices	2.50	With high lazy back, same as shown in cut, extra	2.50



No. 4.—Platform Grocery Wagon.

No. 4 is made only to order. It is intended for a Grocery Wagon, and is an elegant and well-made vehicle and well adapted for that purpose. The wheels turn under the body like those of a hack, thus enabling it to turn in a confined space. It has become very popular; it is in every way complete. It has only to be seen to be appreciated. Nothing better in its line can be found.

PRICE LIST.

With Shafts and Brake, Sarven Patent Wheel, 1¼ inch axle.....$240.00
With Pole and Brake, Patent Wheel, 1¼ inch axle.....250.00

A complete description of all our Manufactures cannot be given in the space here allotted, nor in any reasonable newspaper space ordinarily used for Advertising; therefore we invite correspondence, that we may send Circulars and Descriptive Lists. Merchants and Farmers are invited to visit our Works and examine for themselves. It is our aim to excel all in our line of Manufacture in producing not only the best wagons but the best Implements with all the Latest Practical Improvements which are peculiarly adapted to the requirements of our soil, and the Pacific Coast, both in tilling the ground and harvesting the grain; producing articles which combine all that genius, enterprise and practical experience can insure. A guarantee to the purchaser and a credit to the Manufacturer.

Those desiring to visit the Works, can leave San Francisco at 8 A. M. and reach *our station*—Mail Dock—at 9:40 A. M., and return via ferry to Martinez, at 11 M.; by rail, at 5:46 P. M., and reach Benicia at 5:30 P. M., or leave San Francisco at 4:30 P. M. and reach Mail Dock at 6:40 P. M. Trains from Sacramento reach Works at 8:10 and 9:40 A. M. and 5:45 P. M. Trains leaving San Francisco at 8 A. M. and 4:30 P. M., also those arriving from Sacramento at 8:10 A. M. and 5.45 P. M., will stop at Mail Dock by notifying the conductor. All the river steamboats stop at our wharf. Shipments made should be marked "B. A. W., Mail Dock, Benicia."

Address Manufacturers

BENICIA AGRICULTURAL WORKS, Benicia Cal.

Or Agents, **BAKER & HAMILTON, San Francisco and Sacramento.**

THE FRUIT SHIPPING TRADE OF CALIFORNIA.

The Shipping House of M. T. Brewer & Co.

BY J. C. H.

With this issue we give a succinct history of the great fruit shipping house of the Pacific coast, M. T. Brewer & Co., together with a short sketch and portrait of each member composing the firm. As Californians who have battled with the vicissitudes of life on this coast, and by their indomitable perseverance, industry and business sagacity, they have established a permanent and growing fruit-shipping business that has extended over a majority of the States and Territories, added millions of dollars to the wealth of the Pacific slope, and in a large measure helped to make a good name and demand for our California fruits. This entitles them to a cordial recognition as benefactors and representative men of our State. The importance and extent of the fruit-growing interest in this State may be properly appreciated when it is known that one-fourth of its net income is derived from the growing of fruit and horticulture. This firm are the pioneers and leaders in this business, extending back over 12 years, following up the trans-continental railroad as it advanced across the continent. The experiment of shipping with and without ice, of mishaps and delays, form a chapter of reverses, disappointments, losses and discouragements that would have deterred other and less persistent men from continuing in this precarious business. It was a lesson that had to be learned by experience; a science that took years of patient toil to solve, and that with the question of transportation must be considered an equally important one, viz:

Supply and Demand.

The senior of this firm, Mr. M. T. Brewer, had given this subject much of his attention previous to 1870, when the junior partner, Mr. John F. Farnsworth, was admitted. The senior, as the financial agent and general business manager, and the junior, who took charge of the storehouse and shipping department, made a team which results have shown were the right men in the right place, and associated in the right business for developing one of the crowning interests of California—horticulture and fruit growing. Rival houses have vainly attempted to find the "philosopher's stone" in shipment of fresh fruit, going so far as to pay higher wages to men who have been in the employ of M. T. Brewer & Co., or have sent men to seek employment, to learn the art; but in most cases a leakage was left, and the sequel has been that the art can be bought only by experience. Each year their business has assumed larger proportions, and it seems necessary for one of the firm to remain East through the summer to examine the markets, regulate the supply according to the demand, to feed the market and not glut it; in a word, to act as the general agents for fruit growers and fruit consumers. It has been a prominent feature and policy of this house to ship only the best green fruit, allowing the balance to be absorbed by the canneries. The wisdom of this policy soon became apparent, as the fruits of California took a higher standard position in the Eastern markets and commanded the highest price, alike advantageous to grower and shipper. Following this custom with unvarying determination, the brand of M. T. Brewer & Co., as shippers, has become a guarantee for ready sale at the highest price by the car-load by transfer of invoice. In 1880, the *Record-Union*, in its annual review, alluded to M. T. Brewer & Co., and pointed out the remarkable success of this house, and the value of its labors to the horticulture and fruit interests of the Pacific coast, and added that the house was "an established authority for market quotations of fruits throughout California." So general among leading fruit growers has this fact become settled, and a system of fair dealing been practiced by this firm, that large fruit growers contract to sell all their fruit that will fill a standard position at the market price, and the house of M. T. Brewer & Co. fix the price. In the annual review of 1881, the *Record-Union* says: "To give statistics of the business of this house would lead us to speak of hundreds of thousands of dollars paid by it at the railroad office for carriage rates and of millions of dollars which have passed through and been represented by the transactions of the firm in the last few years. In the late season of 1881, the firm employed some 400 men, used over $300 worth of boxes a day, and shipped as high as 50 tons per day of green fruit to the East." While their principal business is shipping green fruit from the Pacific coast, incidentally they are among the largest dealers in canned goods of all kinds, farm and garden seeds, nuts, raisins, dried fruits, honey, jams and jellies, etc. In this connection, and as their seat of business is located at a railroad center, this firm have pursued "a system of purchase and exchange by which the semi-tropical fruits grown in California and the sea islands, Mexico and Australia are here marketed and then shipped Eastward." Their growing trade and immense business demanded more room, hence in 1881 the firm removed from the old stand on the corner of J and Second streets, Sacramento, to new quarters at Nos. 1006, 1008 and 1010 Second street. Subsequent to this time the *Record-Union* gave the following description of their new house: By the removal they entered upon quarters prepared under a long lease especially for the firm, and it is safe to say that it now occupies as fine a series of storerooms as are to be found on the coast. The firm has the whole building formerly known as the Arcade Hotel. All the upper portion it sublets for residences. The main floor is the chief storeroom, and has a frontage of 55 ft., and a depth of 160 ft., running back to the alley, and is all in one storeroom, divided by an arch of 25-ft. span into two main sections. The front 83 ft. constitutes the salesroom, in the center of which is located the elegantly finished and fitted up counting-room, business and private offices, while all to the rear of the arch is set apart as a packing-room. The offices are models in finish and construction, and are furnished with every convenience and office improvement. To the left of the main storeroom is the sample apartment for dried and canned fruits. Adjoining is a hat and coat-room, and next the elevator running between this and the lower floor. At the right of the main storeroom, is the canned fruit and seed department and a swinging platform for choice seeds and nuts. The seed department is an admirably neat arrangement of drawers and bins. The packing-room is fitted with car tracks and noiseless trucks. The entire basement story is utilized for packing, as also the sidewalk space, giving in all 175 ft. of depth. This floor is on a level with the alley, making it very convenient for the receipt and discharge of goods.

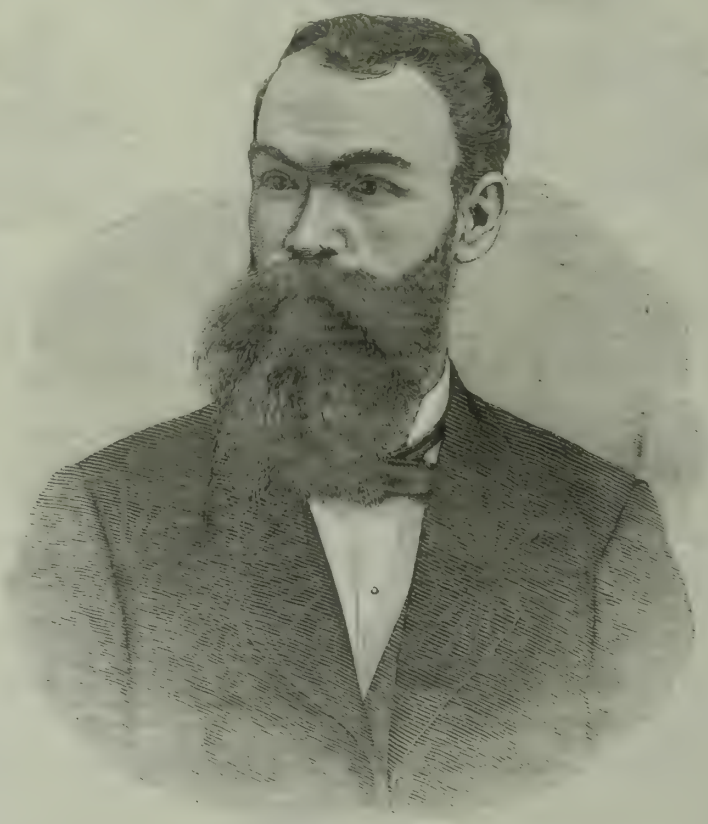
At the meeting of the State Horticultural Society October 28, 1881, in the Academy of Sciences building, S. F., M. T. Brewer (by request) delivered an able and eloquent address on the fruit-shipping interest of California. Passing to the green fruit department, he showed that the welfare of growers and shippers was identical; that the cost of shipping green fruit to the East is so great and the exigencies of the trade so numerous as to render it eminently one of risk, and that there should be a closer bond of union between shippers and growers. The following statement was given, showing the growth and importance of green-fruit shipping for the last 10 years east of the Sierra Nevadas:

1871	2,360,000 lbs.
1872	2,144,500 "
1873	2,891,600 "
1874	5,032,800 "
1875	2,882,800 "
1876	6,785,500 "
1877	5,389,400 "
1878	4,812,600 "
1879	7,187,300 "
1880	8,121,600 "
1881	10,000,000 "

The freight alone on green fruits shipped out of the State in 1881 amounted to over $300,000, and the bulk was sent by the house of M. T. Brewer & Co.

This firm has made available the unused and unusable fruit wealth of the State, stimulated the planting of orchards and vineyards, so that millions of acres on the hillsides, which but a few years ago were covered with chaparral and brushwood, are now dotted with the grape-vine; and where the miner for years had torn the face of the earth with the hydraulic, is now growing the vine, the apple, the peach and the luscious Bartlett. Extensive as are the ramifications of their present business, receiving contributions from every zone and clime, grand as the results of their enterprise have been to the Pacific coast, full as the measure of their individual prosperity has been hitherto, it sinks into insignificance when compared with the boundless field which opens to them in the immediate future, with their experience, sagacity and reliability as the general agents for what will hereafter be the source of the world's fruit supply. In the grand developments of the 19th century in all portions of this great commonwealth, the necessities of the age have brought to the front men who have molded, guided and controlled great enterprises and grand achievements. It is but a just tribute to the firm of M. T. Brewer & Co. to say that, as shippers of green fruit, they stand to-day without a peer, and are justly entitled to be named the "Fruit Kings" of California.

M. T. BREWER.



J. F. FARNSWORTH

M. T. Brewer,

The senior member of the firm of M. T. Brewer & Co., was born in St. John, New Brunswick, on the 21st day of May, 1838. At an early age he commenced to earn his own livelihood, his father having died during his infancy. In his youthful occupation, that of a surveyor, he showed great proficiency, and its salutary influence laid the foundation for a robust constitution, that has enabled him to pass through excessive labors with unimpaired vigor. He is a man of fine physique, good hight, active, restless temperament, and turns the scale at 200 lbs. His promising family consists of a wife and five children. In the year 1863 he came to California, opened a book store in San Francisco, and continued in this occupation a year. During the year 1865 he commenced the fruit business as one of the firm of J. W. Nye & Co., in San Francisco. After a survey of the field he determined to change his headquarters to Sacramento, a short time after which the present firm of M. T. Brewer & Co. was formed. Having pursued an active business life, he has steadily refused to accept positions of civic honor and trust, although he has given much attention to fraternal and benevolent societies, and has been honored with the highest offices in their gift. Benevolence is a prominent feature of his life, and, as characteristic of him, we quote from a contemporary: "His home is his paradise—his best and happiest hours when he is doing something for his brethren, or visiting and assisting the poor, sick and distressed of his neighbors. His life has been active and busy, toiling early and late. Sagacious, farseeing and energetic, with great force of character, his mind is capable of grasping large projects, and by his frankness and candor he impresses men, and carries out large undertakings to a successful termination."

John F. Farnsworth.

The junior member of the firm of M. T. Brewer & Co., John F. Farnsworth, was born in Edinburg, Portage county, Ohio, in November, 1839. He is now in the prime of life, of active business habits, medium hight and size, and previous to his association with this house followed the occupation of architect and builder, and as a natural and practical architect his skill was brought into requisition in planning and giving instructions to the builders while fitting up his present model shipping house and office. Arriving in California, in September, 1852, from across the plains, a mere boy, he has, by indomitable will and industry, been at the front as a leading citizen in the northern part of our State, as miner and builder, until he became a fruit dealer and shipper in Sacramento. He is married and blessed with an estimable family, consisting of a wife and three children. Unassuming, modest and domestic in his habits, his worth as a citizen is known only to those in his immediate surroundings where he has lived, or who have had business transactions with him. He is a man of strict integrity, positive in his likes and dislikes, a fertile mind ready in resource, and one that can follow in detail a business of enormous proportions. His life has been and is a busy one, especially during the shipping season, when from 18 to 20 hours has been given each day to supervising, forwarding and receiving fruit. Benevolent, kind-hearted and charitable, his unostentatious deeds of kindness to the poor and needy are well known, especially to those who have for years received from his storehouse donations of fruits and otherwise liberal and regular gifts. As one of the firm who has helped to make the great shipping house of M. T. Brewer & Co., he will be held in remembrance as one of the useful and honored citizens of California.

RIVERSIDE COLONY LANDS.

Five and Ten-Acre Tracts

IN THE VILLAGE OF ARLINGTON,

Comprising one mile square, on the celebrated Magnolia and other avenues; the choicest locations in the whole Valley.

Also, a quantity of other lands scattered throughout the valley,

IMPROVED

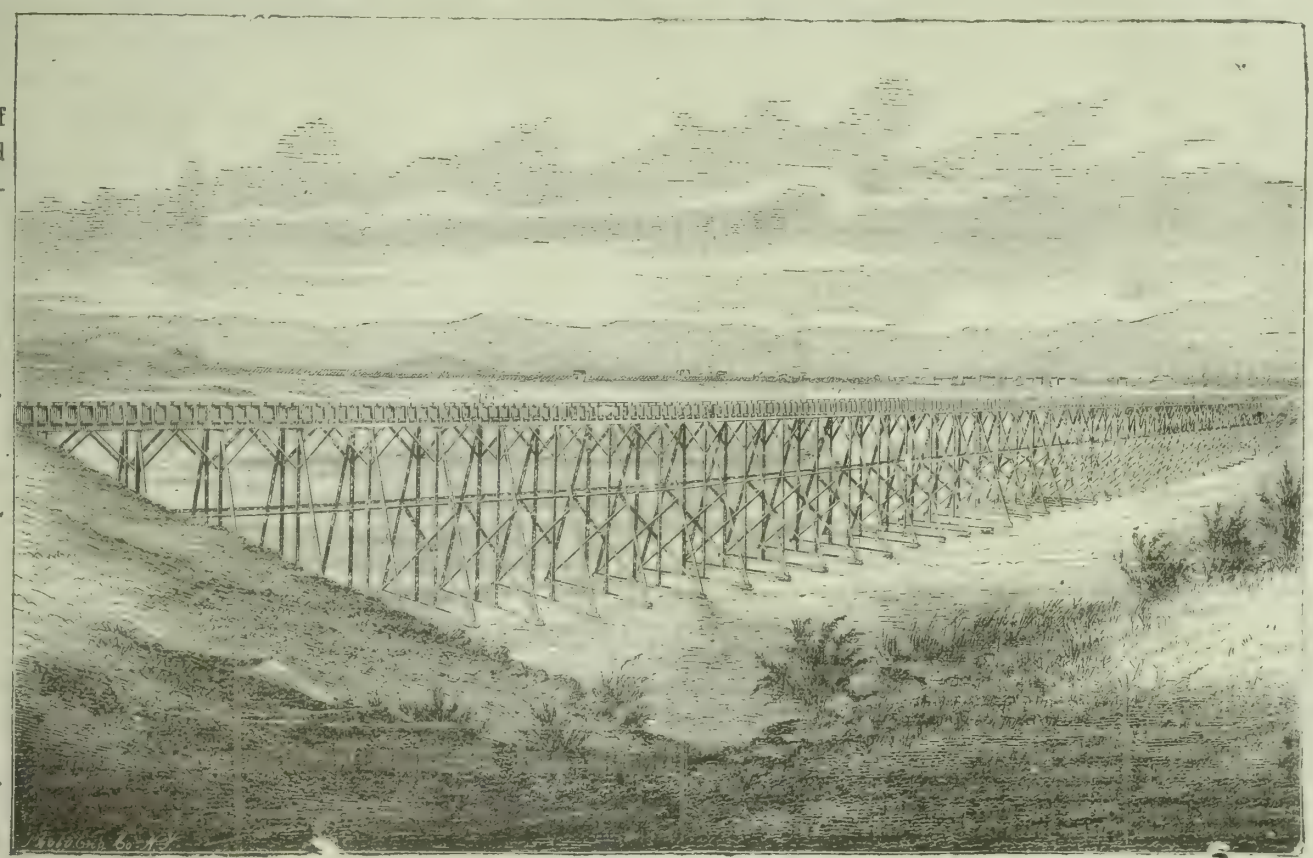
AND

UNIMPROVED.

STREETS ALL GRADED,

AND

LAND LINES Planted to CYPRESS.



IRRIGATING FLUME, OR ACQUEDUCT, AT RIVERSIDE, CAL

All these lands are surrounded by

Valuable Improvements,

Many of the residences costing from $5,000 to $15,000 each.

PRICES

FROM

$150 to $250

PER ACRE,

With one share of canal stock attached to each acre, giving perpetual water right (with water delivered to lands), and ownership in canals in pro rata proportion to lands that can be irrigated.

Terms to suit Purchasers, from One to Five Years.

POPULATION

ABOUT

2,000.

CHURCHES

AND

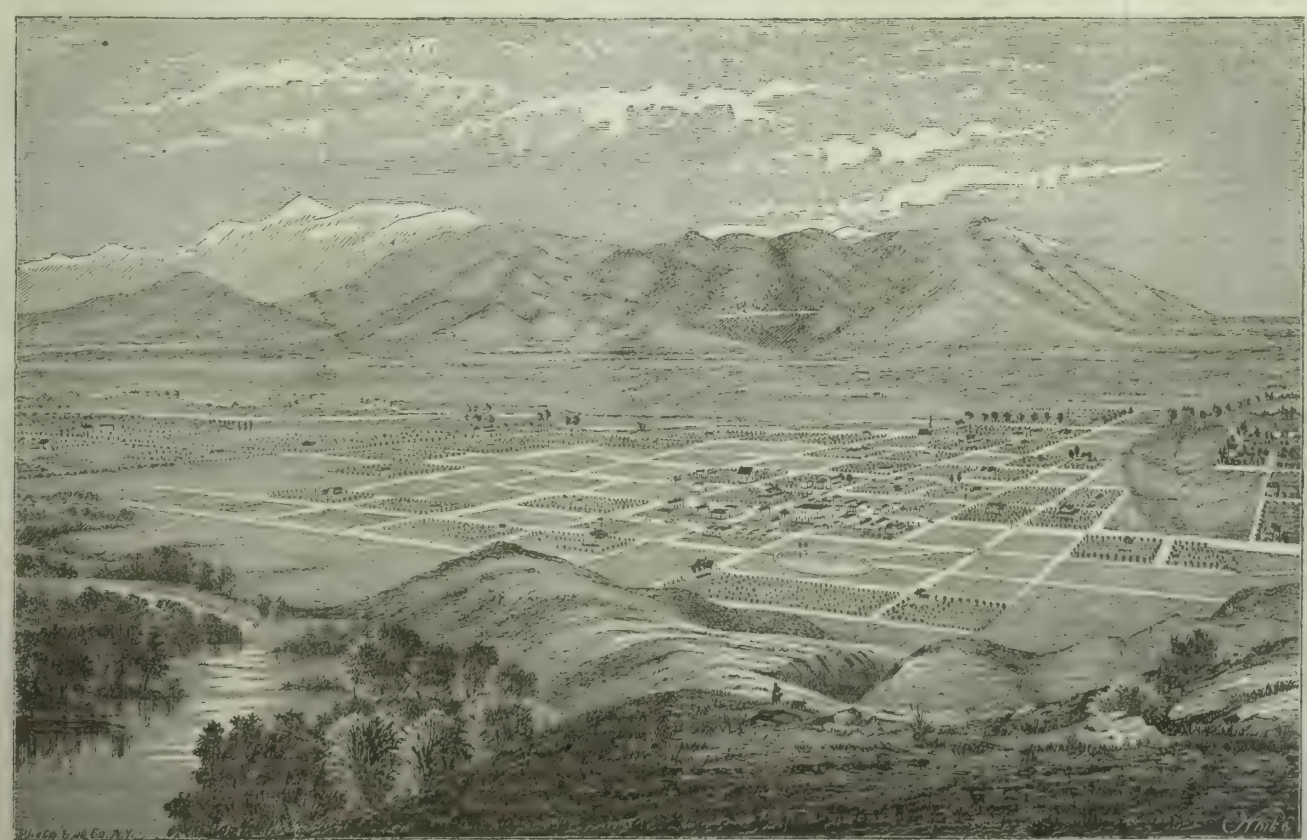
SCHOOLS

Well established.

Railroad Facilities

EQUAL

To any in the State.



VIEW OF RIVERSIDE AND THE MOUNTAINS LYING TO THE EASTWARD.

CLIMATE

As Near Perfect

AS MAY BE.

THE SOIL

IS

UNEQUALED,

WITH

UNQUESTIONED

Water Supply.

The Quality of Citrus Fruits and Raisins Universally Acknowledged as Superior.

COME AND SEE FOR YOURSELVES, OR ADDRESS

S. C. EVANS, President, · · Riverside, Cal.

Health and Pleasure Resorts of California

In order to secure, if possible, a comprehensive compilation of useful information concerning the many health and pleasure resorts of the State, we sent to each of which we had the name a circular requesting facts for publication. Some of the proprietors took the pains to send us just the information we desired; others have thus far neglected to do so. For this reason our group of descriptions is not so complete as we could desire, but its lack is not owing to any fault of ours. The points given below are derived from the statements of those interested in the springs, and they are published on the authority of the writers. We trust the compilation may be of service to those who are asking where to go for a summer vacation:

OJAI VALLEY—The Ojai valley is situated 38 miles from Santa Barbara, 15 miles from San Buenaventura, and 15 miles from Santa Paula. The roads are good. The Casitas Pass road from Santa Barbara is one of the finest drives in southern California. The climate is unsurpassed, especially for lung, throat or asthmatic troubles. The elevation is 1,000 ft. Grand scenery; splendid live oak trees; good hunting and fishing, warm and cold sulphur springs in the hills. The Ojai Valley hotel is well furnished. The table is set with the best the market affords.

ST. CHARLES HOTEL, under the management of R. C. Wornes, is in Monterey, one mile from Hotel del Monte and two miles from Pacific Grove retreat. The rates at the hotel are $1.50 and $2 per day, or $8 and $10 per week. The hotel is open the year round, but the season begins about the 1st of May. There are 18 miles of fine graveled drives.

THE GRAND HOTEL of Santa Rosa, W. Montgomery proprietor, is eight miles from Mark West Springs and 16 from Petaluma. Stages leave the hotel daily for Mark West, Sonoma, Freestone, Calistoga and the Petrified Forest. The hotel is open the entire year. The rates are $2 per day, $9 to $12 per week, or $30 to $40 a month.

THE LATHROP HOTEL and railroad eating station is situated at Lathrop, San Joaquin Co. It is under the management of Stackpole & Lincoln. The rates are $2 per day. All trains stop here 25 minutes for meals.

THE PACIFIC CONGRESS SPRINGS were established in 1866, by the Congress Springs Co. They are located at Saratoga, 12 miles southwest of San Jose. The present proprietor is Lewis A. Sage. The springs are 55 miles from San Francisco, and may be reached via S. P. C. R. R. to Los Gatos, and thence by stage; through fare, $2.75. The altitude of these springs is 680 ft. They are 15 miles from New Almaden; 12 miles from Guadalupe mines, and 30 miles from Santa Cruz. The season opens on April 15th and closes September 30th. The rates are $2 50 a day, $10 to $17.50 per week, or $40 to $75 per month.

ADAMS' SPRINGS, situated in Lake county, were established in May, 1872. The proprietors are Messrs. Miller & Stolle. They are about 100 miles from San Francisco, 28 miles from Calistoga and two and one-half miles from Glenbrook. The route is by rail to Calistoga, and the remaining 32 miles by stage, via Glenbrook. They are within 16 miles from Lakeport and only 10 miles from Lower Lake. The rates are $2 per day, $10 and $12 per week, or $35 and $45 by the month. The season usually opens on April 15th, closing an the 30th of November.

THE PASO ROBLES SPRINGS were established in 1860 by D. D. Blackburn. The present proprietors are Blackburn Bros. & James. The springs are situated in San Luis Obispo county, at an altitude of 1,150 ft. They are 210 miles from San Francisco and 27 miles from San Luis Obispo. They may be reached from San Francisco either by rail, via Soledad, or by steamer, via Port Harford, the fare being $14. The rates at the hotel are $2 to $2.50 per day, $12 to $17.50 per week, or $70 by the month. The hotel is open during the entire year.

MAMMOTH GROVE HOTEL, at the Calaveras Big Trees, was established in the year 1853, by Wm. Lapham. The present proprietor is Mr. J. L. Sperry. It is 150 miles from San Francisco, 85 miles from Sacramento and 65 miles east from Stockton, in Calaveras county. The altitude is 4,500 ft. It is reached by rail to Milton, and from there by stage; the fare is $11.50. It is 15 miles from Murphy's. The season opens in April and closes in November. The rates are $3 per day, or $12 to $14 per week. The climate is fine; also good trouting and sporting.

BARTLETT SPRINGS, under the management of Messrs. Clarke & Crigler, are in Lake Co., 16 miles northeast of Upper Lake, and 40 miles west of Williams' station, Colusa county. They are at an altitude of 2 300 ft. They are situated 185 miles from San Francisco, and 100 miles from Sacramento. They may be reached from San Francisco by rail as far as Williams, thence 40 miles by stage, the fare being $11.75; or via Cloverdale and Lakeport for $10; or via Calistoga and Lower Lake for $10. They are 16 miles distant from Clear Lake, 23 miles from Blue Lakes, and 26 miles from Lakeport. Rates at the hotel are $2 per day, $10 and $12 per week. Cottages for campers are from $2 to $6 per week. The springs are open the year round, but summer visitors start the 1st of April, and continue until October 1st. Bartlett springs are second to none for medicinal properties, climate, scenery, trout streams and hunting grounds.

ANDERSON SPRINGS were established by Anderson & Patriguin, who are its present proprietors. They are situated in Lake county, about four miles from Middletown, at an altitude of 1,950 ft. From San Francisco they may be reached for $5.50 via Calistoga, from which place the springs are 19 miles distant. They are within a few miles of several other noted springs, Harbin being only seven miles distant; Adams, 11 miles; Seigler's, 14 miles; Geysers, nine miles, and Glenbrook, eight miles. The rates are $2 per day, $10 to $15 per week, and reduced rates for longer periods. The season opens about the 1st of May, and remains open according to the season. The hot sulphur spring contains iron, sulphur, borax and lime; the cold spring, soda, sulphur, iodine and iron; and the sour spring, persulphate of iron.

KELLOGG SPRINGS, owned by Mr. C. H. Holmes, are situated in Sonoma county. They are reached from San Francisco by taking the boat to Vallejo, then by cars to Calistoga, and then six and one-half miles staging over a fine road. The springs are 16 miles from the Geyser Springs, and on the direct route. The season opens from the middle of May to June 1st, and closes in October. The rates are $10 to $12 per week, half price for children and servants. There are large streams of cold water about the springs, affording fine trout-fishing. Kellogg Springs are situated at the base of St. Helena mountain, and are surrounded by scenery unexcelled in California. The climate is delightful, warm and genial; the thermometer standing about 60°. Evenings may be safely spent in the open air. There is extensive trout fishing; also fine deer and quail hunting. Beautiful drives and walks about the springs. There is also a fine livery stable and laundry convenient. It is one of the finest summer resorts for families.

HARBIN HOT SULPHUR SPRINGS, situated in Lake county, three miles from Middletown, were established by Messrs. Richie & Harbin in the year 1852. The present proprietor is Richard Williams. The springs are 85 miles distant from San Francisco, and 100 miles from Sacramento, at an altitude of 1,700 ft. They are reached by cars to Calistoga, and the remainder of the distance to the springs by stage. The entire expense from San Francisco is $6.50. The springs are eight miles from Adams' Springs, 20 miles from Calistoga, 25 from the Geysers and 10 miles from Seigler. The springs are open the year round, but the season usually commences about the 15th of April. The Harbin springs contain sulphur, iron, arsenic and magnesia, and resemble the La Malon springs, in the south of France. The rates are $2 to $2 50 per day, and $12 to $15 per week. Stages leave Calistoga daily on the arrival of the morning trains from San Francisco and Sacramento. A wagon road was built last year from Harbin to Adam's Springs.

SODA BAY HOTEL is situated on Clear lake, four miles northeast from Kelseyville. It was established in the year 1876, by Rev. R. Wylie, of Napa, who still owns it. The present lessee is A. K. Gregg. It is 120 miles distant from San Francisco, at an altitude of 1,300 ft. It may be reached from San Francisco, either via Cloverdale or via Calistoga; the fare by the first route being $7, by the latter $8.50. Soda Bay hotel is 10 miles from Sulphur Banks, nine from Highland Springs, nine from Lakeport and 14 miles from Basset's. The season opens with the 1st of May and closes about the 1st of September. The rates are $2 a day, or $12 by the week. The spring is the largest thermo-mineral spring of its kind in the world, boiling two ft. above the surface of the lake. It is inclosed for bathing purposes, etc. The temperature, etc., is about blood heat, and is claimed by many tourists to be the finest bath either in Europe or America. The water contains iron, soda, etc.

TUBBS' HOTEL, Oakland, is situated on Central avenue, between Fourth and Fifth avenues, East Oakland. It was established by M. Tubbs, but is at present under the proprietorship of Sheldon I. Kellogg, Jr. It is reached from San Francisco either by the C. P. R. R. or S. P. C. R. R., at an expense of 15 cents a single trip, or $3 per month. It is situated at an altitude of 30 ft. The hotel is always open, and the rates are $2.50 per day, or $50 per month.

SEIGLER SPRINGS.—Dr. J. T. Boon established Seigler Springs in 1867. The present proprietor is John Spaulding. Seigler springs are five miles south of Clear lake, and six miles east from the town of Lower Lake. They are situated at an altitude of 3,000 ft. The springs are 110 miles from San Francisco, and may be reached via Calistoga or Glenbrook. They are six miles from Lower Lake, three miles from Adams Springs, Glenbrook six miles, and three from Howard Springs. The season opens with the 1st of April. Seigler springs are hot mineral springs, and have no equal in the State for the accommodation of pleasure seekers and invalids. There are swimming baths and baths of any desired temperature. There is excellent fishing, also, a fine race-course and pleasant drives. Considerable improvements have lately been made, a new bath-house having been added, also, swimming baths and a new dining-room. The rates are $2 per day, or $10 to $12 per week.

GORDON'S SPRINGS, established in 1880, by Chas. A. Corum, are under the proprietorship of Joseph S. Hoffman and E. Hoffman. The springs are situated in Cobb valley, Lake county, on the stage road between Calistoga and Lakeport. They are 100 miles from San Francisco, and may be reached by railroad and stage, at an expense of from $6 to $7. The season opens in May and closes in October. Among its many attractions are the mineral and good cold water, the fine camping grounds, pure mountain air and spring water. It is from three to four hours' travel from Calistoga. The scenery is beautiful and the climate is unsurpassed for salubrity. The rates are $1.50 per day, and $8 by the week.

ÆTNA HOT SPRINGS are situated 16 miles east of St. Helena, in Pope valley, Napa county. The proprietor is W. H. Lidell. These waters closely resemble those of Ems, Germany, in analysis and sanitary effects. They have cured many cases of heart, kidney, spinal and liver diseases; also, dyspepsia, jaundice, paralysis, erysipelas, rheumatism, sciatica, neuralgia, general debility, bronchitis and pulmonary complaints in their early stages. There is a resident physician at the hotel. Board and baths, $10 per week. The Ætna Springs stage will leave the depot at St. Helena daily, upon the arrival of the cars, 11:30 A. M. People leaving San Francisco at eight A. M. will reach the springs at four P. M. The fare is $2.

HIGHLAND SPRINGS SANITARIUM.—This popular and healthful summer and winter resort for families, pleasure seekers and invalids, is situated in Lake county, 25 miles from Cloverdale, seven miles south of Lakeport, four miles of Kelseyville, and in sight of Clear lake, at an altitude of 1,700 ft., and is sheltered from the coast winds and fogs by mountains 1,600 ft. in hight, which, for grandeur and beauty of scenery, are unsurpassed on the Pacific coast, while the beneficial effects of its mineral waters are equal to any in the United States or Europe. Dr. C. M. Bates, formerly of San Francisco, having become sole proprietor, by purchase and lease, of these justly celebrated springs, will devote all necessary time and attention to persons requiring the use of the waters. Good hotel and cottage accommodations. Carriages, buggies and saddle horses furnished at reasonable rates. Cloverdale and Lakeport stage stops at the hotel daily. Post office and telephone connected with hotel. Direct route via San Rafael and Cloverdale, 7:10 A. M., will arrive at springs 5:30 P. M. By steamer *Donahue*, via Donahue landing, 2:30 P. M., will remain over night in Cloverdale; and via Napa and Calistoga, eight o'clock, A. M. On Tuesdays, Thursdays and Saturdays will be met at Kelseyville with private conveyance, if notified.

Health and Pleasure Resorts.

Adams Springs, Lake county, Cal., via Glenbrook.
Allen Springs, Colusa county.
Ætna Hot Mineral Springs, W. H. Lidell, Lidell P. O., Napa county, Cal.
"Anderson's," Donner Lake, Cal., via Truckee.
Anderson Springs, Lake Co., Cal.
Barrow's hotel, Ojai valley, Santa Barbara county.
Bartlett Springs, Lake county.
Blue Lakes hotel, Theo. Deming, proprietor, Blue lakes, via. Lakeport.
Fulton Wells, J. E. Fulton, M. D., Los Angeles county, Cal.
Geyser Hotel, Geyser Hot Springs, Sonoma Co., Cal.
Gilroy Hot Springs, Arrick & Wilmarth, Gilroy, Cal.
Glenwood Magnetic Springs, A. J. Haight, proprietor, Glenwood, Santa Cruz
Gordon Springs, Cobb Valley, Cal.
Harbin Springs, Richard Williams, Lake Co.
Highland Springs, Highland, Lake Co., Cal.
Hot Springs, Calistoga, Napa county, Cal.
Howard Springs, Lower Lake, Cal.
Kellogg's, C. H. Holmes, Sonoma county, Cal.
Lake Tahoe, Placer Co., Cal.
Litton Springs, H. S. Rochholz, Sonoma Co.,
Mammoth Grove Hotel, I. S. Sperry, proprietor, via Murphy's, Calaveras Co., Cal.
Mark West Springs, Mark West, Sonoma Co.
Mead's Sulphur Springs, Byron, Cal.
Napa Soda Springs hotel, Napa, Cal.
Napa White Sulphur Springs, Napa, Cal.
Pacific Congress Springs, L. A. Sage, proprietor, Saratoga, Cal.
Pacific Grove Retreat, Monterey, Cal.
Paraiso Hot Mineral Springs, Reeves Bros. & Fine, Monterey county, Cal.
Paso Robles Hot Springs, Blackburn & Bro., proprietors.
Piedmont springs, Oakland, Cal.
Pierson Springs, Lakeport, Cal.
Siegler Springs Hotel, Lower Lake, Cal.
Sierra Madre Villa, W. P. Rhoades, proprietor, San Gabriel.
Skaggs' Hotel, Skaggs' Springs, Healdsburg.
Soda Bay Hotel, A. K. Gregg, Uncle Sam (Kelsey), Lake Co., Cal.
Summit Springs, Placer Co., Cal.
White Sulphur Springs, Vallejo, Cal.
Witter Springs, via. Lakeport.

HOTELS, RECREATION BOARDING-HOUSES, ETC.

American hotel, J. R. Willis, Auburn, Cal.
American hotel, Moore & Sutton, Petaluma.
Arlington house, Santa Barbara, Cal.
Auzerias House, San Jose, Cal.
Baldwin Hotel, San Francisco.
Blythedale, near Saucelito.
Bodie House, Bodie, Cal.
Capitol Hotel, Sacramento, Cal.
Central hotel, M. O. Connor, San Rafael.
Clark's Big Tree Grove Station, via. Madera.
Clark Foss, Calistoga, Napa Co., Cal.
Cosmopolitan Hotel, Los Angeles, Cal.
Crafton's Sunnyside Retreat, San Bernardino.
Crystal Springs, A. B. Atwood, near St. Helena.
Dakin's Farm, Scquel, Cal.
Depot Hotel, Reno, Nev.
Duncan's Mills, Sonoma Co., Cal.
El Capitan, Merced, Cal.
El Monte hotel, J. F. Slinkey, Saucelito.
Frederick House, Virginia City, Nev.
Galindo Hotel, Oakland, Cal.
Gilbert house, Mrs. Chamberlain, San Rafael, Cal.
Glenbrook, Mrs. G. J. Byrne, Mountain View, Santa Clara county.
Golden Eagle Hotel, Sacramento, Cal.
Grand Central hotel, A. J. Bagley, Tahoe city, Placer county.
Grand hotel, W. Montgomery, Santa Rosa.
Horton house, W. E. Hadley, San Diego.
Hotel del Monte, Geo. Schoenwald, manager, Monterey, Cal.
Hutching's Yosemite Falls hotel, J. K. Barnard, Yosemite.
International Hotel, Virginia City, Nev.
James Cadwell, Tahoe City, Cal.
Kohlmoos hotel, J. Kohlmoos, Alameda, Cal.
Lakeside Mountain hotel, Alma, Cal.
Lake Vineyard hotel, Pasadena, Cal.
Leidig's hotel, Yosemite.
Long Branch baths, Alameda.
Mace's hotel, R. P. Mace, Madera, Cal.
Magnolia Hotel, Cheabros, Calistoga, Cal.
Magnolia Hotel, Oakland, Cal.
Mound Cottage, Lakeport, Cal.
National Exchange, Nevada City, Cal.
Newhall hotel, Newhall, Los Angeles county.
New England Home, Dr. C. N. Miller, San Rafael, Cal.
Newport baths, Alameda, Cal.
Nook Farm, E. B. Smith, proprietor Rutherford, Napa Co., Cal.
Oakes' hotel, Tony Oakes, Haywards, Cal.
Oak Knoll, Napa valley, Napa county, Cal.
Occidental hotel, Geo. A. Tupper & Son, Santa Rosa, Cal.
Ocean House, Santa Cruz, Cal.
Ormsby House, Carson City, Nev.
Palace Hotel, Napa, Cal.
Palace Hotel, Petaluma, Cal.
Palace Hotel, Tucson, A. T.
Park hotel, Alameda.
Plummer's hotel, Woodbridge, San Joaquin county, Cal.
Priest's hotel, W. C. Priest, Big Oak Flat, Tuolumne county, Cal.
Principal Hotel, Santa Monica, Cal.
Railroad hotel, Lathrop, San Joaquin county.
Russian River hotel, Queen & Goode, Duncan's Mills, Cal.
Sisson's hotel, Mt. Shasta, Cal.
Snow's hotel, Yosemite valley.
Southern Pacific hotel, George Seaman, Gilroy, Cal.
Spreckels' hotel, W. H. Stedman, Aptos, Santa Cruz county, Cal.
St. Helena hotel, A. Tonalla, St. Helena, Cal.
St. James' Hotel, San Jose.
Summer House Farm, J. W. De Wolfe, Santa Cruz, Cal.
Swanton House, Pescadero, Cal.
Tamalpais hotel, San Rafael, Cal.
Terrace baths, Alameda.
Truckee Hotel, Truckee, Cal.
Tubbs' Hotel, East Oakland, Cal.
United States hotel, H. F. Gerkhardt, Esq., Cloverdale, Sonoma county, Cal.
Western Hotel, Sacramento, Cal.
Western House, Marysville, Cal.
Wilkins' hotel, P. V. Wilkins, Esq., Santa Cruz, Cal.
Williams' Hotel, Prescott, A. T.
Windsor hotel, S. Alstrom, St. Helena, Cal.
Yosemite House, Stockton, Cal.
Yosemite Valley hotel, Wright & Cooke, Yosemite.

Our Map.

We give herewith a map of California, drawn with special reference to showing the location of mineral springs and other health and pleasure resorts. An effort has been made to make the map as complete and correct in this particular as possible. It is possible, however, that errors of omission have crept in, and of such we shall be pleased to be informed, so that the data may be used at some future time. As the map is the first of the kind which has been attempted, with a view of showing the resorts of the whole State, we trust that it may be acceptable and valuable to our readers.

ACCORDING to a recent publication by the International Arbitration and Peace association of England, it appears that in 1881 there were in Europe no fewer than 3,860,000 men actually under arms; and if the reserves are added and the men who give a portion of their time to the army, the total is not far short of 12,500,000. To maintain this enormous body of men, and the establishments with which they are connected, costs upward of $800 000,000.

DAKOTA is said to be filling up rapidly with immigrants, largely German.

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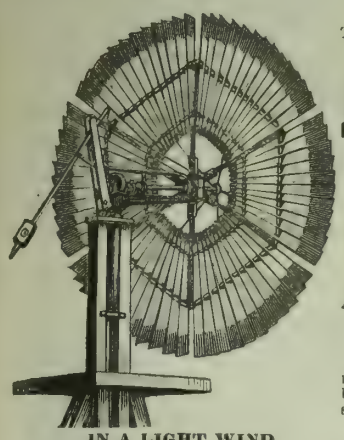

The annexed cuts show an Improved

ALTHOUSE

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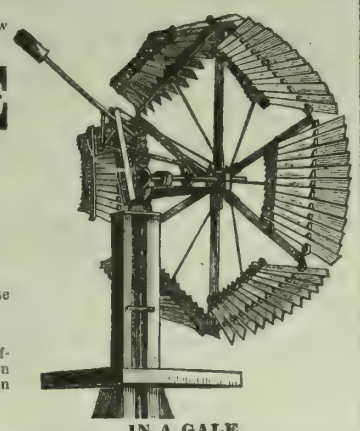
WINDMILL,

As affected by a Moderate Wind and a Severe Gale.

The simplicity of its self-regulating machinery can best be appreciated when seen at work.



IN A LIGHT WIND. IN A GALE.

All who have used it have united in saying that it has superior merits, and is the best Windmill now in use. Its chief points of merit are: Its ability to take care of itself in the severest gale—being so arranged that no increase of wind increases its speed. The material used in its construction and the quality of workmanship being the best. The simplicity of its machinery making it next to impossible for it to get out of order, therefore, when once erected, no further expense is attached to it. The ease with which it runs—starting at the least perceptible breeze, and never stopping unless the wind ceases to blow. It is an ornament to any place, running smoothly, without noise. It has been improved from year to year, until it is superior in all points of excellence. Send for catalogue and prices of Mills. We are manufacturers of

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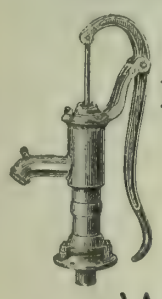

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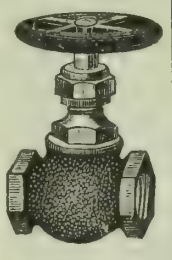

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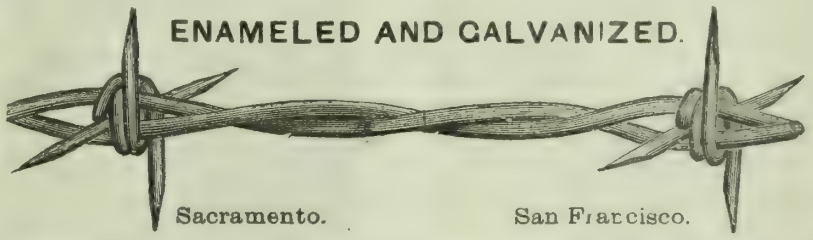

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[ESTABLISHED 1860.]

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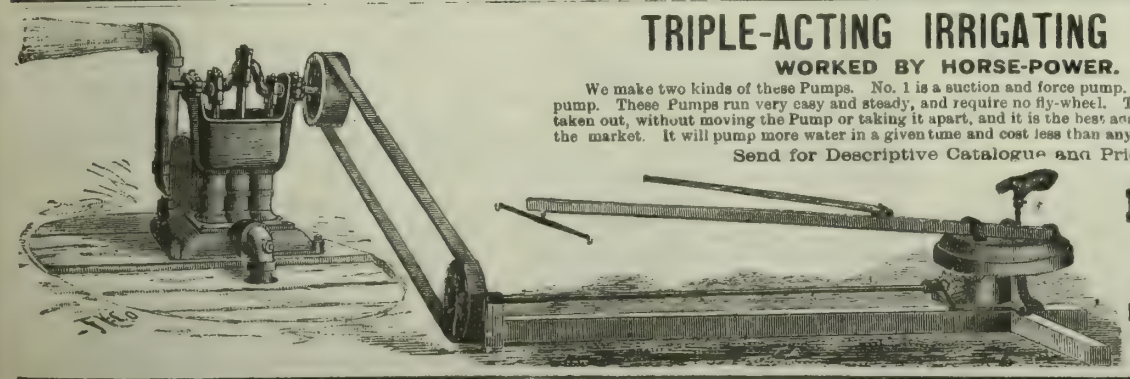

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LAND Good land that will raise a crop every year. Over 12,000 acres for sale in lots to suit. Climate healthy. No drouths, bad floods, nor malaria. Wood and water convenient. U. S. Title, perfect. Send stamp for illustrated circular, to EDWARD FRISBIE, Proprietor of Reading Ranch, Anderson, Shasta County, Cal.

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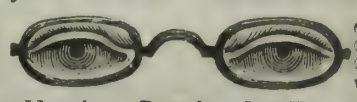
1863  1882

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HEALTH AND PLEASURE RESORTS OF MONTEREY BAY.

Monterey and Vicinity.

The Health Resort of the Pacific Coast.

By J. C. H.

The State of California has a world-wide reputation for its healthful and varied climate, its mineral springs and summer resorts, and is now the Mecca of tourists, travelers, invalids and pleasure seekers, who wish to escape the sultry summer heat or chilling winter winds. In almost every portion of the Pacific slope, each locality has its particular claim in point of accessibility, climate or curative mineral springs. Conceding each one that mead of praise that to it justly belongs, it has become a settled fact, that in and around the historic bay of Monterey there are advantages and attractions, natural and artificial, that entitle Monterey to be named the "queen of watering places."

Pacific Grove Retreat.

The Christian Seaside Resort is situated in a beautiful pine grove two and a half miles from Monterey. The founders of this noted seaside rest made provision by contract that no intoxicating liquors should be sold or gambling practiced on these grounds. The Pacific Improvement Co., as their successors, have not only maintained these provisions, but have improved the grounds, built cottages and established a system of protection and sanitary regulations that makes this resort a haven and a home.

The gentle breezes that are wafted through the thickly wooded pine grove are filled with an aroma that makes the visitor involuntarily exclaim "How pure and sweet the air smells."

Special round trip tickets at reduced rates can be obtained at any station on the line of the Central Pacific, Southern Pacific and California Pacific, and especial privileges granted on baggage, tents, and equipage for Pacific Grove Retreat.

The lodging houses have been renovated and refurnished, cottages and tents erected for rent by the week or season at from four dollars to nine dollars and a half per week furnished. There will be a first class restaurant open night and day, and board can be obtained by the day or week. Mr. S. S. Short, widely and favorably known as a caterer and restauranteur, will have charge of this department; as also a butcher shop and provision store.

The stables will be provided with single and double teams and saddle horses for ladies and gentlemen. Coaches run to all trains, making four trips daily from the grove to Monterey, Hotel del Monte and its new bath-house. Mr. J. O. Johnson, Superintendent of Pacific Grove, will have charge of this department.

Religious services will be held every Sunday in the new chapel, and the Chatauqua Literary and Scientific Circle will hold a session, commencing June 27th and closing July 10th. This assembly is designed to bring together persons of literary and scientific tastes scattered throughout the State, and combine opportunities for healthful recreation and mental improvement. This session promises to exceed previous ones, which have been the most noted attraction of the year. An able corps of professors and lecturers has been engaged, and will be provided with scientific apparatus, stereopticon illustrations of ancient and modern art, that will make these lectures pleasing and instructive to all.

The projectors and managers have succeeded in making this peerless seaside resort a place of rest for the weary, a sanitarium for the sick and a home by the side of the sea, where tired nature and overworked and weary minds can rehabilitate and have an air of refinement, morality and religion around them. This new departure has been eminently successful, and lots that were sold at $25 each last year have doubled and trebled in value this year. The little city of canvas will soon be one of neat and substantial cottages, and those who sought retirement and to escape the sultry summer heat, have found that the equable climate of the Pacific Grove Retreat was equally attractive as a winter resort. This seaside resort will be under the management of a Board of Trustees as a prudential committee, consisting of Rev. H. B Heacock, Chairman, assisted by Rev. Drs. Jewell, Gibson, Stratton and Briggs. R. P. Hammond, Jr., is the general agent.

Santa Cruz.

The place of "one thousand and one" attractions, which is connected by rail at the thriving town of Watsonville, will open her doors and pleasure grounds to receive the multitude that will recuperate and gain health and strength from the fresh breezes of the ocean shore. Tournaments, military encampments, camp meetings, society excursions and private parties to Santa Cruz this season will make this pioneer summer resort the liveliest place west of the Sierra Nevadas. From Santa Cruz south we may see Lake Marina, Camp Alhambra, Soquel, Camp Capitola, Aptos, Camp Goodall—romantic pleasure grounds by the "side of the sea." Through the thriving city of Watsonville, over bayous, across the great Salinas valley and up over the sand dunes, we come to the center of attractions—Del Monte park. Here nature has been most lavish in her gifts, which, united with the art of the landscape gardener and the skill of the architect, has created a miniature world that rivals the most favored resorts of the earth. From an article in the N. Y. *Medical Times*, of January, 1882, written by C. B. Currier, M. D., S. F., we make the following extracts:

Monterey is situated at the extreme southern point of the beautiful bay of the same name, distant from San Francisco only 125 miles by rail, and both for a summer and winter resort I do not know its equal; but in its winter aspect it is simply incomparable. An idea of the evenness of its climate may be had in the following table, prepared by Dr. E. K. Abbott, of the U. S. Signal Service, for the mean temperature of the winter months of 1877 78 79:

Degrees	Degrees.	Degrees.
Dec. 1877, 51.	Jan. 1877, 49.	Feb. 1877, 50.
" 1878, 55.	" 1878, 51.	" 1878, 53.
" 1879, 54.	" 1879, 51.	" 1879, 54.

The following table presents the mean temperature of the two extremes of the year at Monterey, as compared with some other well-known winter resorts:

	Degrees.	Degrees
Monterey, Cal	Jan 52	July, 58
Santa Barbara, Cal.	" 50	" 65
Naples, Italy	" 46	" 76
Mentone, France	" 40	" 73
Jacksonville, Fla	" 58	" 80
St. Augustine	" 59	" 77

The atmosphere at Monterey is dry and invigorating. The severe winds that make Mentone and other resorts on the Mediterranean coast so disagreeable at certain seasons, are unknown here, and the weather is not so cold in winter, or so warm in summer, as in some parts of California, but there is an equability of temperature not to be found in any other place I know of.

There are occasional foggy mornings in the spring and summer months, as there are in most coast districts, but they are of short duration, and are not disagreeable in their effects upon the most sensitive constitutions; but seem rather to add new life and freshness to the air and to foliage and vegetation.

The rainy season commences in November and lasts until March or April, but the popular impression in the East, that the California rainy season is a constant deluge, is incorrect; for there are more cloudless days during a California winter than can be seen in the course of a whole year in any other part of the United States; and after the most copious rainfall the sun comes out warm and clear, and in a few hours there are no traces left of the storm, save an increase of freshness in the air and the natural surroundings, and in 12 hours after there are no signs of mud in the firm road-beds.

Monterey is replete with natural charms besides that of climate; the scenery about the town is beautifully diversified, and there are many fine views of ocean, bay and mountain.

For those who care for salt-water bathing, there is one of the most noted, fine, white-sand beaches in California, and a new feature introduced here, after the plan of Brighton, England, is salt-water plunge baths, heated by steam pipes.

A point often overlooked or deemed of secondary importance in the selection of a health resort, is the necessity of comfortable and cheerful surroundings for invalids. In many places where climate might be favorable, all other points of comfort being conceded, there is often a sad dearth of the requisite accessories that tend to make life a desirable portion to the average seeker of health.

All this is simply provided for at Monterey. The "Hotel del Monte" is not excelled, if equaled, in regard to magnificence, elegance and comfort, by any seaside hotel in Europe or America.

It is picturesquely situated in a grove of 126 acres, and no pains have been spared to make it one of the most attractive resorts to tourists and invalids in United States, if not in the world.

While I would not attempt to describe Monterey as adapted to the requirements of every class of invalids, still for those who desire a dry, pure atmosphere and even temperature, and a climate of neither extremes of heat or cold, I know of none other, at home or abroad, so deserving af comment.

Hotel del Monte.

Hotel Del Monte is under the management of Mr. George Schoenwald, long and favorably known as a hotel keeper. Around this delightful spot there is an air of rest and contentment among the guests that is seldom seen. The appointments and surroundings are suited to all classes of society. The young and the aged, invalid and tourist, can have comforts and enjoyments in this home-like, luxurious resort, which cultivated and refined people desire. As a veteran traveler observed: "There is more solid comfort to the square inch in Hotel Del Monte than any place I have ever seen."

The popularity of this now famous resort is apparent, as it is only two years since its completion, and hundreds from all parts of the United States and Europe have been guests of this hotel; and this year will largely excell any previous season, as over 1,200 from the East have already been registered for the summer months. The excursions on each Sunday from San Francisco ($3 for the round trip) have become so popular that they will be continued until Sept. 1st. Terms are, by the day, $3; by the week, $17.50; by the month, $70.

It is an event in the history of nations that is more strange than fiction, that within one mile from the spot where the apostle of California, Junipero Serra, over a century ago, landed and created a little empire, another generation, race and people have selected the same place—Monterey—"the most charming winter and summer resort in the world," as a rendezvous for rest, health, recuperation and pleasure.

Monterey.

Aside from its historical celebrity, its climate and delightful situation, there are many attractions in the old town, such, for instance, as the Cuartel, on California street, Colton hall, the old block-house and fort, the old custom house, calaboose and commissariat, Catholic church, cemetery, and whaling and fishing points. All of the above-named places are objects of more or less interest, according to the fancy of the beholder. The Catholic church was built in 1794, or nearly 100 years ago, and is constructed of fine white stone; the altar is the work of an Italian, and is regarded as a fine piece of art; there are, also, life-sized paintings of the Saints, and there are other paintings of great age and beauty. A little more than half a mile from town is what is known as Whaling Point, and a quarter of a mile further is the Chinese fishery. Adjacent is the spot where the vessel which took Napoleon Bonaparte from off the Island of Elba was wrecked; a portion of the wreck may still be seen at low tide

San Carlos (or Carmel) Mission.

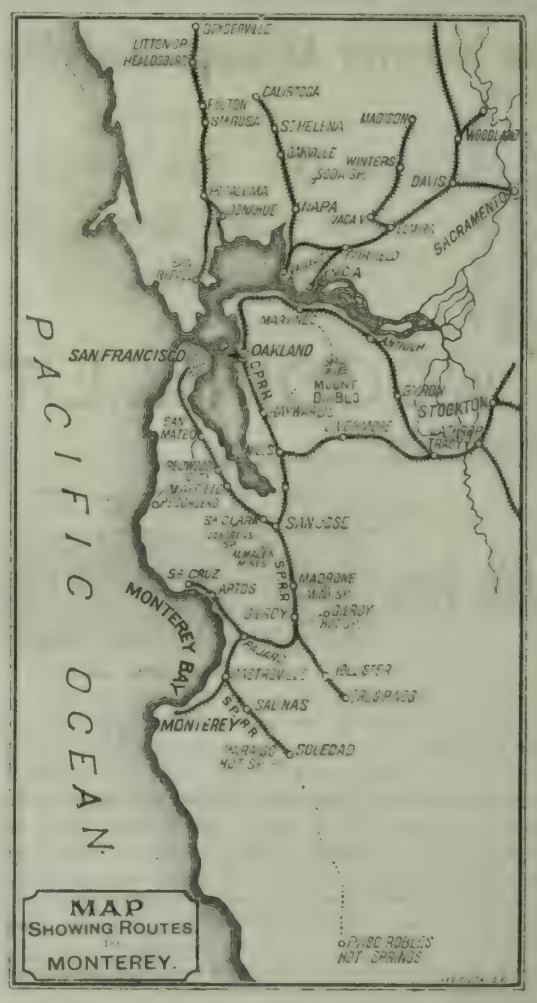
At a distance of about four miles from Monterey are the ruins of the San Carlos (or Carmel) Mission. This mission, one of the four established towards the end of the 18th century in upper California by Father Junipero Serra and his coadjutors in the work of civilization, was founded on the 31 of June, 1770. Among the edifices erected in upper California by the missionary fathers, that of San Carlos was one of the best in style and material. There were good ideas of architectural form in the head that planned this solid building. The two great towers gave an air of dignity to the vast construction, and one sees, now that ruin has overtaken them, what it cannot be merely fanciful to suppose was intentional with the designer, that there is a prevailing slope of the walls of the main building from the ground to the roof, so that the general form of the church, seen *vol d'oiseau*, recalls that of a mound, the very shape the Syrian Mount Carmel. It is a noble building, standing in a landscape full of enchanting beauties.

In the churchyard of the mission lie remains of 15 Governors of this Province and the tomb of the apostle of California, Junipero Serra, who died in 1784, still zealous in his great work. The lands surrounding the Carmel Mission were fertilized by a perennial stream of pure water, and thus offered advantages which the fathers were not slow to avail themselves of. It was on the lands of this mission that the first potatoes grown in California were raised, in 1826. The privilege of planting this esculent was given to the natives without limit, and they so improved their opportunities that the whalers, which made a regular stopping place of Monterey, supplied themselves with great quantities. The temporal welfare of the estate had reached a great development in the year 1825, when the fathers possessed 90,000 cattle, 50,000 sheep, 2,000 horses, 2,000 calves, 370 yoke of oxen, with merchandise to the value of $50,000, and over $40,000 in silver.

Cypress Point.

The officers of the coast survey, Prof. Sanders, and hundreds of others who have visited Cypress grove, declare that there are no such trees elsewhere in the world—that this grove stands alone. The ride to this point is one of the most delightful in the vicinity.

LIFE AT "PACIFIC GROVE", MONTEREY.



MAP SHOWING ROUTES TO MONTEREY.

A. W. SANBORN & CO.,

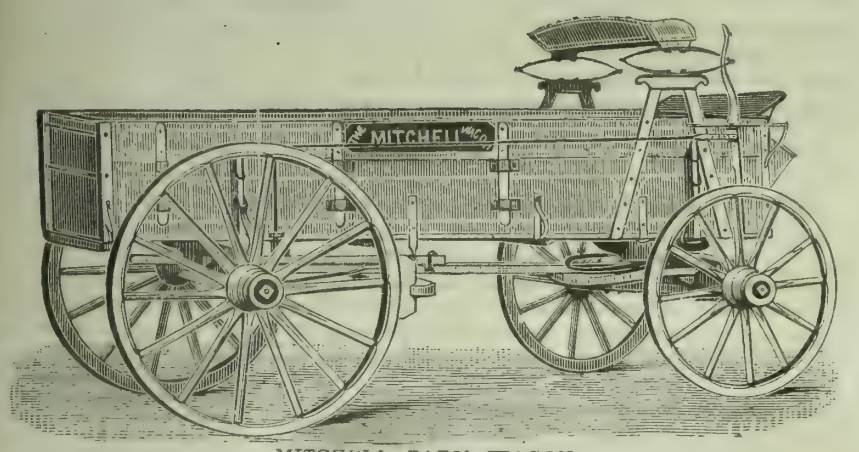
Manufacturers and Dealers in

CARRIAGES, EXPRESS, THOROBRACE & BUSINESS WAGONS,

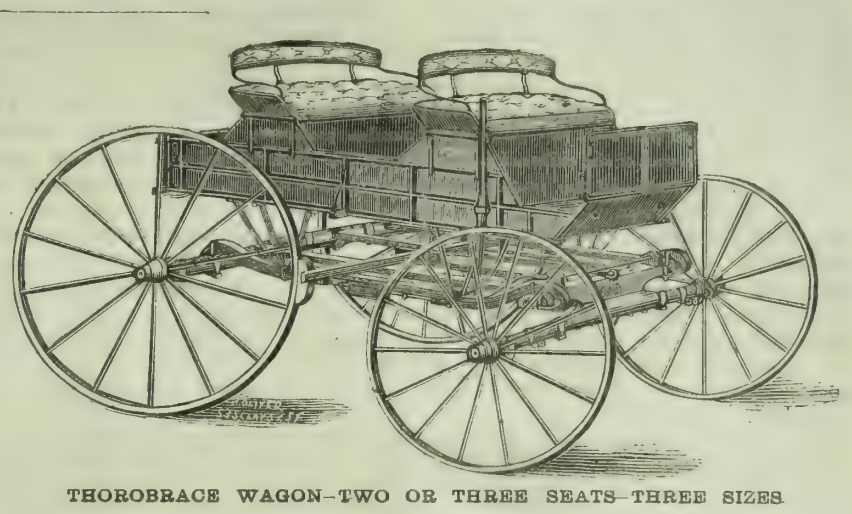
From their own Manufactory in Manchester, N. H. Also Agents for the

MITCHELL FARM AND SPRING WAGONS,

Nos. 24 and 26 Beale Street, San Francisco.

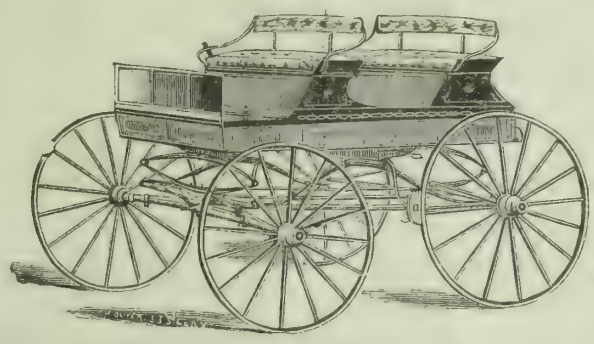


MITCHELL FARM WAGON.



THOROBRACE WAGON—TWO OR THREE SEATS—THREE SIZES.

SIDE SPRING BUSINESS WAGON—THREE SIZES.



FOUR SPRING WAGON FOR RANCH AND FAMILY USE—THREE SIZES.

REDLANDS.

The owners of the Redlands tract having disposed of a large portion of their lands, now offer for sale one hundred and fifty acres only, at $125 per acre, this being all that will be offered the present season.

Redlands is located on the south side of Mill Creek Ditch, between Old San Bernardino and Crafton.

The lands are a clayey loam, very similar to the lands at the head of Magnolia Avenue in Riverside.

There are no fences on the land and no brush to clear off.

The tract is being put on the market as rapidly as the water can be put upon the lands, and no faster.

One thousand acres of the tract have just been surveyed and platted, about nine hundred acres of which have already been sold. The price of the remaining tracts is $125 per acre.

The third five hundred acre tract will not be put upon the market before the winter of 1882-3. In the meantime the system of irrigation will be completed by finishing the large reservoir conducting the waters of the Company to the reservoir in pipes and flumes, and laying concrete pipes through the tract to carry water from the reservoir to the highest point on each tract.

The main avenues are one-quarter mile apart, 100 feet wide, and run from northeast to southwest for convenience of irrigation. The course of the sea breeze is parallel with these avenues.

The cross streets are sixty feet wide, and run at right angles with the avenues every half mile.

The tract is subdivided into ten-acre lots, with a town site composed of smaller blocks.

Its situation is the finest in the San Bernardino Valley, the view being unequalled, and the elevation near 2,000 feet above the level of the sea.

The climate is unsurpassed, the location being so far inland that fogs and northers are almost unknown.

The title to the land is United States patent, and is therefore beyond question.

The Water Right is ample and beyond dispute. It consists:—

First—Of fifty shares in the Sunny Side ditch, one of the oldest ditches in San Bernardino county. This water will be conducted from the Sunny Side ditch to the Redlands reservoir in a ditch flumed part or all of the way, so that no water will be lost by seepage. The ditch is already constructed and will be flumed before the next irrigating season. This is good for 500 acres of land.

Second—An eighty-inch stream developed in Santa Ana Canyon. This stream is being piped down to the head of the Redlands ditch, so that the entire water supply will be handled without loss. This stream is good for 500 acres more of land.

Third—Two reservoirs will be constructed. The work on these is now in progress. The largest reservoir will have a capacity sufficient to cover 500 acres of land 9 inches deep with water. There is an abundance of winter water to supply this reservoir. The second reservoir will be much smaller. The large reservoir will cover 17½ acres of land, and will be 60 feet deep in the deepest place

Fourth—The water will be conducted from the reservoirs to the highest point on each ten-acre tract by means of concrete pipes, thus saving expense and wastage in the distribution of the water. These reservoirs will irrigate another 500 acres.

These water rights, reservoirs, pipes, flumes, ditches, etc., are the property of the Redlands Water Company,—a company incorporated to furnish water to the Redlands tract of 1,500 acres, with 1,500 shares of stock. One share of stock goes with each acre of land, so that when the land is all sold the owners of the land own and control the water, and they only charge such price for the water as is absolutely necessary to pay running expenses for handling the water in the most economical manner possible, as there are no ditches to clean.

Lands shown and business attended to promptly six days in the week only, on the tract.

☞ Send for Circular containing Map and further information.

Postoffice address, SAN BERNARDINO, CAL.

JUDSON & BROWN.

REDLANDS, 1882.

THE BALDWIN HOTEL, SAN FRANCISCO.

The Baldwin.

BY J. C. H.

San Francisco, the emporium of the empire of the Pacific coast, is second to no city in the United States in magnificent and well-appointed hotels. Standing at the head, without an equal in design, elegance and comfort, the "Baldwin," of this city, is what the Palmer house is to Chicago, and the Fifth Avenue hotel is to New York. Mr. E. J. Baldwin, one of our enterprising and public-spirited, active business men, by securing the aid of the leading artists and builders of this country and Europe, has succeeded in erecting and furnishing, at a cost of $3,500,000, a hotel which is the pride of a great city and the resort of the cultured and refined people of this State and the resting-place for the tourist and traveler.

As our engraving shows, this palace of luxury is built in the French Rennaissance style of architecture, having six stories, including the Mansard, and so designed as to carry up each bay window projection a completeness in itself—the entire faces being banded and held in unity of design by belt courses, cornices and balustrades. These faces, or bays, form the entire facade of the building, and alternate in size according to the external and internal arrangements; the large bays having side windows opening into the parlors of the various suites of rooms, while the smaller bays serve to light the front chambers. One of the striking features of the design as carried out is, that the Mansard finish of the bays gives two or three different hights or elevations, according to the location, as affecting the symmetry of outline; and also varying in size and design in the same ratio as regards their hight.

The dome surmounting the angle of Market and Powell streets is hexagonal in plan at the base, and is carried up to the apex in the same general form; this contour being made to suit the angles formed by Market, Powell and Eddy streets, which form the three sides of a hexagon. The hight of this main dome above the pavement is 168 ft. It contains in itself five stories and a bull's-eye or lookout at the top.

The principal dome on Powell street has an altitude of 120 ft., and is of the same general design as the one just described. It is, however, square in plan.

The four extreme angles of the fronts are carried up into towers, having two stories and forming outposts, showing to great advantage this truly immense architectural display contained within them. No pen can do justice to the subject. A careful and prolonged view must be had to obtain any idea of the extreme beauty and finish of the entire structure. The lot occupies the irregular-shaped lot bounded by Market, Powell and Ellis streets, and has a frontage of 184 ft. on Market, 25 ft. on Eddy, 275 ft. on Powell and 138 ft. on Ellis street. The basement of the building is entirely brick and iron. The outside walls have a thickness of 3 ft. 2 inches, with footings 9 ft. wide. The interior walls and walls of the theater have a thickness of 3 ft. 2 inches, with footings 7 ft. wide. All the piers are capped with granite slabs 10 inches thick, sub-basing the iron work of the first story. All cross and partition walls and interior supports are of brick laid in cement, and 10-inch cast-iron heavy columns, no woodwork whatever being used in basement. The sidewalk, vaults, boiler and engine-rooms, coal-bunks, etc., all constructed of iron beams and brick arches. The first story of building is entirely iron, both the exterior and interior columns, the exterior front being doubled, having 12-inch heavy cast-iron columns, with 12 inch cast-iron square pilasters. This frontage is capped and surmounted with a row of heavy cast-iron lintels of the "Hodgkinson pattern," 26 inches high, 22 inches wide, and with an average thickness, of two-inch metal with double heads, bolted together with wrought-iron bolts; thus making the entire circuit of the building 622 ft. at the first story, one solid, heavy mass of bolted metal, and of the best quality standard American Eastern iron, a quality which is not used in San Francisco only under direct and special specifications. This is the first outside main brace or tie against the effect of earthquakes. The wooden partitions in the first story between stores, are dividing and not sustaining works, and are made of this material to contract or extend the size of stores, as occasion and the march of improvements may hereafter demand in this new quarter. The rear walls, cross walls, and walls of all permanent divisions, are of brick laid in cement, and are 2 ft. 2 inches, 21 inches and 13 inches thick, from the first story iron lintel course upward.

The entire outer walls and superstructure to the roof are of brick and iron; brick piers 2 ft. 2 inches thick and 10 ft. in width, with cast-iron columns and lintels. These lintels have double heads, all bolted together, and connected in the running length with two-inch wrought-iron bolts, or rods, making on each story a circuit of 622 ft. of continuous iron tie.

The fire precautions and measures adopted to preclude the possibility of any damage from fire, either from adjoining buildings or from within, are upon the same grand scale as that used in the Palace hotel. In the fire-proof vaults and engine-rooms are located the fire pumps, four in number, independent of the house supply of pumps. Seven fire plugs on each story of the hotel, with 150 ft. of hose, are located in positions to command all parts of each story and stairway. On the outside of the building, five lines of galvanized wrought-iron pipe, corporation size, extend from the level of the sidewalk up to and over the roof of the building, and this is supplied with fire plugs at the bottom; and on the level of each story and on the roof, with 200 ft. of hose attached, coiled and ready for instant use. These lines are calculated to be supplied by the city fire engines, in case of great emergency. From the pumps below, two 3-inch mains extend up to and along the roof to the base of all the domes, thence upward to the top, where they are connected with a copper 2-inch and 2½-inch pipe, encircling the crown of each dome. These pipes are perforated and furnished with brass tips, and regulated from the pumps below, so that when fire occurs in the neighborhood, the roof and domes can be drenched with a stream of water, requiring the attention of no fireman or attendant from the stories below. Two artesian wells, capable of supplying 71,000 gallons daily, exist in the basement; this, with a reservoir, with a capacity of 60,000 gallons, in the basement, and tanks on the roof holding 82,000 gallons, give an immediate supply in case of necessity of 205,000 gallons.

Uniting utility and art in every department, with a cuisine presided over by a master, this palace of luxury has as patrons the noted personages of the world and the elite of our city. The large number of sunny suits, with surrounding appointments, has made this the popular place for families who desire the comforts of home and the luxuries attending a first-class hotel.

Connected with and a part of this grand edifice is

Baldwin's Academy of Music,

Which is the leading place of amusement of San Francisco. In its contour, arrangement and interior finish, decorative art, architectural design and elegant embellishments, have produced a gem of art combining comfort with luxury that reminds one of the oriental magnificence of the palmy days of the Roman and Eastern empires. The Baldwin is situated in the heart of the city. The stores and hotel accessories are among the best, and, in many respects, the most attractive in San Francisco. The billiard saloon, containing eight tables of the finest pattern, is the chief resort of disciples of the cue and of leading business men for recreation.

Barber Shop and Baths.

Messrs. Lampe Bros. are the proprietors of the Baldwin barber shop and baths. This tonsorial department and baths are, in their appointments and management, equal to any in the United States or Europe.

Baldwin Cigar Store,

Of which Schlesinger & Green are the proprietors, import the best brands of Havana cigars, which are carefully selected to suit their patrons. They make a specialty of supplying choice brands by the box, and are the sole agents for the celebrated "Baldwin" 10-cent cigar.

Baldwin Clothing House,

Of which Pauson & Roman are proprietors, has a line of gents', youths' and boys' clothing and furnishing goods of a varied assortment, and of the finest quality. Tourists can find in this leading clothing house all the latest styles and patterns to make up any kind of an outfit.

Millinery.

In this line, Mrs. A. Bassler & Mrs. E. L. Hevener have established a millinery palace suited to the place they occupy and their genteel patrons. They are direct importers of French millinery, and are second to none in San Francisco as artistic and fashionable milliners. Having a large stock, they make a specialty in furnishing choice goods for interior cities and the country.

THE BALDWIN HOTEL, SAN FRANCISCO, CAL.

The Tallac House.

The attention of excursionists and tourists is called to the Tallac house, which has lately been thoroughly renovated, improved and furnished. This fine summer resort is beautifully located on the southern and sheltered side of Lake Tahoe, near Emerald Bay Soda Springs, Fallen Leaf and Cascade lakes, and amid magnificent scenery, shady groves, grassy meadows. Broad verandas encircle the house; Chinese lanterns adorn the groves; swings, croquet, lawn tennis and archery grounds; with fine drives through the valleys; good trout fishing; horses, carriages, boats and fishing implements at the command of guests. The table will be first-class in every respect. Billiard tables, piano, dance hall, and, in fact, everything possible for the pleasure and comfort of patrons will be found at the Tallac house. This well-known resort is now open. Fare from San Francisco, via Truckee, is $16.50.

Lake Tahoe.

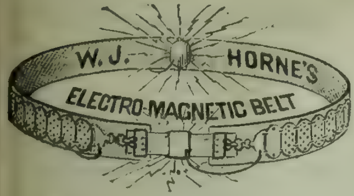
This lake is 1,700 ft. deep, is on a line between California and Nevada, is ice-cold and of crystalline clearness. Although hundreds of millions of gallons flow off through the Truckee river every day, the supply is ever kept up by melting snow and great subterranean springs. Its fine beaches and shore groves of pine make it the most picturesque and attractive lake in the world. While calm, it is one of the loveliest sights conceivable—serenely beautiful—but during mountain storms its glassy bosom is lashed into white-crested billows, which dash in fury on its pebbly shore. To understand its beauties, one must go there and spend some time. The route from San Francisco is via C. P. to Truckee, 259 miles, stage 14 miles. Passengers coming from the East and desiring to visit the lake, should leave the C. P. R. R. at Reno, then via V. & T. R. R. to Carson City, and thence by Benton's stages, 18 miles, to Glenbrook, on the eastern shore of the lake, from which a steamer runs to the Tallac house, at the southern end of the lake, a fine hotel with magnificent surroundings. This house is owned by Mr. E. J. Baldwin, of the famed Baldwin hotel.

Tahoe trout, fresh from the cold waters of the lake, are served at every meal, and the visitor will find ample facilities in the way of boats and tackle to try his hand at the enticing sport of capturing the fish himself. It is in the form of a parallelogram, lying northeast and southwest, partly in Nevada and partly in California. At a distance of three miles from shore its depth is from 1,000 ft. to 1,200 ft. The greatest depth yet found is 1,800 ft. The water is so transparent that trout and other objects can be seen at the bottom, where the depth is from 80 ft. to 100 ft. Owing to the rarity of the atmosphere the water has little buoyancy. In order to swim in the lake one must be very industrious. Nothing is ever seen floating on the lake but boats or rafts of logs in transit. Stray logs, driftwood, and even shingles soon sink. The bodies of persons drowned in the lake never rise—are never seen again.

This celebrated lake is about 25 miles long by from 10 to 14 miles wide, and it forms a miniature inland sea. Its elevation above the sea is 6,700 ft., and the mountains which surround it are covered with snow for eight months out of the twelve; its water never freezes, but remains about the same temperature throughout the year.

Grand old mountains stand about the lake like sentinels. Here is a feast of mountains for such as hail from level lands. On all sides they tower—mountains that are pine-clad and mountains that are but stupendous piles of rugged granite. It is a region of granite. To the west rise mountains cold and stern, covered with snow, while on the north and east are mountains clothed in groves of pine, fir and spruce. The entire distance around the lake is 144 miles.

Lake Tahoe is the great sanitarium of the Pacific coast. It possesses climate, scenery and means of health-giving pleasure to the careworn and debilitated, far ahead of any other place of resort. The business man is bound to forget his business while here. The scenery is too grand, the air too quieting and dreamy to allow business cares to absorb the attention.



Pat'd Nov. 11, 1879, and Nov. 9, 1880.

MEDICAL ELECTRICITY.

HORNE'S

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Received First Premium State Fair, 1880. 1881.

702 Market St., San Francisco.

Proprietor and Manufacturer of the

BEST IMPROVED SCIENTIFIC BELTS.

Liver and Kidney Disease and Indigestion Cured.

Elmira, Solano County, Cal., December 8, 1880.

W. J. HORNE.—Dear Sir: I have suffered for a long time with liver and kidney disease and indigestion I tried several physicians without relief. Having heard a great deal about galvanic belts, I thought I would go to your city and examine the many different belts and made, all of which I found to be a humbug, as they have all been worn by different friends of mine. After a careful examination I purchased one of your belts, and have worn it three months. It has restored my health entirely. I therefore recommend your belt, not only as a privilege but as a duty I owe to all my fellow sufferers. Many thanks to you. Yours respectfully,

L. WARNER.

From the Leading Patent Agent in San Francisco, Cal.

MR. W. J. HORNE, Prop., 702 Market St., S. F.—Dear Sir: I have used your Electro-Magnetic Belt, and I deem it of incalculable value to those afflicted with nervous prostration and other kindred diseases. Yours, etc.,

December 8, 1880. C. W. M. SMITH, Patent Agent and Lawyer, 224 Sansome St., S. F.

Strong Indorsement.

MR. W. J. HORNE, Prop., Horne's Electro-Magnetic Belts. SAN FRANCISCO, July 23, 1880.

Dear Sir: I have used your Electric Belt for some time and am much pleased with it. It has great power, does not require the frequent use of acids, and is very durable. I can recommend it to all persons out of health and requiring treatment. Yours Very truly,

REV. H. LOOMIS, 320 Sansome Street, S. F.

An Arizona Endorsement.

CAMP VERDE, Yavapai Co., Arizona, March 18, 1882.

W. J. HORNE, ESQ.—Dear Sir: Enclosed please find $20, for which send me one of your best Electro-Magnetic Belts, and oblige. The Belts I ordered some time since have proved a great benefit. I speak from experience. There are several of my neighbors going to order the Belt on my recommending it to them, and I shall continue to do so, for I have found great relief in the use of them Respectfully yours,

D W STRAHAN.

This Belt Will Cure the Following Diseases Without Medicine:

FEMALE DISEASES.—Pains in the Back, Hips, Head or Limbs, Nervous Debility, Lumbago, General Debility, Rheumatism, Paralysis, Neuralgia, Sciatica, Disease of Kidneys, Spinal Diseases, Torpid Liver, Gout, Sexual Exhaustion Seminal Emissions, Asthma, Heart Disease, Dyspepsia, Constipation, Erysipelas, Indigestion, Sexual Weakness, Impotency, Catarrh, Piles, Epilepsy, Dumb Ague.

Belts forwarded to all parts of the United States at my expense on receipt of price

Electro Magnetic Belts, new style	$10
Electro-Magnetic Belt, extra appliances	15
Electro-Magnetic Belts, nine improvements	20

Guaranteed One Year.

Best in the World.

☞ In ordering Belts send the amount by Registered Letter, Postoffice Money Order or Draft. When required, will be sent by Express, C. O. D. Address all communications, giving size in inches around the waist, to

W. J. HORNE, Proprietor and Manufacturer,

702 Market Street, San Francisco.

W. J. HORNE RECEIVED THE HIGHEST AWARD AT THE CALIFORNIA STATE FAIR IN 1880 AND 1881.

Also, at the Mechanics' Fair at San Francisco, over all competitors The only premiums ever awarded by the State to Trusses All Trusses of acknowledged merit were represented. Quack doctors and charlatan proprietors of other Trusses, who preface their name with the honorable title of "Dr.," to the ridicule of the medical profession, were there in full force, and whose loud, false claims were only excelled by the disgust of the Committee. Beware of such worthless frauds. This truss is endorsed and purchased by the leading physicians in America.

RUPTURE! GUARANTEED RELIEVED OR CURED.

☞ Send for illustrated catalogues Hundreds of cures

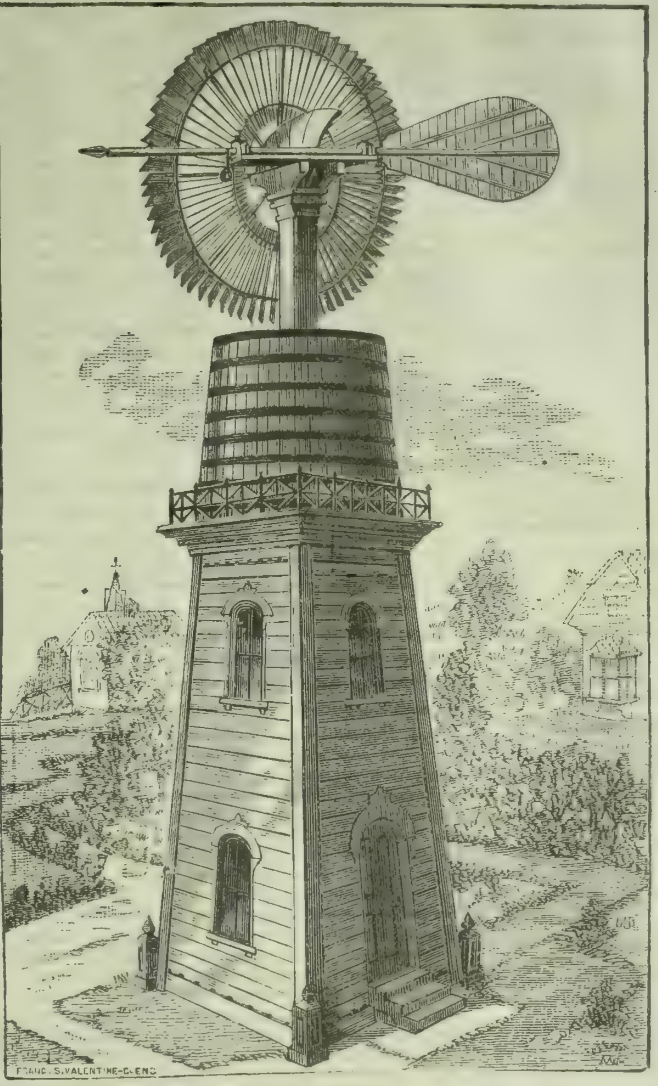
A Lady Cured—Ruptured from Childhood.

TOMALES, MARIN CO., CAL.

W. J. HORNE, Proprietor California Elastic Truss Co.—Dear Sir: I can cheerfully testify to the merits of your valuable Truss, as it has effected a permanent cure of my painful rupture. I purchased the Truss of you June 18, 1877, price, $10. It has done wonders for me in performing this cure, as I had been ruptured from childhood, and never expected to get cured. I have not worn my Truss for over one year. I can honestly advise any one to purchase your Truss, for I know its value, after many years' experience with all kinds. Yours respectfully, MRS. M. STUMP.

W. J HORNE, Inventor and Manufacturer of the Best Improved Truss in America.

702 Market St., San Francisco, Cal.



"EUREKA" LATEST IMPROVED SELF-REGULATING WINDMILL.

The STRONGEST, MOST DURABLE, LESS COMPLICATED and LIGHTEST RUNNING WINDMILL known. Can be set on a Tank House single post, or skeleton frame, as required. ☞ Before giving your orders, send for Circular and Lowest Price.

WINDMILLS, HORSE-POWERS, TANKS, PUMPS

and all Kinds of Pumping Machinery built to Order.

F. W. KROCH & CO., 51 Beale Street, S. F.

INCORPORATED A. D. 1819.

ÆTNA INSURANCE COMPANY,

OF HARTFORD.

Cash Assets - - $8,9022,72.64.

BE CAREFUL HOW YOU INSURE!!

Insure Your Grain and Growing Crops.

Insure Your Grain in the Warehouse.

Insure Your Farm Property.

Insure Your Merchandise in the ÆTNA and be sure of Indemnity.

Pacific Branch, 311 California Street, San Francisco, Cal.

GEO. C. BOARDMAN, General Agent.

THE OSBORNE MACHINES,

Comprising

Self-Binding Harvesters,

Front Cut and Rear Cut Single Mowers,

SINGLE REAPERS,

COMBINED MOWERS AND DROPPERS.

Agent for STUDEBAKER Farm and Spring Wagons.

HEADER TRUCKS with wide and narrow tires, RAKES, DERRICKS, BELTING, CORDAGE, OILS, FORKS HARDWARE, Etc. Steam Engines, and general repairing, with large assortment of extras for Agricultural Implements, and the STOCKTON GANG PLOWS, REVERSIBLE MOLDS and LAND SIDES. Address,

P. O. Box, 95 JOHN CAINE, Globe Iron Works, Stockton, Cal.

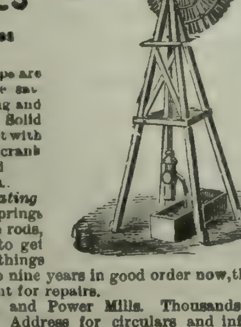
The Famous "Enterprise,"

PERKINS' PATENT

Self Regulating

WINDMILLS

Pumps & Fixtures



These Mills and Pumps are reliable and always give satisfaction. Simple, strong and durable in all parts. Solid wrought iron crank shaft with *double bearings* for the crank to work in, all turned run in babbitted boxes.

Positively self regulating with no coil spring or springs of any kind. No little rods, joints, levers or balls to get out of order, as such things do. Mills in use six to nine years in good order now, that have never cost one cent for repairs.

All sizes of Pumping and Power Mills. Thousands in use. *All warranted.* Address for circulars and information

HORTON & KENNEDY,

GENERAL OFFICE AND SUPPLIES, LIVERMORE ALAMEDA CO., CAL. Also, Best Feed Mills for sale.

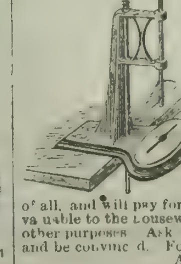
San Francisco Agency, LINFORTH, RICE & CO., 323 & 325 Market Street

E. MAIN, 315 Folsom Street,

Makes to order Gents' Fine French Calf Boots from $6 to $10; Gaiters from $3 to $6; Alexis from $3.50 to $5; Mens' Heavy Kip Boots, $6; Oxford Ties, French Calf, $4; California Leather, $3.50; Men's Working Shoes from $2.50 to $3; Children's Shoes made to order. Persons in the country ordering to the amount of $12, I pay the express charges. I sell nothing but my own manufacture.

Excelsior Fruit Pitter.

Invented by A. Donatella.



This machine recommends itself by the following good qualities.

Rapidity of work, one operator doing the work of four with knives. It cleans the pit perfectly, wastes no fruit, and leaves the plum in two equal parts. It is easily operated Makes no litter, the pits dropping in a vessel under the table. The plum remaining between thumb and finger can be placed directly on the riddle for the Dryer Simplicity of construction. Cannot get out of order Will work equally well on green or very ripe Plums Prunes, Apricots or Nectarines pitted with this machine dry more evenly and look nicer than when chipped off with a knife.

The low price comes within reach of all, and will pay for itself with two day's work It is invaluable to the housewife for preparing fruit for canning and other purposes Ask your hardware dealer for it. Try it and be convinced. For particulars address,

A. DONATELLA, Healdsburg, Cal.

IMPORTANT TO MEN OUT OF EMPLOYMENT.

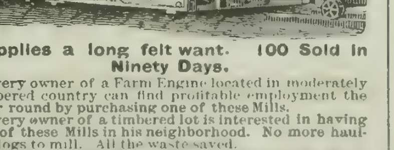
At this time, when so many young men are seeking an opportunity to make money, we would call attention to the large profits to be made in hay baling. There is no investment equal to our PRICE HAY PRESS. Three men baled 28½ tons in 12 hours. Averaged day's work, 18 tons per day. Three men and one span of horses cleared [illegible] one season by an outlay of $400 in a PRICE PRESS. $400 invested in a Price Hay Press pays better than $[illegible] in any other machine. They are the cheapest, because the fastest and most durable Hay Presses made. They are greatly improved for 1882, and give PERFECT satisfaction. THERE IS NO BETTER CHANCE TO MAKE MONEY. We should be pleased to give any information desired on this subject. We manufacture a full line of AGRICULTURAL IMPLEMENTS, HAY, HIDE and WOOL PRESSES, ENGINES, THRESHERS, WIND MILLS, HARROWS, etc., etc. Send us your address, and we will mail you FREE, our large new illustrated catalogue, containing a great deal of useful information. Address,

JACKSON & TRUMAN. San Francisco, Cal.

50 LARGE SIZE New Chromos, with name, 10c. TODD & CO., late Wise & Co., Clintonville, Conn.

THE MASSILLON PONY MILL

STRICTLY PORTABLE.



Supplies a long felt want. 100 Sold in Ninety Days.

Every owner of a Farm Engine located in moderately timbered country can find profitable employment the year round by purchasing one of these Mills.

Every owner of a timbered lot is interested in having one of these Mills in his neighborhood. No more hauling logs to mill. All the waste saved.

Write for Circulars and Price Lists, and address of nearest Agent. [Name this Paper.]

RUSSELL & CO., Massillon, O.

BERRY & PLACE MACHINE CO.,
Agents for the Pacific Coast.

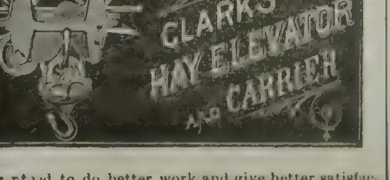
LITTLE'S SHEEP DIP.

Price Reduced

TO $1.25 PER GALLON

Twenty gallons of fluid mixed with cold water will make 1,200 gallons Dip.

Apply to FALKNER BELL & CO., San Francisco



Guaranteed to do better work and give better satisfaction than any in use. Sent ON TRIAL to responsible farmers. For circulars and terms to agents address

G. T. BROWN,
Stockton, Cal.

ESTABLISHED IN 1852.

ARMES & DALLAM,

Manufacturers and Importers of

Wood and Willow Ware,

BROOMS, BRUSHES, BASKETS.

Pails, Tubs, Churns, Washboards, Twines, Cordage, Wrapping Paper, Paper Bags, Clothes Wringers, Fishing Tackle, Stationery, Feather Dusters, Demijohns, Coffee Mills, Matches, Etc., Etc.

SOLE AGENTS FOR

Davis' Patent Building Papers,
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"No Brand" Parlor Matches.

230 & 232 Front St., Cor. Sacramento,

SAN FRANCISCO, CAL.

Thorough in its Work

JACKSON Vineyard HARROW

Price $25.

DAVISVILLE, May 20 1882

Enclosed find $50 to pay for two harrows. We tried the one you sent to Fresno and it was charming to see it work. It is ahead of all the harrows I ever saw work.

G. G. BRIGGS.

Made by

JACKSON & TRUMAN,
San Francisco.

☞ Write for new catalogue.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co.'s SCIENTIFIC PRESS PATENT AGENCY, 252 Market St., S. F.

FOR THE WEEK ENDING MAY 16, 1882.

257,992—THRASHING MACHINE—Henry N. Dalton, Oakland, Cal.

257,927—CARPET SWEEPER—B. Figer, S. F.

258,049—OIL CUP—John E. Gilligan, Elko, Nevada.

257,940—SEWING MACHINE—George Grisel, S. F.

258,063—BUCKBOARD WAGON—F. A Hill, Benicia, Cal.

258,064—PLOW—F. A. Hill, Benicia, and M. J. Church, Fresno Cal.

257,943—ELEVATOR—Philip Hinkle, S. F.

258,100—MACHINE HAND ROCK DRILL—Eugene Moreau, S. F.

258 120—METAL PLANING MACHINE—John Richards, S. F.

258 121—ENGINE LATHE—John Richards, S. F.

258 122—PIPE MOLD—L. Richardson and F. J. Nettleton, San Gabriel, Cal.

258 131—CONCENTRATOR—John F. Sanders, Ogden, U. T.

257 985—ARTIFICIAL FUEL—Wm. C. Siffken, Victoria, B. C.

257,960—FISH WHEEL—Wm. R. McCord, East Portland, Oregon.

257 975—GOVERNOR FOR PUMPING ENGINES—Geo. C. Phillips, Silver City, Nevada.

257,976—DIRECT ACTING ENGINE—George C. Phillips, Silver City, Nevada.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co. in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast Inventors transacted with perfect security and in the shortest possible time.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s SCIENTIFIC PRESS American and Foreign Patent Agency, the following are worthy of special mention:

CAMERA ATTACHMENT.—Wilfred L. Brown, Mare Island, Cal. No. 256,966. Dated April 25, 1882. The attachment in this invention consists in a novel removable holder for any number of prepared sensitized plates. This is placed in suitable guides upon top of the camera, and is provided with a sliding false bottom, adapted by its movement to expose a slot in the top of the camera, through which any of the plates may be lowered for exposure by means of a vertically moving "plate elevator," and may be returned to the holder by the same means. The arrangement of shutters in the eye-piece, and the means for adjusting the removable plate-holder, closing the entrance aperture, and for raising and lowering the plate elevator are details of construction included in the invention, and necessary to its perfect operation. The object of the invention is to provide a convenient and effective plate-holder, to be used in connection with a camera when carried from place to place, or in field work, where the facilities for developing are wanting.

CABLE RAILWAY.—Terrence Duffy, S. F. No. 257,674. Dated May 9, 1882. This consists in a device for keeping the slot in the street closed, which will protect the tube from foreign substances, yet not interfere with the passage of the grip; and it consists, also, in cleaning attachments upon the dummy adapted to run within the slot and upon the road to keep them clear, so that the accumulations will not fall within the underlying tube while the dummy is passing and the slot temporarily opened. The object of the invention is to provide a means for keeping closed the grip-slot, so that dirt and especially snow, ice, etc., which in cold countries are liable to render impracticable the operation of a cable railway, may not fall down into the tube. An accumulation of material is liable to clog the mechanism, and for this reason a cable tunnel with an open grip-slot has been considered impracticable in places where there is snow and ice.

IMITATION OF MARQUETRY BY WOOD.—Wm. Schroeder. No. 257,081. Dated April 25, 1882. This invention relates to a new and useful process for the ornamentation of wood, and it consists in a series of steps—namely, in preparing the wood with sizing or shellac; in coating or graining it with water colors; in subsequently removing part of the latter through the openings or stencils to make the proper ornaments or figures; in applying colors through secondary stencils for finishing the designs with darker parts or lines; and, finally, in coating the whole with shellac or varnish. This process of ornamentation is intended to be applied to the cheaper kinds of furniture, and where it is desired to produce a fine effect of inlaid work at moderate expense.

APPARATUS FOR UTILIZING SOLAR HEAT.—Geo. W. Deitzler, S. F. No. 257,760. Dated May 9, 1882. This invention relates to an improvement in apparatus for the collection, concentration and utilization of the sun's heat for industrial purposes; and it consists essentially in the use of a cylindrical reflector, in combination with a cylindrical heat receiver of novel construction, and an arrangement whereby the reflector and receiver can be set in the proper position and made to follow the direction of the sun's apparent movement automatically or otherwise. We described the apparatus in detail a few weeks since.

WATCHMAKERS' COMBINATION TOOL.—Wm. H. Lamb, S. F. No. 257,726. Dated May 4, 1882. This watchmakers' tool consists of a frame having two spring arms passing through it longitudinally, and so formed that their sides may be made to approach or separate. These arms serve as a poising tool for the balance, and also as truing callipers. Upon one side of the frame is a plate pivoted at one end to the frame and having the opposite end movable and capable of being fixed so that one side will make an angle with the side of the frame. Between these sides the roller of the staff may be clamped to be removed. The free end of this pivoted plate is provided with a holding device for the second hands while they are being broached out or fitted, the whole being intended as a handy tool for different classes of work.

The Lane Mineral Springs.

The Lane Mineral Springs, owned and managed by Mr. James Hutchins, are located in the northeast corner of Calaveras county, six miles northwesterly from Knight's Ferry, Stanislaus county, the present post office address. The springs can be reached by Lane's Springs stage, starting from Commercial hotel, Stockton, on Tuesday and Saturday mornings. Mr. Hutchins meets passengers with his own conveyance at Knight's Ferry, during the season, on Tuesdays, Thursdays and Saturdays. Guests can arrive any day (except Sundays) from Milton, the terminus of the Stockton and Copperopolis railroad, by hiring a private conveyance, some 13 miles to the springs. Copperopolis, famous in early copper mining days, is situated within seven miles north of the springs. Telegraph City is four miles; the once famous Napoleon copper mine, 2½ miles distant. The springs were discovered by Maj. Thos. Lane over 20 years ago, and have been visited as a place of resort ever since. Their altitude is 1,000 ft. The climate being favorable, guests are accommodated during all seasons of the year. They are best known by the people of Calaveras and adjoining counties, with whom they are in high favor by those who have tested their qualities and observed their remarkable and salutary effects. The water is cool and refreshing, and to most tastes quite palatable. From the reputation it bears, the water may be rated as second to none in its beneficial and curative qualities for pulmonary complaints. It is also considered superior in cases of catarrh, rheumatism, asthma, paralysis, and dyspepsia, liver, kidney and nervous diseases.

The climate is markedly dry during comparatively a large portion of the season, without being excessively warm. This arises, perhaps, from the fact that it is situated, as it were, on a point of rolling foothills, bounded on different sides by the vast plains of the San Joaquin valley. Fogs are infrequent visitors, and only in the wet season. The sea air, sweeping across the broad valley, seems to be favorably acted upon by the golden rays of a California sun, until it possesses rare desiccating and health-restoring qualities. Upon reaching the base of the Sierras, it evidently becomes tempered with mountain atmosphere sufficient to make it more agreeable and consequently kindly in effect upon the human system.

Guests can comfortably visit these springs considerably earlier and later in the season than most other resorts in the central and northern portions of the State.

Boarders are accommodated in the home cottage of the proprietors upon very reasonable terms. There are half a dozen or more rustic cottages for occupation by housekeepers and campers.

CONVENTION OF NURSERYMEN, FLORISTS AND SEEDSMEN—We receive from W. C. Barry, President of the American Association of Nurserymen, Florists and Seedsmen, announcement that the seventh annual meeting will be held in the Common Council chamber, in the city of Rochester, commencing Wednesday, June 21st, and continuing three days. It is hoped and expected that there will be a large attendance from all parts of the United States and Canada. The objects of the association are: 1. To afford the members an opportunity to cultivate personal acquaintance; and 2. The discussion of subjects of practical interest to the trade. Specimens of fruits, flowers, seeds, plants, implements, etc., are solicited for exhibition. It is expected that there will be an exhibition of strawberries, cherries and roses, with other flowers of the season, during the meeting. The following, among other subjects, will be discussed: "New Varieties of Fruits, Trees, Plants, etc." "Implements and Labor saving Devices." "Methods of Culture, Grading, Packing, etc." "Transportation, Taxation, etc." The following papers will be read: Mr. Thomas Meehan—"On the Bark of Trees and its Functions." Mr. John J. Thomas—"The Mission of Nurserymen, or what Their Influence Should Be in Exalting Rural Art." Mr. C. L. Waltrous—"Some Problems before the Nurserymen in the Northwest." Mr. Patrick Barry, Mr. C. L. Allen and Mr. S. D. Willard will also address the meeting.

SOME housekeepers are so constitutionally wasteful that the more flour they have the more they knead.

The Manufacture of Organs.

Until a recent visit to the factory of Bergstrom & Co., on Mission and 29th streets, we had no idea how much of an industry the building of parlor, church and concert organs had come to be in this city. There we found quite an establishment, fully equipped for work of any kind or size, with skilled workmen engaged in the various branches of the art, and all busy, with plenty of work ahead of them. Mr. John Bergstrom began this business in 1864 on a very small scale, and it has gradually grown to its present respectable dimensions. The place is now fitted to make church organs of the very largest size.

Mr. Bergstrom is now making half a dozen organs of a size to take the place of reed organs, as he can sell them at about the same price—say $600—and they have much more volume and make a much more imposing instrument. They will answer admirably for small churches that have no great space, or can afford no very large instrument. One of this type we saw in course of construction.

It is some 13 ft. high by 7 ft. wide, and 4 ft. 6 inches deep. It has pedal base, with four stops on the manual and 244 pipes. It is quite handsome. There are 25 foot pedal notes. This type of instrument is a very fine one for large halls, Lodge-rooms, etc.

Mr. Bergstrom is now engaged on a two-manual organ for the Episcopal church, at Seattle, which will cost some $2,000 He is also at work on one for exhibition at the Mechanics' Institute in this city, (which opens in August). This is a three-manual organ, which will cost $2 500. The largest one, on which he is now at work, is a three-manual instrument for St. Francis' Catholic church, on Montgomery Avenue, in this city. This organ will cost $5,000, and it will take to next Christmas to complete it.

Many of the larger organs on this coast have been built by Mr. Bergstrom. That in the Metropolitan Temple in this city, the largest on the coast, was built by him. It cost $12,000, and took 18 months to complete it.

Among others made here was that for the Christian Union at San Lorenzo. One for Guatemala, Central America. The one built for Miss Dillaye, teacher of music and organist of Rev. Mr. Smith's tabernacle, on Tyler street, is a first-class instrument of the type before referred to as designed to displace reed organs.

In addition, organs have been made for the Spanish church in this city; for the Methodist church, Portland, Oregon; for the Methodist church, Santa Clara; for a church in Napa City; for the Independent church (the late Dr. Hamilton's), Oakland; the Presentation convent in this city; for a church in Tucson, Arizona, etc.

They make everything here except the reeds, and no better workmanship will be found in any instrument anywhere. The mechanism is all of first class order, and every little detail is carefully attended to. They have as good facilities for manufacture as they need, and Mr. Bergstrom is fortunate in having a number of first-class workmen. They use all California woods except in those parts where black walnut is needed.

Mr. Bergstrom has the highest recommendations from all those for whom he has worked, and organists on this coast are indebted to his skill for keeping the instruments in repair. His work is preferred to that from the East, and he has established for himself an envable reputation for skill, reliability and good work.

A NEW TELEPHONE.—It is reported that a French gentlemen, M. Bottelier, has made a new telephone, which consists of a cylindrical copper box, about five inches in diameter and two inches high, in which the different parts are placed, and covered with a lid having a hole in the center. A mouth-piece is fixed near this opening, and the emitted sounds strike a vibrating plate screwed to the lid. The vibrations act on a magnet suspended to the sides of a box by three steel wires, the tension of which can be regulated at will. Owing to the elasticity of the wires the magnet may oscillate slightly in the same directon as the vibrations of the plate by which it is attracted, and as the magnetic action increases proportionally to the square of the distance, the amplitude of the oscillation increases until the tension of the wires, on the one hand, and the elasticity of the plate, on the other, equilibrate the attraction.

CALIFORNIA FLOUR EXPORTS.—From the returns furnished by the Bureau of Statistics it is shown that in the exports of breadstuffs for April, San Francisco leads with 2,340,466 bushels of wheat, New York being a very poor second with but 1,397.893 bushels. Baltimore takes third rank, with 565,287 bushels, and Oregon comes fourth, with 212,301 bushels. The exports from this coast form more than one-half of the total foreign shipments of wheat made during the month. While the flour shipments do not take quite such a leading position, the exhibit is a creditable one. New York shipped 232 464 barrels, Boston 75 692, San Francisco 74 941, and Baltimore 42,436 barrels. The shipments from this coast formed one-quarter of the total flour exports for the month under mention.

THE spruce gum industry of Maine is represented to be in a highly flourishing condition. Men who range the woods collecting the gum make good wages, selling the article for 40 cents a pound. Altogether, residents of the State obtain $40,000 yearly by the sale of the article.

A Home Industry.

The New Buildings of the Mission Soap and Candle Works.

There are but few persons in this city who have anything like a thorough knowledge of the large number of factories which exist and are in constant running order. Some have a faint idea that there is a rolling mill somewhere on the peninsula; that there is a woolen mill at Black Point, and a few other establishments scattered around somewhere, but of the large number of these business enterprises, of the vast capital invested in them, and the thousands of men, women and children to whom they give employment, the large majority know nothing. As a rule, these establishments are as sealed books to the outside world, the proprietors either desiring to keep their business matters to themselves, or, as is generally the case, do not wish the workmen to be annoyed by the incursions of curious people.

Among the leading manufacturing interests of the city the Mission Soap and Candle Works stands at the head. These works are located on Sixteenth street, near Folsom, and occupy a plat of land 200 ft. square. The buildings thereon have just been completed, and were constructed under the superintendence of a gentleman who thoroughly understands the business for which they will be hereafter used. The main building is three stories high, built in the most substantial manner and provided with the necessary elevators and tramways. The property, as well as the business, belongs to Mr. M. Morganthau, a gentleman who has been identified with various manufacturing industries in this State for many years.

In December last the buildings and a great portion of the machinery were destroyed by fire. Mr. Morganthau at once set to work to rebuild and replace the ruined machinery, and, while this was being done, he at once secured an unoccupied factory that was standing idle, and kept on manufacturing his goods to supply the increasing demand, and has never been out of any stock since the fire took place, and now the new works start up more lively than ever, and the fires in the furnaces are kept burning night and day to make up for lost time.

The cost of the new buildings and machinery aggregates $100,000, and nearly $20,000 worth of additional machinery will be placed in position during the next 30 days. The contract for this machinery was given to the firm of William T. Garratt & Co., and, when in running order, the Mission Soap and Candle Works will be the best appointed establishment of the kind on the Pacific coast. The amount paid out monthly for material and labor does not fall short of $25,000 The employees are all white people, among the number being some 20 boys and girls. The work for the latter is light and easy, and many of the girls are very expert in handling, stamping and packing the product of the establishment. The boxes alone in which candles are packed cost from $7,000 to $8,000 annually, and, as the business is rapidly increasing, the expense account will increase in like ratio. The works manufacture the following brands of Candles, viz: Chemical Wax, Solar Sperm, Adamantine, Light Weight, Coach and Hotel Candles, and the following brands of soap viz: Chemical Olive, Extra Family Nonpareil and White Castile Soaps, and these brands are well known all over the coast. "The Chemical Wax" is a favorite through all the mining regions of California and Nevada, and the Sperm, Adamantine, Coach and Hotel Candles are recognized as a standard with the trade.

Adjoining the main building is a large, solid wooden structure, devoted exclusively to the manufacture of soap. When our reporter called, three immense vats running from the top story, funnel-shaped, to the lower floor, were filled with boiling soap. Each vat contained 30,000 lbs. The machinery in this department is of the latest style, and all brands and styles of laundry and toilet soap are manufactured, stamped, wrapped, boxed, marked and ready for delivery.

These works were established in 1870, and, since that time, all the Government contracts for candles and soap for the Department of California have been filled by them. The general excellence of the goods fully sustains the reputation of the works. For the past 12 years over 1,000 families in San Francisco have used the Mission Extra Family Soap, and the demand is constantly increasing. The enterprise of the proprietor and his hostility to the employment of Chinese labor is sufficient to prophesy for him a successful business career in his conduct of the Mission Soap and Candle Works.

The above sketch will no doubt interest many of our readers, and those who believe in patronizing home industry can have the opportunity by calling for Mr. Morganthau's goods. He claims that his manufactures are superior to Eastern makes and no higher in price. He rightly thinks he should be supported by the people of the Pacific coast, because he spends his money here, while money paid for Eastern soap goes to build up Eastern industries instead of our own. The account above shows that Mr. Morganthau has much enterprise in his business, and he should be encouraged.

DE LESSEP'S NEW PROJECT.—The French Cabinet Council has approved the scheme of M. de Lessep's for cutting a canal through the neck of land dividing the Gulf of Gabes from the salt marshes and low-lying parts of the desert of Sahara to the south of Tunis. It is expected that the sea will, in virtue of this cutting, once more fill up a considerable portion of the Sahara. The political advantage to be obtained by the scheme, if it succeeds, will be the insulation of Tunis and Algeria by creating a water barrier between them and Tripoli. The cost of the canal, it is estimated, will be 65,000,000 francs.

Political Mention.

[The publishers will admit political matter in this business department only, for all parties alike, and without assuming responsibility for the same.]

The press speaks with favor of the candidacy of Mr. J. G. Kennedy for the nomination of State Superintendent of Public Instruction on the Democratic ticket. He has been Principal of the San Jose high school for years, which position he has filled with credit to himself and with satisfaction to the people of San Jose. That flourishing institution, we are informed, owes its prosperity almost entirely to his untiring efforts. Indeed, he was the founder of the present excellent school system of San Jose. He is said to be a man of broad and liberal views, and a statesman among educators. His administration as Superintendent of Santa Clara county, and afterwards as City Superintendent of Schools for San Jose, we are informed, met with general favor. The opinion expressed of him is, that he is a superior teacher, a scholar, and above all, a man of model habits and unimpeachable character.

WHITE LEAD.

USE NONE BUT HOME MANUFACTURE!

Guaranteed to be Superior to any imported. The "Pioneer" White Lead is an entire Pacific Coast Production, and it is guaranteed free from any adulterations. It is STRICTLY PURE. It is superior in COLOR, BODY, FINENESS and DURABILITY to any made elsewhere in the world. Use no other. The use of the "Pioneer" White Lead means the employment of every industrial interest on the Coast—the Miner is employed, the Farmer raises the oil seed, the Mechanic makes the machinery and kegs, and the laborer has occupation. The purchase or encouragement of Foreign manufactures, is SUICIDE to every manufacturing interest on this Coast, and to our dependence as a community, and integrity in the employment of intelligent labor and to the consumers of our natural and home productions.

No matter how specious arguments of others may be, reflect and consult interests, not of the moment, but of the future, your own happiness and welfare, and that of your progeny, and promote and establish it by using nothing but HOME MANUFACTURES. In your painting wants use nothing but PIONEER WHITE LEAD.

Every First-class California Storekeeper has it.

RUBBER PAINT.

THE PACIFIC RUBBER PAINT

Was the O iginal RUBBER PAINT introduced on this coast. At time of its introduction the Averill Paint Company, since changed to the California Paint Company, was the only manufacturer of Mixed Paints in California. Our advent with an article of Paint, the manufacture of which was the result of a PRACTICAL experience of over 30 years, so completely retired the paint of our competitors that they in their utter ignorance of all business courtesies or honor, counterfeited our trademarks and labels. We ask the question, if they had confidence in their own stuff, why not make an honorable stand-up fight on the issue of QUALITY and merit. But they displayed their cowardice and contemptible littleness by evading an honorable and business issue, and resorting to putting up their mixtures under a title—RUBBER PAINT—which we had made for years before a record for, as the "Best Mixed Paint" made in the world—a record earned by our practical experience and public trial.

DON'T TAKE ANY MIXED PAINT EXCEPTING THE PACIFIC RUBBER PAINT. SEE THAT THE WORD PACIFIC IS ON EVERY LABEL.

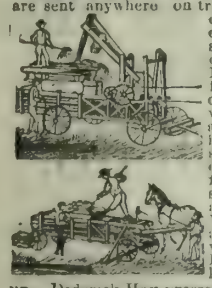
Any other so-called RUBBER PAINT is a Miserable and Contemptible Imitation.

If your Storekeeper don't keep it, send to us direct, and we will with pleasure give you color cards, prices and such other information as you may desire.

WHITTIER, FULLER & CO.,

Manufacturers Pacific Rubber Paint. - - - - - - - - San Francisco.

DEDERICK'S HAY PRESSES

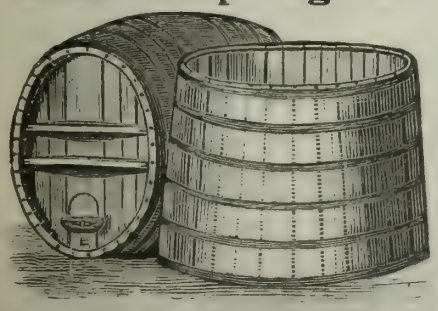


are sent anywhere on trial to operate against all other Presses, the customer keeping the one that suits best. No one has ever dared show up any other Press, as Dederick's Press is known to be beyond competition, and will bale with twice the rapidity of any other. The only way inferior machines can be sold is to deceive the inexperienced by ridiculously false statements, and thus sell without sight or seeing, and swindle the purchaser. Working any other Press alongside of Dederick's always sells the purchaser a Dederick Press, and all know it too well to show up. Dederick Hay presses and prepared Wire Bale Ties in stock. Address, for circular,

M. C. HAWLEY & CO., San Francisco, California.

CALIFORNIA

Wine Cooperage Co.



FULDA BROS, Proprietors.

30 to 40 Spear St., S F.

ALL KINDS OF CASKS, TANKS, ETC.

Ship, Mining and Water Tanks a Specialty.

M. COOKE R. J. COOKE

PIONEER BOX FACTORY,

Corner of Front and M Streets, Sacramento

ALL KINDS OF

Fruit and Packing Boxes Made to Order,

AND IN SHOOKS.

Communications Promptly Attended to.

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50 All New Style Chromo Cards no two alike, name on 10 cents. Clinton Bros., Clintonville, Conn.

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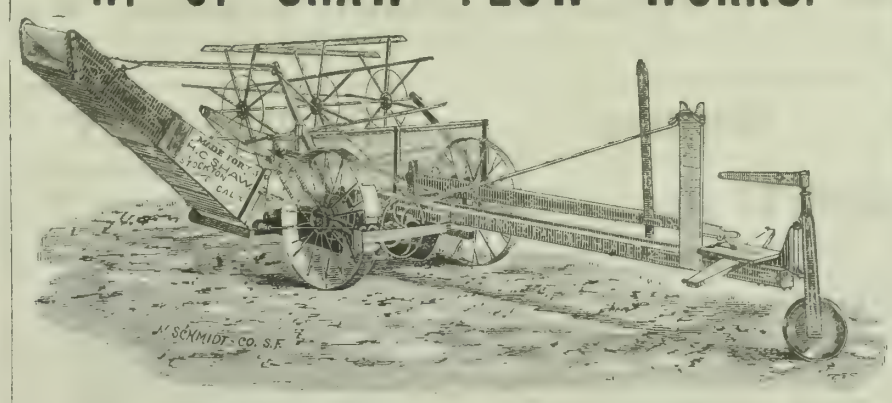

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IMPROVED RANDOLPH HEADERS,

LIGHTEST DRAFT!! BEST ELEVATION!!!

Three Hundred Sold in Two Years.

Chieftain Sulky Hay Rakes,

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ALSO, AGENTS FOR

WALTER A. WOODS' IRON MOWERS,

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Powell's Electric Hay and Grain Elevator.

HEADER EXTRAS! MOWER EXTRAS!! PLOW EXTRAS!!!

(Send for Illustrated Catalogue and Price list.)

201-3 El Dorado Street, - - - Stockton, Cal.

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CHURCH'S

Hay Elevator & Carrier.

BEST in use for Mowing Away Hay in barns or stacking, being adapted for either purpose. Has no equal for Simplicity, Durability and good work. The track is self adjusting and is easily put up. Send for descriptive circular and special terms for introduction to K. L. CHURCH, Manufacturer, Harvard, McHenry County, Illinois.

Eureka! Found At Last!

A. W. LOCKHART'S

SEPARATOR ATTACHMENT.

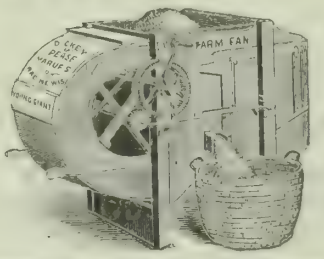
To Threshers.

It is light, can be attached to any thresher; $5 00 per year will keep it in repair. By its use 500 bu hels more per day can be thresh d and cleaned, saving to the farmer enough to pay his threshing b lls, also putting the grain into merchantable condition, saving time lost in reopening sacks and cleaning over. Farmers and Threshers will please call and see for themselves, at No. 128, 15th street, between C and D streets, Sacramento. Also, my Feeder and Elevator Attachment, so well and favorably known as to need no comment.

A. W. LOCKHART.

A. P. DICKEY FARM AND WAREHOUSE

FANNING MILLS.



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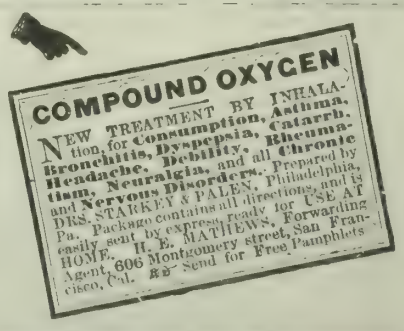

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EXTRACT OF TOBACCO.

Free from Poison. Prepared by the Italian Government Co. Cures thoroughly the

SCAB OF THE SHEEP.

The BEST and CHEAPEST remedy known. Reliable testimonials at our office.

Has been Applied in Destroying the Phylloxera and Garden Bugs with Success.

For particulars apply to CHAS. DUISENBERG & CO Sole Agents, 314 Sacramento St., San Francisco.

100 All New Style Best Quality Lithographed **CARDS** Your Name in Fancy Lettering Printed On All **FREE!** We send this the most Elegant pack ever published free to every one sending 10 cts. for our new price list, & Illustrated Premium List. Agents Large Sample Book & 100 samples 25 cents. Address, STEVENS BROTHERS, Northford, Conn.

"Abel Stearns RANCHOS."

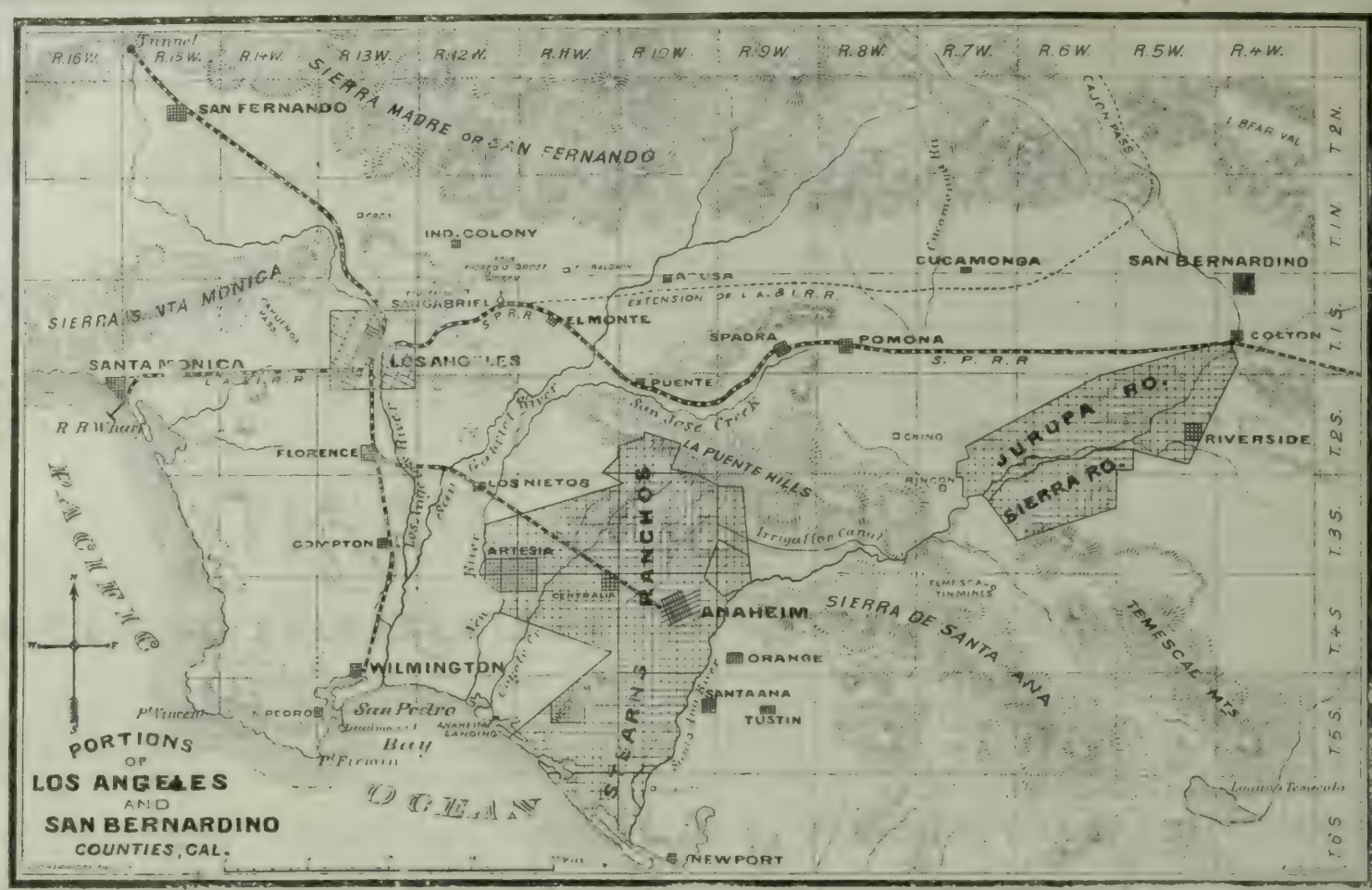
The Center of Los Angeles Valley.

Embracing Anaheim, Westminster, Artesia, Garden Grove, etc. Thirteen miles southeast of Los Angeles City, *within the Artesian Well Belt.* Hundreds of flowing pipe wells. Water near the surface. Rivers on two sides; ever flowing creek runs through the tract. *Front on the Ocean.* Transportation and passage by Steamships or Railroad. Southern Pacific Railroad through the tract. Twenty-one hours from San Francisco. The unsold land for sale or lease in sections or fractions. Apply to Trustee A. ROBINSON, 318 California St., San Francisco.

Or to ROBERT J. NORTHAM, Anaheim, Cal., or concerning Westminster colony, to REV. ROBERT STRONG, Westminster, Cal.

Terms, one-fifth cash, balance on interest at 10 per cent. per annum.

Send for Circulars and Maps.



GEO. W. MEADE & CO.,

Office and Warehouse, Nos. 416 and 418 Front Street, San Francisco, Cal.

WHOLESALE DEALERS IN

California and Oregon Sun Dried and Evaporated Fruits,

CALIFORNIA RAISINS AND FRENCH PRUNES.

CALIFORNIA COMB AND EXTRACTED HONEY, ALMONDS, WALNUTS, Etc., Etc.

As the LEADING HOUSE and HEADQUARTERS in all these products, we are ready to correspond with the producers with the view of purchase or contract for the coming crops. REMEMBER, that we purchase outright, either at points of production, paying freights, etc., ourselves, or delivered in S. F., freight paid. Remember, also, that in dealing with us you are operating through strictly FIRST HANDS. NO COMMISSIONS charged. NO DELAYS in settlements.

FAHRENKRUG'S DISCOVERY.

GREATEST KNOWN

Blood Purifier

NATURAL

Mineral Water

USED

Internally & Externally.

This discovery will, when given a fair trial, prove its superior value as a household remedy, combining, with the low price with which it is offered, the necessary elements to assist Nature in restoring health to the afflicted.

Rheumatism, Neuralgia, Poison Oak, Catarrh, Dyspepsia, Fever and Ague, Piles, Biliousness, Fever Sores, Kidney Diseases and Female Complaints.

And skin eruptions yield to its influence, disappearing like magic when the system receives its beneficial action.

Remember this is a natural mineral water, given pure from the spring.

For Sale by Druggists Everywhere.

Office, 638 Howard and Third streets, S. F.

CALIFORNIA VOLCANIC WATER CO.

Is the best Pump in the World. Another new Improvement is Lewis' Patent Spray Attachment.

Can change from solid stream to spray instantly. Regular retail price, $6. Weight, 4½ lbs. Length, 32 inches.

FOR SALE BY JOHN H. WHEELER, 111 Leidesdorff St., S. F.

P. S. A sample can be seen at this office.

Educational.

SACKETT (FOR BOYS) SCHOOL.

Takes first rank for thoroughness and ability of its teachers; also for home care.

Business, Classical, and English Departments.

Next Term commences July 16th.

Send for Catalogue to D. P. SACKETT, A. M., Principal, Oakland, Cal.

THE HOME SCHOOL FOR YOUNG LADIES,

1825 Telegraph Avenue, Oakland, Cal.

The next year will begin on

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B. N. FIELD, Principal.

BARNARD'S BUSINESS COLLEGE

417 KEARNY STREET S.F.

LIFE MEMBERSHIP $75.

Parents are invited to call and examine our superior facilities for giving a thorough and practical course in the art of accounts, the English language, penmanship, mathematics, spelling, grammar and elocution.

JOHN JENNINGS.

Hooper's South End Grain Warehouses,

Cor. Japan and Townsend Sts., S. F.

First-class Fire-proof Brick Building. Capacity, 10,000 tons. Goods taken from the Dock and the Cars of the C. P. R. R. and S. P. R. R. free of charge. Storage at Current Rates. Advances and Insurance effected.

Silos, Reservoirs, Head Gates,

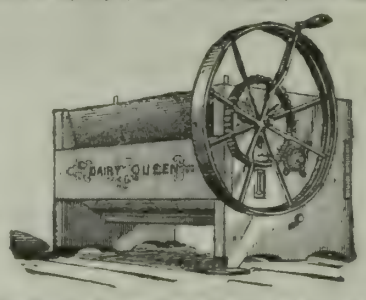
ARTIFICIAL STONE AND CONCRETE.

RANSOME, 402 Montgomery St., S. F. Send for circular.

"THE DAIRY QUEEN"

Improved Churn and Butter-Worker.

Pat'd U. S., July 6, 1880. Pat'd Canada, Dec. 2, 1880.



This Churn is the most perfect machine of its class ever made; the result of several years' study and experiment, by a practical dairyman. Made extra heavy of the best material. The only NON-CORROSIVE METALLIC Churn ever offered to the public.

It took the First Premium at the Stockton Fair, Nevada State Fair and the California State Fair, 1881, as a churn, and a Diploma as the best Butter-Worker. For further particulars and circulars address the Inventor and Sole Patentee GEO. W. FREEMAN, Oakland, Cal.

Or Jas. L. Haley, Janesville, Lassen Co., Cal., Benicia Agricultural Works, Benicia, Cal.

We have for sale at our farm at Mountain View, thoroughbred

BERKSHIRE PIGS

From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880. Pigs from imported Boar and Sow, $25 each. From Imported Boar and Thoroughbred Sow, $10 to $20. Our Imported Pigs are as nice Pigs as there are in the State. Address JACKSON & TRUMAN, S. F.

FOR THE BEST IMPROVED

ARTIFICIAL LIMBS

ADDRESS MENZO SPRING, 9 Geary St. SAN FRANCISCO, Cal.

Opposite Up-Stairs. OFFICE 5.

FRUIT AND FISH CANNERIES.

LACQUERS.

We have in stock a large quantity of superior LACQUERS for cans, which we offer to the trade and to consumers at low prices.

Also on hand first quality sweet Benzine.

Orders solicited.

WHITTIER, FULLER & CO.

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BAILEY, BADGLEY & CO.,

Cor. Main and California Sts., Stockton, Cal

Importers and Jobbers in

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Agents for the

J. I. Case and Woods Headers, McCormick Harvesting Machine Co.'s Binders, Reapers and Mowers, the LaBelle Freight, Farm and Header Wagons, Althouse Vaneless Windmills, Minnesota Chief Threshers, Engines and Horse Powers, San Leandro, Buford and Stockton Gang and Sulky Plows.

Also, State Agents for the Celebrated

AMERICAN HAY CARRIER and ELEVATOR.

Large Stock of Builders' Hardware and Carpenters' Tools. Orders Promptly Filled, and Goods sold at Bedrock Prices.

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Residence: 965 West Street, Oakland. Before 10 A. M., after 5 P. M.

Office: 759 Market St., San Francisco. From 11 A. M. to 3 P. M.

IMPORTANT SEMI-TROPIC COLONY ENTERPRISE.

The Fairest and Best of Colonies.

THE REDLANDS,

In San Bernardino County, California

Superior Soil, Climate and Irrigating Improvements.

The following information concerning one of the best-reputed and promising colony enterprises in southern California, is from the Riverside *Press*, of San Bernardino county, April 1, 1882:

A Model Settlement.

No place in California has sprung into public notice so rapidly and gained so deserved a reputation in so short a time as has the new tract of Redlands.

This tract is located between Old San Bernardino and Crafton on the south side of Mill Creek ditch and comprises 2,500 acres of as choice fruit lands as can be found in the State. The land is of a reddish clayey loam, not clayey enough to work hard, having sufficient admixture of sand to hold moisture and give the best results when planted to orchard or vineyard. The red lands of the State are everywhere celebrated as being superior for tree and vine.

The tract slopes to the northwest and commands one of the grandest views to be found in the State. To the north and northwest lies stretched out, several hundred feet below, the San Bernardino valley, with the towns of San Bernardino and Colton plainly in view, while, looking to the westward at night, the headlights of the Eastern-bound trains can be distinctly seen for 40 miles. Beyond the San Bernardino valley to the northwest, and stretching around to the northeast, the chain of mountains tower 9,000 ft. above the sea level, culminating in Mount San Bernardino, 11,000 ft. high, and Grayback, 11,550 ft. high, both of which stand up boldly from the Redlands point of view, and whose tops are covered with snow more than half of each year. Around to the left of the picture are the Cucamonga peaks, 40 miles distant, which complete the semi-circular mountain chain that makes such a beautiful background to the landscape. For mountain and valley scenery no more beautiful location can be found in the State than Redlands, outside of Yosemite valley.

Redlands is located 10 miles from the county seat, the same distance from Colton, and 15 miles from Riverside. The track of the Southern Pacific railroad runs within two miles of the Redlands tract, and at an early day a depot will be established for the accommodation of Redlands, Lugonia, Crafton and Old San Bernardino.

The Redlands tract is laid off by running avenues from northeast to southwest, one-quarter of a mile apart and cross streets at right angles to those avenues every half mile, thus cutting the tract into blocks, each of which contains 80 acres. The avenues are each 100 ft. wide, and are being graded and set to shade trees, there being a row of trees down the center of each avenue and a row on either side, making a beautiful double drive with shade trees on either side. Between the front line of the block and the center line of shade trees is a sidewalk 12 ft. wide. The cross streets are 60 ft. wide, and are also being planted in shade trees on either side. The streets furnish a single drive with sidewalks on either side.

Although the first work done on the tract by settlers could not be commenced till about the 1st of January, 1882, there are at the present time some 10 or 12 houses erected and in process of erection, with several to commence work soon. A number of tracts, in addition to those on which houses are being built, are being plowed up and planted to orchard and vineyard.

The lateness in the season when the land was bought by purchasers, prevented many from getting their land set out to trees or vines this year, but all who have purchased are making arrangements to plant extensively next winter and spring.

Town Plat.

Near the center of the tract is a town plat, consisting of 140 acres, cut up into lots ranging from an ordinary business lot to two and a half and five acre residence lots. Within this town plat, at the crossing of Palm and Center avenues, is a circular public park, with a fountain in the center. This park will be improved by the proprietors of the tract. Above the town plat will be constructed a small reservoir, from which iron pipes will be laid to supply the town with water under pressure.

The Water System.

Is one of the most perfect in the State. The water supply comes partially from the South Fork ditch of the Santa Ana river and partially from private water developments in the Santa Ana canyon and other localities. The waters are to be conducted to a large reservoir, located in a canyon adjoining the tract, and distributed from this reservoir by means of cement pipes. These pipes will be so laid as to carry the water without loss to the highest point on each ten-acre lot. The basis of water supply is one inch of water, statute measurement, to each eight acres of land. This is ample, and up to the best irrigated tracts in the State.

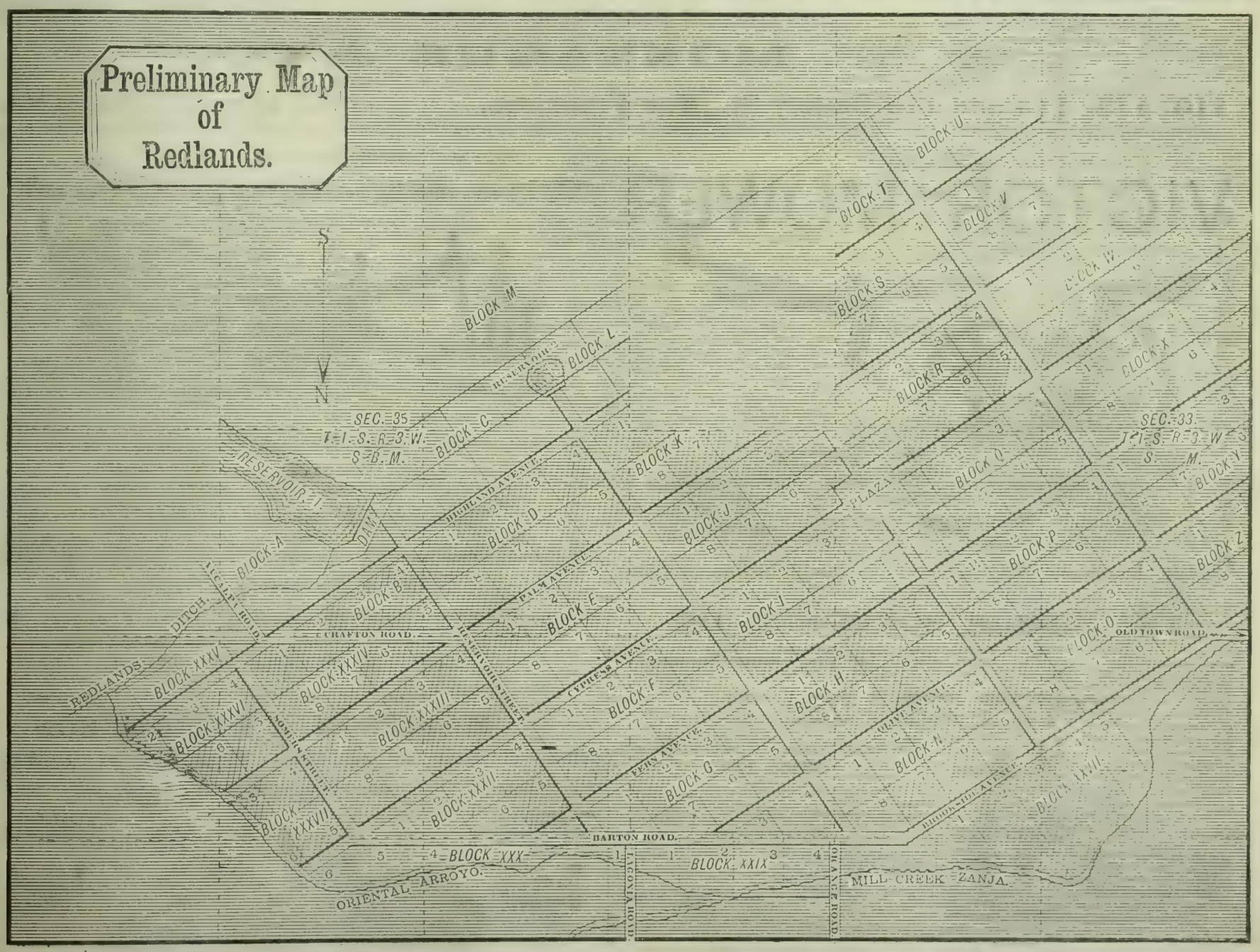
Work on the water system is being pushed as rapidly as men and money can do the work. The dam to the reservoir, which is ultimately to be 60 and perhaps 80 ft. high, is now about half done; the iron discharge pipes and water-gates are in position, and nearly four miles of the largest distributing pipes are already manufactured, and most of this is laid. This portion of the work embraces the 8, 10, 12, and 14-inch pipes—the heaviest portion of the work. The smaller pipes, none of which will be less than four inches, will be made and laid as soon as the larger pipes are completed.

The orange, lemon, apricot, peach and raisin grape, will grow here to perfection.

Following is a list of the property owners at the present time. Those who have moved upon the tract are credited to Redlands, and the others to localities where they now reside:

Names	Acres
J. J. Cockshutt, Redlands	20
C. W. Kidder, Redlands	10
J. F. Welsh, Redlands	20
B. W. Brown, Redlands	10
Israel Beal, Redlands	10
C. E. Tuesdell, Redlands	20
R. B. Morton & Co., Redlands	30
C. A. Smith, Redlands	10
C. W. Smith, Redlands	10
Mrs. R. W. Brown, Redlands	10
Mrs. E. E. Seymour, Redlands	20
P. R. Brown, Redlands	20
A. G. Simms, Redlands	10
Simeon Cook, Redlands	20
J. E. Sinclair, Redlands	20
John Carroll, Redlands	10
George Cassady, Redlands	10
Orsen Van Leuven, Redlands	10
C. K. Dewell, Redlands	10
E. J. Waite, Redlands	5
W. N. Mann, Riverside	50
A. S. White	20
L. M. Holt, Riverside	20
K. F. Overton, Riverside	20
C. W. Boggs, Riverside	10
A. W. Boggs, Riverside	20
S. R. Weir, Riverside	10
J. S. Edwards, Riverside	10
Geo. Frost, Riverside	20
Mrs. V. V. Annabel, Riverside	50
J. P. Greeves, Riverside	10
D. U. Findlay, Riverside	10
A. G. Saunders, Riverside	10
E. K. Henderson, Riverside	20
Rev. F. M. Colburn, Riverside	10
E. P. Moody, Riverside	10
T. B. Stephenson, Riverside	10
A. H. Averill, Riverside	10
J. S. Cover, Riverside	10
S. McCoy, Riverside	10
S. H. Averill, Riverside	10
B. F. Allen, Riverside	10
H. E. Allett, Riverside	10
H. E. Branch, Riverside	10
E. M. Westbrook, Riverside	10
J. B. Kimball, Riverside	10
N. H. Kingsley, Riverside	10
Hugh Marshall, Eureka Mills, Plumas county	10
T. B. Inch, Eureka Mills, Plumas county	20
J. Hosking, Eureka Mills, Plumas county	20
T. W. Ladd, Eureka Mills, Plumas county	20
Mrs. Sarah J. Morey, Eureka Mills, Plumas county	10
C. N. Hill, Eureka Mills, Plumas county	20
G. N. Starke, Grundy Centre, Iowa	30
F. P. Morrison	25
A. T. Dewey, San Francisco	12
W. B. Ewer, San Francisco	12
B. F. Watrous	10
H. L. Rutgers	20
J. W. Bashford	5
S. Comey	5
Mrs. B. O. Johnson, Deep River, Conn.	10
J. D. Dewell, New Haven, Conn.	10
Eugene B. Cutts, Carson City, Nevada	10
W. A. Merriam	10
J. T. Ford, San Bernardino	20
T. S. Ingham, San Bernardino	10
L. Jacobs, San Bernardino	2½
Total sold	1,004

Judson & Brown (San Bernardino, P. O.), owners of the tract, are energetic men, who leave no stone unturned to make their enterprise a success. They do not try to figure how little they can do and sell their land, but where they can put another thousand dollars and make the tract more desirable to first-class settlers. There is nothing shoddy about their operations. Redlands will stand in a few years as one of the finest settlements on the Pacific coast.



AMERICAN BARB WIRE

FENCING.

GALVANIZED, PAINTED OR JAPANNED.

The Handsomest, Stiffest, and Most Durable. No Rust. No Decay. Secure Against Fire, Flood and Wind.

IT IS THE ONLY BARB WIRE that will prevent small animals, such as rabbits, hares, pigs, dogs, cats, etc., from passing through, under or over it, the barbs are so near each other.

The Barbs being triangular-shaped, like the teeth of a saw, and close together, there is no *cruelty to animals*, as they cannot pierce the hide; they only prick, which is all that is ever necessary as *no animal will go near a Barb Fence twice.*

AS THE WIRE IS NOT BENT OR TWISTED, its tensile strength is much greater than the Wire in all other Barb Wire Fences, as they are all made of twisted or bent Wire.

HEAT AND COLD CANNOT AFFECT THE AMERICAN BARB FENCE, as it can be allowed to sag when put up, enough to cover contraction and expansion, *because it is a continuous Barb, and cannot slip through the staples one inch.* Each panel of Fence takes care of itself.

The Barbs cannot be displaced or rubbed off, and are not pounded on and indented into the wire to hold them in place, as in other Barb Wire, thereby decreasing the strength of the Wire The Barbs are short, and broad at the base, where strength is required.

THE PAINTED WEIGHS A POUND TO THE ROD, so that the purchaser knows exactly how much fencing he is getting. Galvanized weighs slightly more.

☞ SEND FOR SAMPLES AND PRICES. ☜

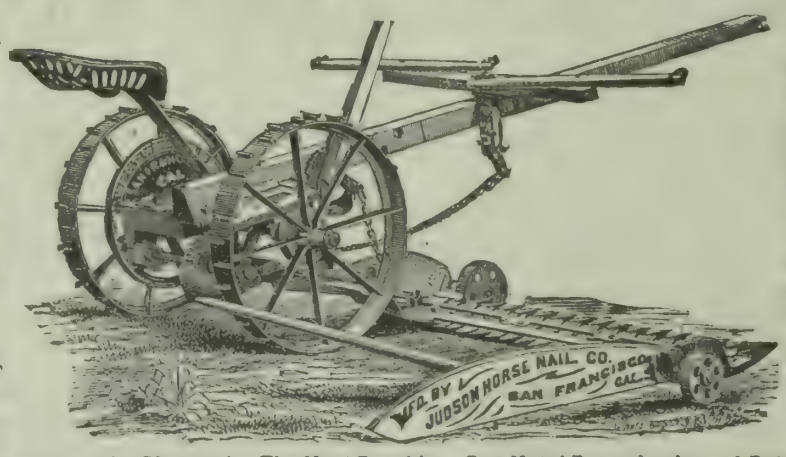
W. W. MONTAGUE & CO.,

110, 112, 114 and 116 Battery St., San Francisco, Sole Agents for the Pacific Coast.

THE

VICTOR MOWER.

The Only Mower Made on the Pacific Slope.



SEND FOR PRICES AND CATALOGUE
Extras at What They are Worth.

The Best. The Cheapest. The Most Durable. Gun Metal Boxes in place of Babbitt

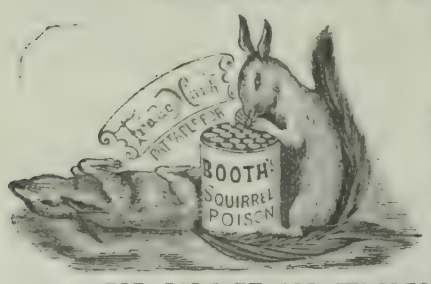
MANUFACTURED BY

THE JUDSON HORSE-NAIL CO.

Office, 402 Front Street, San Francisco.

CHEAPEST. BEST.

BOOTH'S SURE DEATH



To Squirrels, Gophers, Birds, Mice, Etc.

☞ Endorsed by the Grange and all others who have used it

INFALLIBLE SQUIRREL and COPHER EXTERMINATOR.

STRENGTH INCREASED. PRICE REDUCED.

Put up in 1 lb., 5 lb., and 5 gallon tins. Manufactured by

A. R. BOOTH, Eagle Drug Store,

San Luis Obispo, Cal.

FOR SALE BY ALL WHOLESALE AND RETAIL DEALERS.

NEW STORE AND LARGE STOCK!

AUSTIN BROTHERS,

IMPORTERS OF

HARDWARE, IRON, AND BLACKSMITH SUPPLIES.

Rope, Wire, Belting, Pumps, Pipe and Steam Fittings.

310 and 312 Main Street, Corner of America,

STOCKTON.

Agents Halladay Wind Mills.

To Fish Raisers.

I am now ready to sell Carp which were imported by me from Germany in 1872, in lots to suit. Address

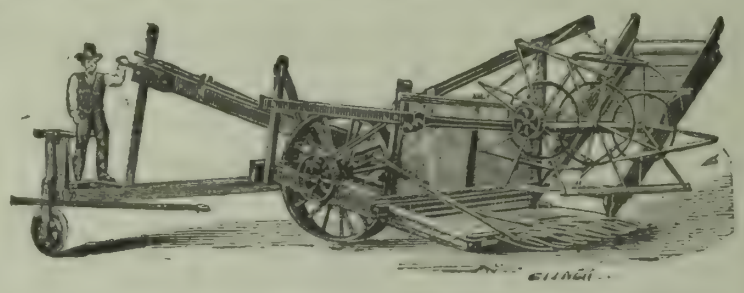
J. A. POPPE, Sonoma, Cal.

MERRILL'S PATENT REIN HOLDER.

This is a sure and certain preventative to keep horses from running away. **Price $2.50.** Address W. P. MERRILL, Florin, Sacramento Co., Cal.

RICHARDS' IMPROVED HEADER.

"The Stockton Chief!"



These Machines all Have Forty Inch Drapers.

The Farmers call it the "BOSS HEADER OF CALIFORNIA" Built especially for California Trade.

THE OPERATOR CAN STOP THE DRAPER AT WILL. CUT 10 FT. TO 16 FT.

IRON FOUNDERS AND MANUFACTURERS OF

FARMING IMPLEMENTS!

DERRICKS AND FORKS,

Plows, Harrows, Cultivators, Steel Road Scrapers, Etc.

Call at the old Stand or Send for Catalogue and Price List, Liberal Discounts to the trade.

Orders for the "STOCKTON CHIEF" HEADER

Should be forwarded early, as the demand is so great that it is difficult to fill late orders.

MATTESON & WILLIAMSON,

Corner of Main and California S's., Stockton, California.

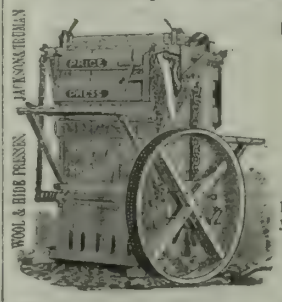
SIMPLE, Durable AND CHEAP.

RAPID, Powerful AND STRONG.

Dederick Mounted Over-Circle Perpetual Baling Press in Operation.

THE LATEST IMPROVED

HAY, HIDE and WOOL PRESSES.



Dederick Over-Circle Mounted Perpetual Presses,
Dederick Reversible Lever Perpetual Presses,
Dederick Belt Perpetual Presses,
Price Hay Presses.
Improved Eagle Presses,
Improved Eclipse Presses.

We make and carry in stock the latest and most improved Presses for Baling Hay, Hides and Wool. Send us your address on a postal card, and we will mail you our new catalogue, giving a full description of all the goods we make Address

JACKSON & TRUMAN,

The Price Press. 625 Sixth Street, - - San Francisco

BREEDERS' DIRECTORY.

Six lines or less in this Directory at 50 cts a line per month.

CATTLE.

WILLIAM NILES, Los Angeles, Cal. Thoroughbred Poultry, Cattle and Hogs. Write for circular.

PETER SAXE & SON, Lick House, S. F. Importers and Breeders for past *eleven* years. Berkshires, "Jerseys," "Short Horns," and all varieties of Sheep, and their grades.

COTATE RANCH BREEDING FARM, Page's Station, S. F. & N. P. R. R., Sonoma County. Wilfred Page, Manager. P. O. address, Petaluma, Cal. Short Horn Bulls and Cows, Spanish Merino Bucks and Ewes, for sale at reasonable figures.

SYLVESTER SCOTT, Cloverdale, Sonoma Co., Cal., Breeder of Recorded Thoroughbred Short Horn Cattle and Spanish Merino Sheep. Jacks and Jennets for sale at reasonable figures.

J. ALEXANDER, Stockton, Cal. Breeder of first-class Dairy Stock and Berkshire Swine. Half and three-quarters Jersey cows and heifers for sale.

ROBT. BECK, San Francisco. Breeder of Thoroughbred Jersey cattle. Herd took Six Premiums of the eleven offered at State Fair, 1881.

GEO. BEMENT, Redwood City, San Mateo Co., Cal. Breeder of Ayrshire Cattle. Several fine young Bulls, Yearlings and Calves For Sale.

R. McENESPY, Chico, Butte Co., Cal. Breeder of Thoroughbred Devons.

HENRY PIERCE, 728 Montgomery Street, S. F. Breeder of Jersey, Guernsey and Ayrshire Cattle.

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E. A. SACKRIDER, 325 Eleventh St., Oakland, Cal Importer of Norman-Percheron horses. Horses on hand and for sale at reasonable terms.

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E. W. WOOLSEY & SON, Fulton, Sonoma Co., Cal. Importers and Breeders of choice Thoroughbred Spanish Merino Sheep. City office, No. 418 California St., S. F.

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THE PACIFIC COAST THOROUGHBRED POULTRY ASSOCIATION. 1011 Broadway, Oakland, Cal., J. M. Halsted, Manager. All the leading varieties of land and water fowl for sale. Eggs from Plymouth Rocks, Buff and Partridge Cochins, Light and Dark Brahmas, Brown Leghorn, Black Spanish, Houdans, etc., $2 per dozen. Langshans, $3. Bronze Turkeys, $4. Dealers in Incubators, Brooders, Egg Testers, etc. Send stamp for circular.

TOULOUSE GEESE at $15 per pair; $20 per trio; Eggs, $8 per dozen. Bronze Turkeys, $10 per pair; Eggs, $4 per dozen. Address T. D Morris, Sonoma, Cal., breeder and importer of all kinds of thoroughbred poultry

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JOHN RIDER, Sacramento, Cal. Breeder of Thoroughbred Berkshire Swine. My stock of Hogs are all recorded in the American Berkshire Record.

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Are, by fraudulently imitating the style of packages even to forging the very Trade Mark of the Imperial, endeavoring to put upon the market

WORTHLESS STUFF OF NO VALUE WHATEVER TO FOWLS,

Under a name so similar to the Imperial as to be easily mistaken for it at first sight. We take this means of cautionin our numerous customers against the fraud until the law has time to take the perpetrators into its own keeping.

The Imperial Egg Food is now used in every part of the United States, and its sale on this coast is simply wonderful, our order book showing that every customer continues to order, while every letter received is a testimonial for the Imperial. Numerous preparations have from time to time appeared called "Egg Foods," but as they did not conflict in name or trademark, were perfectly allowable, and, after due time, failing in their purpose, passed out of the market, while the Imperial continued to gain favor everywhere. In purchasing, see that you get THE IMPERIAL and none other, no matter how nearly similar in name and appearance. Send for Circulars and Testimonials.

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1 Pound Package, 50 Cents. 6 Pound Box, $2 00,
2½ " " $1.00, 25 " Keg, 6.24.

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SUPERIOR SHEEP

For Wool, and Wool and Mutton Combined, of the World.

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Only one hour's ride from San Francisco, makes the Breeding of these Sheep a Specialty.

Choice Lot

EWES and RAMS

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Or E. W. Peet, Managing Agent, P. O. Box, 1164.

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Brahmas, Cochins, Houdans, Langshans, Leghorns, Polish Hamburgs, Bronze Turkeys,

And the new fowl, AMERICAN SEBRIGHT or EUREKA.

AGENT FOR THE PACIFIC INCUBATOR,

WHICH IS MADE IN THREE SIZES,

No. 1,	Capacity,	550	Eggs, Price,	$90.
No. 2,	"	250	" "	65.
No. 3,	"	180	" "	45.

Guaranteed to hatch NINETY PER CENT. of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season. For further particulars send stamp for illustrated circular to GEO. B. BAYLEY, Box 1771, San Francisco.

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ELIAS GALLUP, Hanford, Tulare Co., Cal

Breeder of pure bred Poland China pigs of the Black Beauty, Black Bess, Bismarck, and other noted families. Imported boars, King of Bonny View, and Gold Dust at head of the herd. Stock recorded in A. P. C. R. Pigs sold at reasonable rates. Correspondence solicited. Address as above.

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It Cures all Diseases of Poultry, Keeps Hens Healthy and Makes them Lay.

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B. F. WELLINGTON, Prop'r.

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I have for sale at my ranch, near Oroville, Butte county,

12 Young Short Horn Bulls,

From one to two years old. Price from $100 to $200 each.

ALSO

50 Short Horn Cows and Heifers.

All these cattle are red Durham—all thoroughbred. They are offered at private sale to those wishing to secure good stock. MOSES WICK.

Oroville, Butte Co., Cal.

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Cashier and Manager.

San Francisco, Jan. 15, 1882.

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SHEEP WASH.

$2 per Gallon.

After dipping the Sheep, is useful for preserving wet hides, destroying the vine pest, and for wheat dressings and disinfecting purposes, etc. T. W. JACKSON. S. F., Sole Agent for Pacific Coast.

The American Driven WELL WATER SUPPLY SYSTEM

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On 50 large size CARDS. Remembrance, Sentiment, Hand Bouquet, &c. No 2 alike, 10c, 14 pks. $1. Please send 20c. for Album of 100 samples and list of 200 elegant premiums and *Reduced Price List.* 20 fine Gilt Bevel Edge Cards, turned corner, 10c.

Your Name in this lettering *Minnie B. Rose*

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MAIN ST., STOCKTON, CAL. FIRST-CLASS HOUSE

JAMES CAVIN, Proprietor.

This House is the Leading Hotel of the City, containing all the modern improvements. General Ticket Office for the Big Trees, Yosemite Valley, Bodie, and General Stage Office for all the Southern Mountain Towns. The Yosemite Coach will convey guests from the boats and all trains, free of charge

The Sanborn Wagon.

We give on this page a picture of one of Sanborn's "sewing-machine wagons," which is adapted to quick, light work of many kinds. This is only one of many styles of vehicles made by Sanborn at the works at Manchester, N. H., and which have been sold on this coast for 23 years, thus proving their excellence. All the lumber is carefully seasoned to meet the requirements of a dry climate, and all parts, including axles and springs, are of thoroughly tested material. The setting of the axletrees gives the wagons an unusual ease of draft. At the Sanborn establishment, 24 and 26 Beale street, S. F., all kinds of vehicles can be had.

CAMP GOODALL.—Among watering places on the coast, there is one which came into notice last season—Camp Goodall, near Watsonville, where there is a fine beach, pleasant drives, and delightful scenery. The proprietors of this camp are preparing for the coming season by erecting a hotel and several cottages, the latter to contain four rooms each, and to be well supplied with good water from an artesian well. Sheds for horses, a bath-house, a dancing hall and other improvements are among the contemplated additions.

FARMERS and thrashers who wish the celebrated steel-laid and hand-made Star cylinder and concave tooth should send their orders early to A. F. Lashiells, Biggs, Butte county, Cal. The steel is laid on Norway iron, and extends through the bar of the cylinder, each tooth being tempered in a composition that makes the tooth wear evenly. Those who have used them speak in the highest terms of their superiority.

THE Indianapolis Chair Manufacturing Co., whose advertisement appears in this number, is one of the leading and reliable houses of this coast. They have just received by rail a large line of the latest patterns and newest designs of house-furnishing goods, direct from their manufactory. The new Indianapolis patent sofa-bed is one of the neatest and best sofa-beds yet invented.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

Hay Rakes.

The celebrated hay rakes manufactured by John Dodds, Dayton, Ohio, can be found in large stock at the San Francisco branch, 37 Market St. The old reliable Hollingsworth Rake has taken three Gold Medals at International Fairs. The Red Bird is cheap, simple and a great favorite. The new Reindeer is the strongest and most durable Self-Dump Rake on the market. The iron axle and wheels, rocker-frame movement, adjustable teeth, dumping device and other improvements make them the most desirable Rakes manufactured. See the agent, S. Gould, before purchasing, 37 Market St., S. F.

Grain Cleaner.

Among the several grain cleaners brought to the notice of Threshermen this season, T. S. Bayley has completed and patented one which presents several points of superiority over all others. For cheapness, simplicity, easy draft, lightness, durability, capacity and convenience, it excells. The sieves are so arranged that the wheat screens can be taken out and barley run through from the thresher, thereby cleaning it more thoroughly. Prices, with header trucks, $350; with shop trucks, $325; without trucks, $275. For circulars and further particulars, address, T. S. Bayley, San Leandro, Cal.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

PERSONS receiving a sample copy of the PACIFIC RURAL PRESS *with this notice marked*, are requested to examine the merits of the same, and consider fairly its claims for support, and if consistent, subscribe for the paper through the P. M. or agent delivering it, or otherwise. We will send it, on trial, at the rate of $3 per annum for any period the reader may wish. Please notice our terms elsewhere, and if desired, send for further samples and information. Those who can circulate this No. further to our advantage are invited to do so.

Cylinder Printing Press for Sale.

A large cylinder Hoe printing press, for country newspaper work, can be bought cheap by addressing

Press, Box 2361, S. F.

A TURNED LEAF will point out the article supposed to be of special interest to persons receiving sample copies of this paper.

ANNUAL STATISTICIAN OF 1882 —"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 502 Taylor St. Price, $4.

DON'T Buy Ensilage or Feed Cutters till you see New York Plow Co.'s "Cycle," 55 Beekman Street.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, May 31, 1882.

Trade has been fair and no great variation is noted in Grain prices. Dealing in futures continues, as will be seen below. The latest from abroad is the following:

LIVERPOOL, May 31.—Wheat: California spot lots are firmer at 9s 9d to 10s 1d. Cargo lots are 47s for just shipped, 49s 6d for nearly due and 49s 6d for off coast.

The Foreign Review.

LONDON, May 29.—The *Mark Lane Express*, in its review of the British Grain trade for the past week, says: The weather is very favorable for growing crops. There are no quotable changes in home Breadstuffs, but Wheat and Flour have tended somewhat in favor of buyers. Foreign Wheat and Flour have also been somewhat in favor of buyers, being influenced by a large supply of Wheat off the coast, especially Australian and New Zealand. Maize, Barley and Oats have also been weaker. The off coast trade is very quiet. No. 1 California Wheat has declined about 1s since the last reported sales. Forty-eight Wheat cargoes arrived at this port's call during the week; 14 were sold and one-half were withdrawn. Trade on passage and for shipment is very inanimate. A cargo of Red Winter on passage fetched 48s. The quantity of Wheat and Flour now afloat is 107,500 quarters greater than at the same period in 1881. Sales of English Wheat the past week are 28,305 quarters, at 48s, against 31,012 quarters, at 44s 1d, for the corresponding period last year.

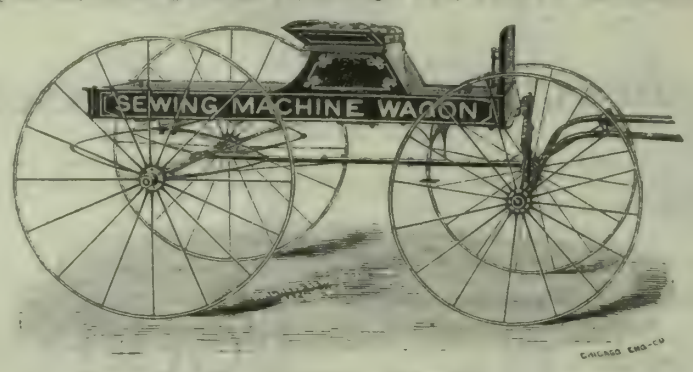
Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive according to the latest advices:

In port.	1882.	1881
Engaged, tons	28,600	38,700
Disengaged, tons	33,300	6,700
To arrive, tons	258,800	315,300
Total	320,700	360,700

Decrease for 1882 ..... 40 000

The amount of tonnage under engagement yesterday to load Wheat was 23,700 tons, against 33,600 tons for the corresponding date last year, showing a decrease of 9,900 tons. There were 16 vessels under engagement yesterday morning at this port to load Wheat. The engaged and disengaged tonnage in port has a Wheat-carrying capacity for 92,800 short tons, against a capacity for 101,400 tons on the corresponding date last year. No Wheat charters were reported yesterday, the market closing weak. The last reported charters have been on the basis of 55s for iron vessels to Cork, U. K.



The Sanborn Wagon.

Eastern Wool Markets.

BOSTON, May 25.—The Wool market is steady and firm, with a fair demand. The sales this week are about 2,000,000 lbs of all kinds. There has been considerable doing in fine Wools, including fine Texas, fine Ohio and Pennsylvania, also fine Montevideo and Magdalena. The prices take wide range, as usual at the close of the season, as more or less heavy Wool remains on hand to be disposed of.

BOSTON, May 27.—Sales of Ohio and Pennsylvania Wool have been at 41@44c for X and XX, and choice lots of X and XX firm at 43@44c. Michigan and Wisconsin X fleeces sell at 38½@39c. New Texas has been in demand, and choice lots have sold at 33c and above. Unwashed fleeces have been selling at 25@32c for fine and medium, and selected of the latter at higher prices. California Wool has been quiet, but not much new Spring Wool has yet been received. Sales have been of 50,000 lbs new at 26c, and of 17,000 lbs Fall at 13½@20c. Combing and delaine selections are quiet at 43@48c for fine delaine and fine No. 1 combing, unwashed. Combing Wools are dull and prices nominal. Pulled Wools are in demand and have been selling at 32@38c for common and choice super. Extra pulled is selling more freely at 38@41c per lb, varying as to quality. Foreign Wool is in fair demand at 43½@45c for Australian, 35@36c for Montevideo, 32c for Magdelina, and 35c for choice Cape. Carpet Wools are scarce and quiet, and very little is being done.

PHILADELPHIA, May 26.—In Wool the stock is light and in rather better demand; prices are firm.

BOSTON, May 29.—There is a steady demand for Wool particularly for desirable lots of fine and fine medium grades. New Wool is arriving more freely from California, Texas and Kentucky, and there will be a good assortment offering from all points. Sales of Ohio and Pennsylvania X and XX have been made at 42@44c, and lots not in condition for less. Michigan and Wisconsin fleeces range from 39@41c, the latter prices being for good average. In unwashed fleeces the offerings have been from 25@32c for fine and medium, with choice lots of medium at 33@35c. Combing delaines, quiet at 35@38c for fine delaine. Unwashed combing, dull, and prices nominal. Pulled Wool is in steady demand, with sales of extra at 38@45c; common and choice supers, 32@38c. In foreign Wool there is no change, with some small sales of Australia at previous prices.

New York Hop Market.

NEW YORK, May 20.—The market shows increased strength on all grades of hops. Brewers are not buying in any larger quantities than they have been, nor are shippers making many inquiries; but holders are influenced by the strong feeling in the country markets, the late rather unfavorable advices, as to the condition of the vines, and the fact that the stock of old hops is about exhausted. Of late years we have had a surplus of old hops to fall back on, and every effort to start a boom has unearthed a quantity of these. But it is admitted now that consumers have nothing to rely on but the crop of 1881. The cold, backward spring has been detrimental to brewers, and the consumption of hops up to the present time has been unusually light. But warm weather must come soon and, it will then be found whether or not brewers are carrying as large stocks as they are credited with. At the moment this market has an unsettled, yet generally firm tone. A lot of 400 bales was sold recently at 25½c., and we hear of small sales to brewers at 26c. It is reported that about 125 bales of choice hops have been sold to a dealer at 27c. There are no desirable goods offering under 25c., and several lots are held under a limit of 30c. Advices from the interior indicate increased confidence on the part of holders, with a small business doing at stronger prices. Mail advices from London report rather more doing in Americans at £5, 5s to £6, 10s. *Brewers' Price Current.*

BAGS—Calcutta Wheat Bags for June were offered at 9c to-day and spot lots of Oakland made at 8½c. At the Grain Exchange to-day, 150 bales Calcutta Wheat Bags sold at $8.95.

BARLEY—There has been a good trade in feed and prices are well maintained. Sales were 200 tons No. 1 Feed, June (new), $1.50; 200 do October, $1.27½; 50 do, $1.28½; 100 do, $1.28, and 100 do No. 2 Feed, October, $1.19. At the Grain Exchange this afternoon 100 tons No. 1 Barley sold at $1.25½ September and 100 tons do at $1.26½ October.

BEANS—Bean prices are unchanged.

FRESH MEAT—The change is an advance of first quality Beef, Lamb and dressed Hogs.

HOPS—There is no change here; the New York market is reported elsewhere.

OATS—The market on 'Change was languid, with no spot on inquiry. Bids and offers were: No. 1, October, $1.42½ bid, $1.47½ asked; No. 2, October, $1.38 bid, $1.42½ asked.

ONIONS—The trade is now running on New Onions, at 70c@90c ⅌ ctl; Old are neglected.

POTATOES—New Potatoes are a fraction lower; Old Potatoes are still arriving from Oregon.

PROVISIONS—Hams are higher and Provisions generally firm.

POULTRY AND GAME—The range of prices is much lower, as is shown in our price list.

CORN—Corn rules about as last week; $1.75 is bid and $1.77½ per ctl. asked for Nebraska Yellow.

DAIRY PRODUCE—The supplies are increasing and prices have shaded off a little. Cheese holds its own, and in some cases is quoted a fraction higher.

EGGS—Eggs are steady and rates same as last week.

FEED—Bran is a shade better and quite active, sales being 10 tons spot, $16.50; 10 do, $16.55; 100 do July, $14.50; 50 do, $14.62½; 50 do, $14.75; 200 do November, $14.62½; 100 do December, $14.62½; 100 do, $14.75; 100 do, seller 1882, $13.50; 100 do, buyer 1882, $17. Middlings are quotable $1 higher.

FRUIT—H. A. Basford has sent in the first Cherry Plums this season. New Apples were in market yesterday. Royal Apricots have also put in an appearance. Strawberries still come forward in bad condition. Currants and Cherries were in large supply this morning, and lower prices prevailed. Prices of citrus fruits are unchanged. Some Tahiti Oranges now in are selling well, owing to the scarcity of California fruit.

VEGETABLES—The first Chile Peppers from Stockton this season were sent in to-day from the Napoleon garden. Cauliflower is more plentiful and cheaper. Cabbage is also lower.

WHEAT—Wheat is rather quiet at present. At the Produce Exchange the only sales being 100 tons No. 1 White, July, $1.68; 100 do, $1.68½; 100 do, $1.69, and 100 do, $1.70. For September, $1.68 was bid, $1.70 asked. Sales at the Grain Exchange to-day were 100 tons No. 2, August, $1.65½; 300 do, September, $1.65½; 200 do, $1.65; 1,000 do, October, $1.64½; 100 do, $1.65 ⅌ ctl.

WOOL—Trade is quiet and rather dull in amount this week. Prices are notable a shade lower.

Eastern Wheat Prices.

Quotations of No. 2 grades at leading centers to-day are telegraphed as follows:

	Chicago.	St. Louis.	New York
Spot, ⅌ cental	$2.07½	$2.08½	.....
May	2.09	2.11½	.....
June	2.09½	2.01½	$2.42½
July	2.08½	1.79½	2.13½
August	1.82	1.74½	2.00

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., May 31, 1882.

Eng Standrd Wheat	8¾@ 9	45 inch	9½@ 9¾
Cal Manufacture		40 inch	8½@ 8¾
Hand Sewed, 22x36	8¾@ 9	Wool Sks Hand Swd	
20x36	8½@ 8¾	3½ lb	@47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	@49½
Machine Swd 22x36	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10½	Bean Bags	6½@ 7
Quarters	6 @ 6½	Twine, Detrick's A	32½@35
Eighths	4½@ 4½	" " AA	35 @37
Hessian, 60 inch	@12		

Lumber.

WEDNESDAY M., May 31, 1882

Redwood.

CARGOES

Rough	@18 00	Shingles	@ 2 50
Surfaced	@28 00	Posts, each	15 @ 20
Floor and step	@27 50	**Pine.**	
RETAIL.		CARGOES.	
Merchantable	@22 50	Rough	@18 00
Surfaced, No 1	@35 00	Surfaced	27 00 @28 00
Tongue & Groove	@35 00	RETAIL.	
Pickets, rough	@20 00	Rough	@22 50
do, fancy	@27 50	Flooring	32 50 @35 00
do, square	@17 50	Floor and step	@35 00
		Laths	@ 3 75

Domestic Produce.

WHOLESALE.

WEDNESDAY M., May 31, 1882.

BEANS & PEAS.		Brazil	10 @ 11
Bayo, ctl	2 75 @3 25	Pecans	13 @ 15
Butter	3 75 @4 25	Peanuts	6½@ 7
Castor	3 50 @4 00	Filberts	14 @ 15
Pea	4 00 @4 25	**ONIONS.**	
Red	2 10 @2 80	Red	@ —
Pink	2 50 @2 80	Silverskin	75 @ 80
Large White	3 50 @3 75	do, new	70 @ 90
Small White	4 00 @4 25	Oregon	@ —
Lima	4 00 @4 50	**POTATOES.**	
Field Peas, bⁿk eyed	5 @1 75	New, lb	1¾@ 2½
do, green	2 00 @2 25	Early Rose	2 30 @2 60
BROOM CORN.		Petaluma, ctl	@
Southern	3 @ 3½	Tomales	@ —
Northern	4 @ 6	Humboldts	@
CHICCORY.		" Kidney	@
California	4 @ 4½	" Peachblow	@
German	6½@ 7	Jersey Blue	@ —
DAIRY PRODUCE, ETC.		Cuffey Cove	@ —
BUTTER.		River, red	@
Cal. Fresh Roll, lb	27 @ 29	Chile	@ —
do Fancy Brands	30 @ 31	do, Oregon	1 75 @1 90
Pickle Roll	@ —	Oregon Peerless	1 75 @1 90
Firkin, new	28 @ 30	Salt Lake	@ —
Eastern	18 @ 20	Sweet	@
New York	@ —	**POULTRY & GAME.**	
CHEESE.		Hens, doz	5 50 @ 7 00
Cheese, Cal., lb	12 @ 13½	Roosters	5 00 @ 8 50
EGGS.		Broilers	3 00 @ 6 00
Cal. Fresh, doz	23 @ 25	Ducks, tame, doz	6 50 @ 7 00
Ducks	@ —	Geese, pair	1 00 @1 25
Oregon	@ —	do, young	2 50 @3 00
Eastern, by expr'ss	@ —	Wild Gray, doz	@3 00
Pickled here	@ —	White do	50 @1 00
Utah	@ —	Turkeys	14 @ 17
FEED.		do, Dressed	@
Bran, ton	15 50 @16 50	Turkey Feathers,	
Corn Meal	@38 00	tail and wing, lb	10 @ 20
Hay	10 00 @15 00	Snipe, Eng	1 75 @2 00
Middlings	@24 00	do, Common	50 @ 75
Oil Cake Meal	@27 50	Quail, doz	75 @ 80
Straw, bale	62½@ 70	Rabbits	1 00 @1 25
FLOUR.		Hare	1 50 @1 75
Extra, City Mills	5 25 @5 50	Venison	5 @ 7
do, Country Brands	4 75 @5 00	**PROVISIONS.**	
do, Oregon	4 75 @5 12½	Cal. Bacon, extra	
do, Walla Walla	4 50 @5 00	clear, lb	14½@ 15
Superfine	3 50 @4 25	Medium	14½@ 15
FRESH MEAT.		Light	12½@ 16
Beef, 1st qual'y, lb	8½@ 9	Lard	13 @ 16
Second	6½@ 7	Cal. Smoked Beef	11½@ 12½
Third	5½@ 6	Shoulders	9½@ 10½
Mutton	4 @ 5	Hams, Cal	14 @ 15
Spring Lamb	6 @ 8	do, Eastern	16 @ 17
Pork, undressed	6½@ 7½	**SEEDS.**	
Dressed	9½@ 10½	Alfalfa	14 @ 16
Veal	7½@ 8	do Chile	@
Milk Calves	7½@ 8	Canary	3½@ 4
do, choice	@ 10	Clover, Red	14 @ 15
GRAIN, ETC.		White	45 @ 50
Barley, feed, ctl	1 70 @1 74	Cotton	@ 20
do, Brewing	1 80 @1 90	Flaxseed	2½@ 3
Chevalier	@1 70	Hemp	@ 5
Buckwheat	1 50 @1 75	Italian Rye Grass	25 @
Corn, White	@	Perennial	25 @
Yellow	1 72½@1 75	Millet, German	10 @ 12
Small Round	@1 75	do, Common	7 @ 10
Oats	1 30 @1 67½	Mustard, White	1½@ 2
Milling	2 00 @2 10	Brown	2½@ 3
Rye	2 25 @2 50	Rape	2½@ 2¾
Wheat, No. 1	1 70 @1 72½	Ky Blue Grass	20 @ 25
do, No 2	1 62½@1 65	2d quality	16 @ 18
do, No. 3	1 45 @1 50	Sweet V Grass	@ 75
Choice Milling	@1 72½	Orchard	20 @ 25½
HIDES.		Red Top	@ 15
Hides, dry	19 @ 19½	Hungarian	8 @ 10
Wet salted	9½@ 11	Lawn	30 @ 40
HONEY, ETC.		Mesquit	10 @ 17½
Beeswax, lb	23 @ 25	Timothy	9 @ 10
Honey in comb	14 @ 18	**TALLOW.**	
Extracted, light	9 @ 10	Crude, lb	7 @ 7½
do, dark	7 @ 8	Refined	10½@ 11
HOPS.		**WOOL, ETC.**	
Oregon	20 @ 21	SPRING—1882.	
California, new	22 @ 25	San Joaquin, free	20 @ 21
Wash. Ter	19 @ 20	do, dar	18 @ 19
Old Hops	@ —	do, dusty	15 @ 17
NUTS—Jobbing.		Southern Coast	15 @ 21
Walnuts, Cal	10 @ 11	Stanislaus & Tuolumne	23 @ 26
do, Chile	7½@ 8	Sonoma & Mendocino	25 @ 28
Almonds, hd shl'd lb	8 @ 10		
Soft shell	14 @ 15		

General Merchandise.

WHOLESALE.

WEDNESDAY M., May 31, 1882.

CANDLES.		Cement, Rosendale	1 75 @ 2 00
Crystal Wax	16 @18	Portland	3 75 @ 4 00
Paraffine	20 @	**NAILS.**	
Patent Sperm	25 @28	Assrtd sizes, keg	3 75 @ 4 00
CANNED GOODS.		**OILS.**	
Assrtd Pie Fruits 2½ lb cans	2 25	Pacific Glue Co's Neatsfoot, No 1	1 00 @1 00
Table do	3 50 @	Castor, No. 1	@1 05
Jams and Jellies	3 75 @ —	do, No. 2	@ 95
Pickles, hf gal	3 25 @ —	Baker's A A	@1 30
Sardines, qr box	1 67 @	Olive, Plagnoli	5 25 @5 75
Hf Boxes	2 50½@1 90	Possel	4 75 @5 25
Merry, Faull & Co's Preserved Beef		Palm, lb	9 @
2 lb, doz	3 25 @3 —	Linseed, Raw, bbl	@ 60
do 4 lb doz	6 50 @6 —	Boiled	@ 65
Preserved Mutton 2 lb, doz	3 25 @3 50	Cocoanut	60 @
Beef Tongue	5 75 @6 00	China nut, cs	68 @ 69
Preserved Ham, 2 lb, doz	5 50 @5 60	Sperm	1 40 @ —
Deviled Ham, 1 lb, doz	3 00 @3 50	Coast Whales	35 @ —
do Ham ½ lb doz	2 50 @ —	Polar	@
Boneless Pigs Feet 3 lbs	3 50 @3 75	Lard	@1 00
2 lbs	2 75 @	Petroleum (110°)	18 @ 22
Spiced Fillets 2 lbs	3 50 @	Petroleum (150°)	28 @ 35
Head Cheese 3 lbs	3 50 @ —	**PAINTS.**	
COAL Jobbing.		Pure White Lead	7½@ 8
Australian, ton	@ 8 50	Whiting	1½@
Coos Bay	@ 6 50	Putty	4 @ 5
Bellingham Bay	@	Chalk	1½@
Seattle	@ 6 50	Paris White	2½@
Cumberland	@13 00	Ochre	3½@
Mt Diablo	@	Venetian Red	3½@
Lehigh	@ —	Averil mixd Paint gal	
Liverpool	@	White & Tints	2 00 @2 00
West Hartley	@ 8 50	Green, Blue and Ch Yellow	3 00 @3 50
Scotch	@ 8 50	Light Red	3 00 @3 50
Scranton	@ —	Metallic Roof	1 30 @1 60
Vancouver Id	@ —	**RICE.**	
Wellington	@ 9 00	China Mixed, lb	4½@ 5
Charcoal, sack	@ —	Hawaiian	4½@ 5
Coke, bush	@ —	**SALT.**	
COFFEE.		Cal. Bay, ton	14 00 @22 00
Sandwich Id lb	@	Common	6 50 @14 00
Costa Rica	12 @ 14	Carmen Id	14 00 @22 00
Guatemala	12 @ 14	Liverpool fine	14 00 @20 00
Java	18 @ 20	**SOAP.**	
Manilla	15 @	Castile, lb	9 @ 10
Ground, in cs	@ 22½	Common brands	4½@ 6
FISH.		Fancy Brands	7 @ 8
Sac'to Dry Cod	@ 5	**SPICES.**	
do in cases	@ 5½	Cloves, lb	37½@ 40
Eastern Cod	7 @ 7½	Cassia	19 @ 20
Salmon, bbls	7 00 @ 7 50	Nutmegs	85 @ 90
Hf bbls	3 50 @ 4 00	Pepper Grain	15 @ 16
1 lb cans	1 12½@ 1 22½	Pimento	16 @ 17
Pkld Cod, bbls	@	Mustard, Cal ½ lb Glass	@1 25
Hf bbls	@ —	**SUGAR, ETC.**	
Mackerel, No. 1		Cal. Cube lb	@ 12½
Hf bbls	9 50 @ 10 00	Powdered	@ 13½
In Kits	1 75 @ 1 85	Fine Crushed	@ 12½
Ex Mess	3 50 @ 4 00	Granulated	@ 12½
Pickled Herring, box	3 00 @ 3 50	Golden C	@ 11
Boston Smoked Herring	65 @ — 70	Cal Syrup, kgs	65 @ —
LIME, etc.		Hawaiian Molasses	25 @ 30
Plaster, Golden Gate Mills	3 00 @ 3 25	**TEA.**	
Land Plaster, ton	10 00 @ 12 50	Young Hyson, Moyune, etc	40 @ 65
Lime, Santa Cruz bbl	1 25 @ 1 50	Country pkd Gunpowder & Imperial	35 @ 75
		Hyson	30 @ 35½
		Pekoe Chow O	27½@ 32
		Japan, medium	35 @ 37½

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., May 31, 1882.

FRUIT MARKET.			
Apples, bx	2 00	@	3 50
Apricots, box	1 00	@	1 25
Bananas, bnch	2 50	@	4 00
Cherries, box	—	40 @	— 90
Cocoanuts, 100	6 00	@	7 00
Cranberries, bbl	12 50	@	14 00
Currants, chst	7 00	@	9 00
Gooseberries	—	5 @	— 8
Limes, Mex	8 00	@	10 00
do, Cal, box	2 00	@	8 00
Lemons, Cal, bx	1 75	@	2 50
Sicily, box	6 50	@	7 50
Australian	—	@	— —
Oranges, Cal, bx	3 50	@	4 50
do, Tahiti M	—	@	25 00
do, Mexican	15 00	@	17 00
do, Loreto	—	@	— —
Pears, bx	—	@	— —
Pineapples, doz	8 00	@	9 00
Strawb'r's, chst	4 00	@	10 00
DRIED FRUIT.			
Apples, sliced, lb	—	@	— 10
do, evaporated	—	@	— 12½
do, quartered	—	6 @	— 6½
Apricots	—	21 @	— 22
Blackberries	—	14 @	— 16
Citron	—	28 @	— 30
Dates	—	9 @	— 10
Figs, pressed	—	4 @	— 7
do, loose	—	3½ @	— 4
Nectarines	—	14 @	— 15
Peaches	—	7 @	— 9
do pared	—	18 @	— 20
Pears, sliced	—	9 @	— 9½
do whole	—	7 @	— 8
Plums	—	4 @	— 6
Pitted	—	11 @	— 12½
Prunes	—	9 @	— 10
Raisins, Cal, bx	—	— @	2 50
do, Halves	—	— @	2 75
do, Quarters	—	— @	3 00
Eighths	—	— @	3 25
Zante Currants	—	8 @	— 10
VEGETABLES.			
Artichokes, doz	—	10 @	— 12
Asparagus, box	—	75 @	1 25
Beets, ctl	—	— @	— 75
Cabbage, 100 lbs	—	87½ @	1 00
Carrots, sk	—	50 @	— 60
Cauliflower, doz	1 00	@	1 25
Cucumbers, doz	—	50 @	1 00
Garlic, lb	—	3 @	— 4
Lettuce, doz	—	10 @	— —
Mushrooms, bx	—	— @	— —
Okra, dry, lb	—	— @	— 50
Peas, green, lb	—	— @	— 1½
do, sweet	—	1½ @	— 2
Parsnips, lb	—	— @	— ¾
Peppers	—	25 @	— 30
Rhubarb, bx	—	— @	— 75
Squash, Marrow fat, ton	—	—	@50 00
String Beans	—	5 @	— 6
do, wax	—	5 @	— 6
Summer Squash, box	1	25 @	1 50
Tomatoes	—	10 @	— 20
Turnips, ctl	—	75 @	1 00

Retail Groceries, Etc.

WEDNESDAY M. May 31, 1882.

Butter, California Choice, lb	45	@	55
Cheese	17	@	25
Eastern	25	@	30
Lard, Cal		@	18
Eastern	20	@	25
Flour, ex.fm, bbl	8 00	@	9 00
Corn Meal, lb	2½	@	3
Sugar, wh.crushd	12½	@	13½
Light Brown	8	@	9½
Coffee, Green	23	@	35
Tea, Fine Black	50	@	1 00
Finest Japan	55	@	1 00
Candles, Adm'te	15	@	25
Soap, Cal	7	@	10
Rice	8	@	10
Yeast Powdr, doz	1 50	@	2 00
Can Oysters, doz	2 00	@	3 00
Syrup, S F & old'n	75	@	1 10
Dried Apples, lb	10	@	15
Ger. Prunes	12½	@	20
Figs, Cal	9	@	10
Peaches	15	@	25
Oils, Kerosene	50	@	60
Wines, Old Port	3 50	@	5 00
French Claret	1 00	@	2 50
Cal. doz bot	2 0	@	4 50
Whisky, O K, gal	3 50	@	5 00
French Brandy	4 00	@	8 00

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Santa Cruz, Monterey	Constantine, Monday, June 5, 3 P. M	
San Simeon, Cayucos, Gaviota	Los Angeles,	8 A. M. Wednesdays
San Buenaven'a, Port Harford	Los Angeles, 8 A. M., Wednesday	
San Luis Obispo	Orizaba, 9 A. M., 10, 20 30, each month.	
Santa Barbara	Ancon, 9 A. M., 5, 15, 25, each month	
San Pedro, Los Angeles	Orizaba, 9 A. M., 10, 20, 30 each month.	
San Diego	Ancon, 9 A. M., 5, 15, 25, each month.	

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From **Fourteenth and Webster street, Oakland**—5:57—¶6:57—7:57—8:52—9:52—10:52—¶11:52 A. M. 12:52—1:52—2:52—3:52—4:52—5:53—6:52—10:20 P. M.

From **High St., Alameda**—§5:45—§6:45—7:45—8:38—9:35—10:35—¶11:35 A. M. 12:35—1:35—2:35—3:35—4:35—5:35—6:35—10:05 P. M.

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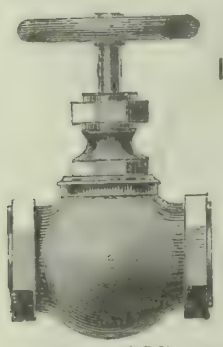

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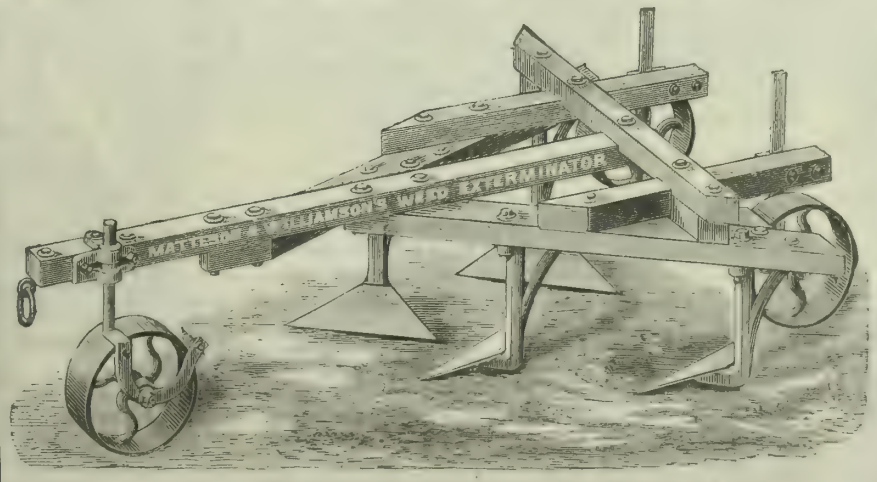

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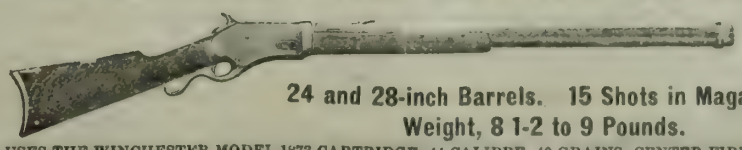

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The gavel is packed and sized in the receptacle, the driver being relieved from the care of stopping and starting the Binder in order to size the bundle. Whether the grain stands thick or thin on the ground, the sheaves are delivered of a uniform size, regulated by the adjusting of the Binder.

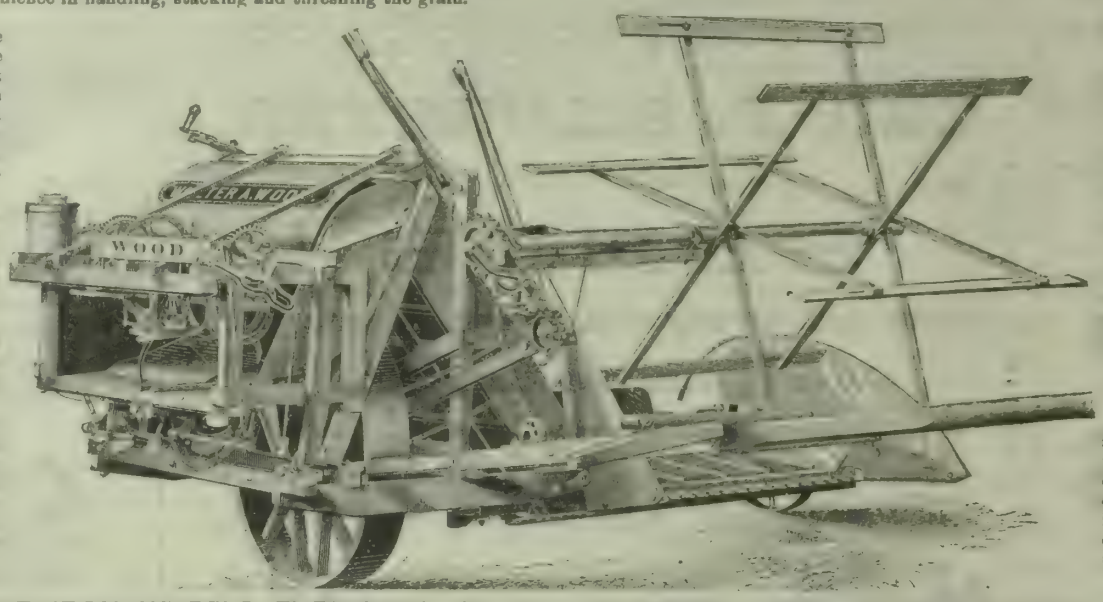
This automatic uniform sizing of the bundle has many advantages. Prominent among them are relieving the driver of the labor of tripping the Binder, an important saving in the consumption of binding material, and convenience in handling, stacking and threshing the grain.

The grain is straightened by the action of the packer as it enters the Binder, so that shapely, compact bundles are made, even where grain is tangled and straw fallen and comes to the elevator in bad shape. Farmers who have used the Wood Twine Binder attach great importance to this feature.

The sheaf is formed and compressed without any strain upon the twine until after the knot is tied, the compressing being effected by means of iron arms instead of tension on the twine itself.

It effects a positive separation of the bound from the unbound grain, and yet deposits the bundle gently on the ground,

The Wood Twine Binder is easily understood and adjusted by the farmer himself, and is a thoroughly practical machine for the grain grower. In addition to those above enumerated, it possesses many other valuable features found in no other Binder.



It is the most perfectly Automatic Self-Binder ever put upon the market. From the time the grain is cut until the time of its delivery on the ground in neatly bound bundles, the driver is relieved of all care of the binding apparatus. It does the work so perfectly that in many cases, the past season, no one has been required to ride on the machine, the driver riding the wheel-horse and the machine taking care of itself. It is only on uneven ground or where the grain is fallen, that the operator is required to ride on the machine, and then only to manage the *Harvester*, the *Binder* always doing its work unaided.

No other Machine possesses these advantages, and farmers who have used other machines, will appreciate them, for with the greatest care upon the part of the operator it is simply impossible, with any other machine, to make bundles of uniform size.

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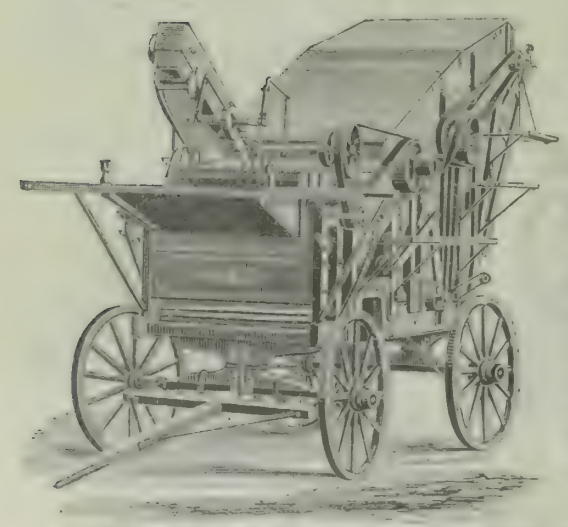
Are the Voluntary Commendations bestowed upon the

New Improved Chicago Pitts Separators,

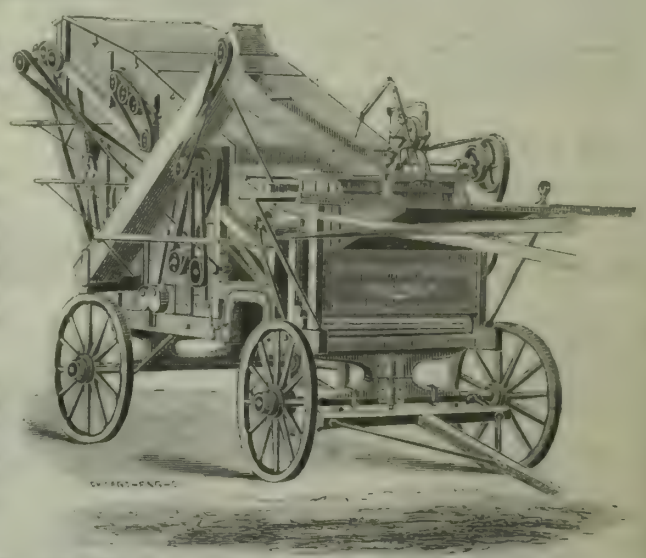
By Threshers and Farmers alike, during and since the past threshing season.



No Grain Separator ever introduced on this coast has met with such general success as attended the introduction of these machines the past season, and the early inquiry for them from all sections proves how widely has their reputation spread.

The Separators we now offer are designed and constructed as our experience has proven they must be, to do the work here required of them in a satisfactory manner and to the greatest advantage, and we now make GREATER CLAIMS OF SUPERIORITY for our machine than have ever been truthfully made for any grain thresher before, all supported by the most substantial evidence possible.

Our new machines are constructed on a scale of EXCELLENCE NEVER BEFORE ATTEMPTED in the manufacture of threshing machines, and far surpass anything ever before offered in this market for strength, capacity, practicability in all their departments and superior finish. **They must be seen to be appreciated.**



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The grain growers of California only need be satisfied that the Improved Chicago Pitts Separators have the following marked advantages, securing to them superior merit, to insist that their grain be thrashed with one of them—the best machines ever put into the field and as soon as they are seen, their wonderful grain-saving and superior cleansing qualities are appreciated.

The cylinder has 10 heavy bars, the usual number of teeth (steel laid) being doubled; its speed reduced, cracking of grain is prevented though thrashing it perfectly; its guard slats and beater back of cylinder doing the separating at the lower end of the machine; the cells of apron being larger, the covering higher, the straw rake longer, having been lessened 2½ ft. in hight, and lengthened 3 ft. over any other machine.

The sills are stronger and are higher to facilitate sacking; the trucks (2½ inch iron axles) have been specially constructed for this coast trade. The shafts are steel and boxes babbitted; the frame securely built to fanning mill, giving it special strength in this quarter.

The patent sheet-iron sieves used in these machines are acknowledged superior to all others in handling large quantities of grain and freeing it from weeds and dirt, never before removed by any machine on the coast.

The screen is constantly in motion, removing wild oats and cheat, and is always in shape to do its work. The sieves are wide and the fans large, neither the sieves nor the elevator becoming clogged.

The machine is fully up to the requirements of California work, and they will handle all that can be got to them, save all the grain and put it in the sack in a manner superior to any machine now in use.

Intending purchasers should avail themselves of the opportunities we hold open for fully investigating into the true merits of our COMPLETE ASSORTMENT OF HARVESTING MACHINERY. Send for our prices before closing your purchase.

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PACIFIC RURAL PRESS

TWENTY-PAGE EDITION.

Volume XXIII.] SAN FRANCISCO, SATURDAY, JUNE 10, 1882. Number 23

The Yosemite.

In the excess of matter, which overflowed even our enlarged space last week, was a reference to the Yosemite valley. We laid it aside, believing that the valley is so grand a natural treasure of California that the tourist could not well overlook it. However, there are matters concerning the great valley which are now of pressing importance, and we choose the present occasion to bring them forward. We introduce the subject with an allusion to the engraving, which gives a distant view of the entrance to the valley, and which is unlike any view which we have previously presented. The stupendous mass of naked granite on the left is El Capitan. Directly opposite on the right are the Cathedral Rocks, with Bridal Veil fall throwing its silver water over them. Whether the visitor enters the valley by way of the Coulterville route from the north, or by that from Mariposa on the south, the first and most prominent object which meets his eye as he descends from the mountain is the towering mass of El Capitan, rising above the floor of the valley about 3,300 ft., with almost perpendicular ascent. The sides or walls are bare, smooth and entirely destitute of vegetation, presenting at the top a sharp, clearly defined edge.

On the other side of the valley is the Bridal Veil fall, one of the most beautiful objects in the Yosemite. The water is precipitated over the cliffs on the west side of Cathedral Rocks in one leap of 630 ft., perpendicular, striking on a sloping pile of debris, down which it rushes 300 ft. more, the total hight of the fall above the meadow at its base being 900 ft.

But descriptions of those objects have been abundant, and we need not reproduce them here. We would present, rather, some new facts concerning the condition and the maintenance of the valley which are worthy of general attention. Last year the Yosemite Commissioners requested W. Ham. Hall, State Engineer, to examine the valley and report any observations which might aid them in the discharge of their trust. Mr. Hall took up the work, and his report has just been issued by the State Printer, in pamphlet form. He disclaims the idea at the outset that there can be any such thing as "improving" a grand work of nature like the Yosemite, and holds that his suggestions will pertain rather to the preservation or maintenance of the grand creation in its natural form. Certain things, he says, are necessary to be done to preserve the valley from deterioration. First, the control of the mountain water-shed tributary to the valley streams, to prevent the destruction of timber and vegetation generally thereon. Second, the regulation of the use of the floor of the valley and its immediate surroundings, in order that the verdure be not altogether trampled out of existence, or useful vegetation supplanted by that less desirable but more able to resist the influences of civilized occupancy. Third, the counteracting of natural deteriorative action to be found in the movement of its waters, the "improvement" of its streams.

The Yosemite grant does not cover nearly all the water-shed of the valley; but, on the contrary, while, according to the terms of the grant, it extends to a line drawn around the valley at an average distance of one mile from its edge, the real mountain basins from which drain the waters that constitute, to most people, the great charm of the place, are altogether outside of the grant, and the rim of high land contained within it is composed, for the most part, of rocky slopes that incline directly into the valley, or to its walls, and not to the canyons and higher valleys from which issue the waters of the falls.

According to the best information available at this time, the entire water-shed area of the Merced river, inclusive of the grant with the valley, east of a line drawn from ridge to ridge across the gorge, at a point on the spur just below the Cascade falls, is about 358 square miles; or, in round numbers, 229,000 acres.

Only about 30,500 acres of this territory are included in the grant as it now exists, leaving 198,500 acres which drain into the valley, and which will, if no steps are taken to prevent it, within a very few years nearly all pass into the hands of private persons, for purposes of sheep and cattle grazing and lumbering. Even now some considerable tracts have been bought up, and the public land surveys are being advanced over the remainder. This water-shed line should form the limits of the grant; all the contained territory should be within the grant, and under control, for it is necessary to protect this region from devastation, in order to insure an efficient preservation of the charms and attractions of the valley itself.

Such action would neither result in withholding a valuable timber body from use, nor in a waste of pasturage. On the contrary, under a wise and independent management the reservation could furnish a goodly supply of timber in years to come without detriment, but with advantage to its forests; and the grazing privilege could be utilized after the first few years to the full extent of the actual food supply above ground—without permitting the destruction of the roots and sods by over-grazing.

EL CAPITAN AND CATHEDRAL ROCKS, YOSEMITE VALLEY.

The difference would be, that the State would have a magnificent mountain property, with one of nature's wonders in its midst; a property yielding an income, perhaps, sufficient to repay all outlay of maintenance and "improvement" of the valley and its approaches, and the irrigators on the dry plains of Merced county below would be blessed with a water supply for irrigation the more to be depended upon, in place of a few persons being enriched by skimming the cream off from the virgin mountains in their occupation as lumber dealers or wool growers.

Passing from the above, the leading recommendation, the State Engineer presents a host of other duties and undertakings which should occupy the attention of the Commission, but which pertain more to the interior arrangements for the preservation of the valley. So far as we are able to judge, we think his recommendations well worthy of attention, and it is to be hoped that the commission may do what is in their power to secure the preservation of the valley and to make its charms more accessible to the throngs who now seek them. More than 2,500 persons visited the valley last year, and each year is expected to show a marked increase, both from our own people and from foreign tourists.

FOREST fires in the mountains of Fresno are causing considerable damage. Seven head of cattle are reported burned to death at one lumber camp.

Choose Clean Men.

We are on the verge of what promises to be a heated and closely contested political campaign in this State. There will be a host of officers to elect, and the scramble for place has already begun with full vigor. There is a duty which now should enforce itself upon the popular mind and press itself home to the individual conscience. We refer to the necessity of choosing clean men—men with clean hands and clean records. There will be unusual scrutiny exercised by voters this year—the tendency has been toward independent individual action in voting for a long time—and at the coming election there will be unusual effort to discern the character, antecedents and connections of the candidates. For this reason any party or organization which selects a man of doubtful qualities for its ticket will have a heavy load to carry. Therefore, now it will be most excellent policy, as well as sound principle, to put forward none but clean men for the various places to be filled.

It will not be enough that men are honest in the sense that they have not stolen, but they must be free from connections and influences which will lead them to act in the interest of private parties, instead of standing up boldly for the public good. The people are calling now for a return to the old times of disinterested public service, and demanding that the choice of men for Representatives because they will bolster or advance some private scheme or enterprise shall cease. Of course, these influences will control many votes, and the patriotic and disinterested voters will have to rally all their forces to overcome private ambitions and elect those who will be, in truth, public servants.

When John Quincy Adams entered the House of Representatives, he owned several shares of the United States bank, but he immediately sold them, on the ground that no Representative should have an interest in any matter that might come before the House for legislation. Times have changed since then. Now a large number of our Representatives are sent to our National and State Legislatures by corporations in which they are interested, or by whom they are "retained," either to make laws in their interest, or to prevent the people from making laws protecting the public interest; in short, to protect class interests—taxing the many for the benefit of the few. It is this modern idea of choosing legislators for private rather than public service which must be rebuked, and there will be a decided disposition to bestow the rebuke this year in California. Hence, let the nominating conventions beware how they award their honors, if they wish to secure popular support.

Seed Growing in California.

The adaptation of California for seed growing has long been proclaimed, and the steady growth of the seed industry is evidence that the favorable conditions here are to be put to profitable use. The character of our summer urges all plants to perfect seed, and plants which seldom indulge in this method of reproduction in some other parts, seed freely here. The requirements for perfect maturing all seem included in our summer climate. Sometimes a thing can be shown most clearly by contrast. We have at hand a paragraph from the London *Pall Mall Gazette*, bewailing the unfavorable quality of the English climate for the production of good fruit and vegetables. The writer says:

> The same causes which give us good meat, however, deny us, in England, the possibility of good fruit and vegetables. For, while the herbage requires copious rain, the fruits, seeds, pods, flowers, buds and other miscellaneous objects which we class from the culinary point of view as vegetables, all require copious sunlight. That is why we have none of them. Our only good vegetables are such as very young rhubarb, seakale, asparagus and celery, which are the blanched sprouting shoots of perennial plants. These mostly come in spring time, and, as they are none the worse, or even all the better, for a little wholesome soaking, they manage to survive our climate well enough in the long run. But most other vegetables are more or less fruity in their nature; and really to taste these, one must go to America or Italy—for choice, the first. Of thorough-going fruity vegetables—such as the tomato—we in England know nothing. We never have sun enough to ripen them properly; and, even with all the appliances of modern gardeners, they never get thoroughly red and soft throughout in our gardens as they do in the open air under a Canadian or Italian sky. They always have a half-green taste, and are wholly lacking in the true rich tomato flavor. These things require the sun to ripen them, and we see his face here, as a rule, for some two and a half hours weekly, as duly registered at Glynde Place, Lewes.

Quite otherwise is California. In fact, with water enough assured at the root, there is nothing to interfere with a perfect development of the top under the full influence of sunlight unbroken save by the revolution of the earth on its axis.

Santa Clara county seems now to be leading in seed growing, although considerable seed farms are being developed in other counties. According to the San Jose *Herald*, there are, between San Jose and Santa Clara, three large seed farms upon which are being grown 500 acres of seeds. Probably one-half of this land, say 250 acres, is devoted to growing onion seed alone, and the balance is divided between lettuce, carrot, beet, parsnip, etc. The climate of this valley is peculiarly adapted to the growth of seeds. The absence of fogs and strong winds while the seeds are ripening is an advantage that the seed growers of the Eastern States cannot rely upon. Rich black adobe land seems to hold the moisture and produce a better crop than the lighter land. Mr. Wm. Meggatt, one of the men engaged in the business, is this season growing a large quantity of sugar-beet seed for the Alvarado Sugar Co. They have, heretofore, sent to Germany for their seed, but Mr. Meggatt is confident that he can furnish them with just as good seed at about one-fourth of the expense. The seed grown upon these farms is mostly sent East, where it is sold to the different retailers, who put it in packages, label it, and send it out to the farmers and gardeners of the United States.

OFF FOR THE WILDS.—On Saturday last, Prof. E. W. Hilgard packed up his budget and set out for a ramble in the wilds of eastern Washington Territory, the object being to rest from the close application of the year, and to inform himself of the agricultural qualities of that new region. We trust he will return full of strength and fresh facts. Prof. Hilgard will be absent about two months, so that his correspondents may postpone their favors. Matters of immediate importance will, however, be attended to by Prof. Dwinelle, who will be within reach during summer.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Lake County Notes.

EDITORS PRESS:—Being a subscriber and constant reader of your valuable paper, also noticing frequent communications therein from this locality, I propose, if you are willing, to say something about the agricultural, sheep growing and viticultural interests of Lake county from my standpoint. As regards crops, Lake county will fully sustain it's reputation this year, of never suffering from drouth. Our hay crop will be an average one and our grain is now promising well. The north winds that injure the plain farms are no detriment in these mountains. Our wool clip this spring is far over the average in quality and weight. I speak advisedly, having sheared in several bands myself this spring. Our sheep raisers lost lambs last winter, but not so large a proportion as sheep men in Colusa and Mendocino. In fact, Lake county wool always brings the highest cash price in the market, and is a very favorable section for raising and keeping large bands of sheep, there being yet much Government land, affording good pasturage, unclaimed.

In regard to our grape interests here, I can also speak intelligently, having worked all winter in the largest vineyard in the county—the one controlled by Mr. R. K. Nichols. Mr. Nichols now has vines planted to the extent of 160 acres on what has hitherto been considered waste land—our chemise hills. These vines are of the choicest foreign varieties of wine grapes, are all doing finely, and have entirely escaped the severe frosts that have wrought such havoc elsewhere. My own little vineyard at home is untouched by frost, and so are all the other vineyards in this locality, namely, those of Voight, Kugrlman and Tremper. In fact, this spring has proven that Lake county is one of the most favored districts in the State for the raising of vines, and the freest from spring frosts.

I do not pretend to write scientifically about Lake county or its future, but, as a plain farmer, I can tell you the truth and facts, and then allow you and your readers to decide if Lake county is not a favored spot and worthy of more consideration than she receives. Once let us get our railroad, so as to have easy communication with the outside world, and we will take and maintain our proper place in the front rank of the sisterhood of the counties.

W. W. FARRIS.

Lower Lake, May 22, 1882.

Notes from Soledad.

EDITORS PRESS:—As I have never seen any account of this blessed county in your columns, I will try and give you some idea of it. We have had the coldest winter on record, I think, from all I can learn. From the 7th of January to the 3d of March we had some 38 frosts, and by the 1st of March, cattle, sheep, etc., could not make a decent shadow without leaning against something, on most of the ranges, but by the 9th of March rain commenced, and within a week we had over four inches—a thing that was never done heretofore, so far as I can learn. So, in all, we have been blessed with some eight inches of rain—our full share and some thrown in, as you will find if you examine our rainfall, as it is usually rather weak here. Since our rain in March we have been visited by two or three very severe northers per month. We had one from the 13th to the 15th of this month which was a scorcher, and left his mark on corn, beans, plums, cherries, etc. The one before closed out all the peas I had, but apricots, nectarines and peaches were too far advanced before the hard blows came. The last one nipped the tops of young peach and apricot trees, and even indulged in biting our "cat's-claw" and poison oak to some extent. As to fruit, apples, apricots, nectarines and peaches are doing finely. Plums were laden too full till our last norther of the 13th to the 15th, and you could count them all in a few days afterward. I think they were too young to stand the last wind. I see in the RURAL of May 13th, Mr. Jessup spoke of curl-leaf on peach. Now, if Mr. Jessup has examined his trees, I think, after all our heavy northers, he could have discovered the cause, for the first peaches of mine came out and got strength, or leaves hardened, before the northers came, and seedlings, clingstones and early peaches never curled a bit; but the Late Crawford came out, and the leaf was very tender when the winds came, and you ought to have see it roll up.

I pulled them off, and they made their reappearance in good faith, but the last wind of the 13th cooked them; so I am afraid there is not enough vitality in trees or fruit to live through it. I have an Early Crawford 33 ft. north of the Late Crawfords, and the leaves were matured pretty well, and it is so loaded that it will break down if not thinned out, and not a leaf curled on it. On the west and south I have seedlings and grafted peaches, and the last norther did not disturb them, but the wind some two or three weeks before curled them some where the trees were not thinned out, and the foliage was too thick and tender, or at about the same stage of growth as the Late Crawfords were when they were caught. The Red nectarines were caught at the same time the first peaches were. If I should give curl-leaf a name, it would be consumption or pneumonia, in place of chills and fever, as some one called it last year. I have no patent on my theory, but I wish all will observe, and I think I am correct, as I have observed every norther this spring, and invariably, when the leaf was tender, or upper moisture low and no moisture from below, they were caught; but it caught the Late Crawford twice in same condition. Plums and cherries were setting firmly till the last norther came, and it literally lifted them off.

You will find a piece in last month's RURAL headed "A Dangerous Curiosity." I think it will explain my theory when vitality is low. One more thing I would like to see done is. one good vineyard set out, say from 30 to 40 ft. apart, and trained and manured according to chemical ash of the plant, and cultivated in fine condition, and see what your phylloxera will do then. Let our chemists give us the proportion of lime, bone, potash, etc., each and every crop needs in proportion of exhaustion. and I think we will be able to exterminate most of the pests.

Our crops are better at the present time than I have seen for three years in and around here. Grain, if the weather keeps cool, will give six to eight centals per acre. Stock is doing finely. Feed is short, but good. The last norther cleaned out the south-eastern part of the county, from what I hear. M. S. H.

Soledad, Monterey county.

THE VINEYARD.

The Vineyards of Southern California.

EDITORS PRESS:—Our vineyards, at this writing, are full of promise. Daily we measure their growth by the narrowing lines between the rows, and are reminded that the last suckering is to be done without delay. Some of us intend to sulphur once more, to make assurance doubly sure, though there has yet been no sign of mildew.

There has been an enormous enlargement of the area devoted to grape growing during the past year, Mr. Nadeau leading with his vineyard of a thousand acres. Another of equal size will belong to and surround the mammoth winery at the Alhambra, near San Gabriel, of which J. De Barth Shorb is manager, only a part has been planted this year. Mr. Mayberry has doubled the acreage of vineyard at El Molino. Mr. Carter has planted 100 acres at the new settlement of Sierra Vista. The Woodburys have 100 acres in grapes upon their mountain slope, near Kinneyloa. Hundreds of smaller vineyards have been set, and are scattered all along the foothills from Los Angeles through the Duarte, Azusa and Pomona to Cocumungo. These two or three enterprising Pasadenans are enclosing a large co-operative vineyard with a concrete wall, and introducing the most improved methods of sub-irrigation.

Still farther eastward the vineyards of Lugonia, Sunnyside and Redlands begin to show, and the acreage devoted to raisin culture has doubled at Riverside. A brother of G. C. Briggs has purchased 500 acres in the vicinity of Pasadena, which will be planted to vineyard in the spring. Extensive improvements are noticed at Orange, Santa Ana and Tustin.

For wine the leading varieties planted this year are Mission, Zinfindel, Charbenneau, Blanc Elban, Berger; for raisins, Muscat of Alexandria and Muscatelo Gordo Blanco. There are a few choice spots, notably one at Orange, where the Muscat reaches the highest perfection. I have never seen as fine Muscat grapes as the McPherson's from any part of the State, except Mr. Cantelow's, in Solano, and the Nickerson vineyard, at Lincoln. Probably there are many similarly favored places in our hot valleys and the foothills, where Muscats may well be thought identical with the raisins of the sun, but they have not come under my personal observation.

Mr. L. J. Rose has planted the Sultana extensively this year, and others would have done so could the cuttings have been procured. With us the Sultana and White Corinth are blooming profusely. Their diminutive berries dry so quickly that however late, there is no danger of losing the crop on account of bad weather; the only reason for hesitation about planting these varieties is that the public taste is not yet educated with respect to their merits. A great many plantations of choice table and shipping grapes have been made this year in and around Los Angeles.

One hesitates to state the simple unvarnished truth concerning the industrial development here, lest the statement should sound like a canard. Do we not remember that the "jewels" of our "Crown of the Valley" were declared to be only paste, and our modest hint of their value an advertising puff in a leading journal? But shall we therefore refuse to answer thus publicly the hundreds of inquiries made concerning this section by those who earnestly desire to make homes here?

"H. H.," speaking of the lack of venture in our California landscape in the hot and dry summers, was cut short by Mr. Short with, "Madam, no eastern meadow ever *dared* to put on the rich green of our vineyards!" And this is true, but I am forced to confess that the price of this incomparable luxuriance is incessant toil. Five times the plow and cultivator have gone over our few acres; there has been one suckering, which means removing the lower buds, hoeing away the earth immediately around the vine and rubbing or pulling off the strong adventitious shoots, which, otherwise would consume the sap which feeds the clusters. Then we sulphured every vine, using for the purpose a capital implement invented by Dr. Congar, a kind of dredging-box, into which a long handle is fitted. One can sulphur about as fast as he can walk with it, but this is the *seventh* in number of our vineyard exercises, and there remains yet one more suckering, and one more sulphuring before the green expanse can be left to Providence, until harvest time and pruning close the annual round. And who knows but the grape worm may yet bring upon us the most disgusting of all the labor of the vineyardist?

This pest has already made its appearance at Orange and Tustin, having apparently bred and passed the earlier stages of its growth in the rank fibre of the unplowed pastures. These drying up, hordes of the worms have been driven by hunger into the vineyards. I have not seen any of the larvæ, but from description recognize it as the common grape worm, *Philampelus satellitia* of De Kay, which we often found upon grape and ampelopsis vines in the Eastern States. We are lighting whatever brush or rubbish we can rake up along the edges of our Pasadena vineyards, just after dark, hoping thus to destroy the moths if there are any getting ready for a crop of worms for next year.

To be forewarned is to be forearmed, and I have been reading up all I could find concerning the *Spaceloma ampelinum*, or black rot, which I am inclined to think has been the trouble with the Muscat of Alexandria grown in some moist localities in the vicinity. If possible we shall send some of the diseased or affected vines to Dr. Harkness for examination. When, last year, some of my neighbors were discouraged from attempting the raisin culture by a statement that good raisins could not be made at the altitude of the Sierra Madre Villa, I resolved to make a special study of the atmospheric conditions which affect the Muscat and Muscatel vines. I find that fog, heavy dew, and especially damp weather, alternating with strong sunshine, are likely to cause mildew on all the fine grapes of southern Europe. Our worst specimens were of Golden Chasselas, which was ruined by it. The Emperor was somewhat affected. We had used no sulphur, did not know that it was necessary. The young shoots were mildewed as well as all the stems and stemlets of the clusters. Not one American grape was touched. I could not discover any of the characteristics of black or grey rot on any of my vines.

The *Revue Horticole* speaks of grey rot as strictly an American vine disease, and one more to be dreaded than the phylloxera, while the black rot was well described by Theophrastus, some 350 years before the Christian era, and has been common ever since in the south of Europe. It appears upon the young shoots in May and continues to increase under favorable atmospheric conditions until August. It may be distinguished from common mildew by the little sound specks or spots of a brownish-black color, which appear upon stem, leaves and fruit simultaneously.

When it attacks the ribs of the leaf it causes the leaf to curl. M. de Barry, a professor in the University of Strasburg, has succeeded in inoculating healthy vines with the spores of the black rot, collecting these upon a damp camel's-hair pencil and fixing them upon the vines. Sulphur is the best general specific against these insidious cryptograms, and it must be applied before they have had time to produce their mycelium upon the epidermis of the healthy shoot. That is the ounce of preventive. If moist, foggy or sticky weather prevails just when the grapes are setting, it is best to shake the sulphur pots again, applying an increased quantity; this is the pound of cure.

Grape worms penetrate the earth to undergo their transformation and the chrysalids will generally be found near the trunk of the vine. Will some one who has studied their habits tell us the depth to which they penetrate? Hogs greedily devour the crysalids of allied species, and if, after harvest, the vineyards could be left to the hogs and the turkeys, it would be greatly to their advantage.

With the increasing importance of the viticultural interest, we must obtain a corresponding increase of knowledge and of skill in its application; otherwise a collapse is inevitable. Nature is generous, but inexorable in the enforcement of her laws. JEANNE C. CARR.

Pasadena, May 24, 1882.

THE TONGUE.—Of the sense of taste, Prof. McKendrick states that the base of the tongue is most sensitive to bitters and the tip to sweets. A substance must be soluble in the fluid of the mouth to create taste, but no definite relation has been found between the chemical condition of bodies and their taste.

MARK TWAIN remarks that all we need, to possess the finest navy in the world, is ships—for we have plenty of water.

THE DAIRY.

Mangold Growing and Feeding.

EDITORS PRESS:—A hundred years ago Arthur Young, in his observations on a tour through one of the counties of England, wrote: "The culture of turnips is ridicule itself; they plough but once, drag in the seed with ox drags, then harrow, and never hoe. The crop may be guessed."

In California I have seen a crop of turnips put in in a similar manner, and if I have not seen mangolds or beets put in so, I have often seen them put in and managed throughout in such a way that the labor spent upon them cost more than the crop was worth, chiefly because of too much hand-hoeing and no horse-hoeing. It is a month since Mr. Johnston wrote us the result of his experience in beet growing. It is evident that he has a lesson to learn on that one subject. I will tell him what I have just had done with 11 acres of land sown to mangolds within the last fortnight. The land will grow, like his, something like four tons of hay to the acre, and when ploughed and let alone, such crops of weeds as would make it very unprofitable land to manage. I will first say that three acres of the above is on a separate farm rented by me this year. A part of the same was sowed with beets last year by the man who then occupied the farm; but the young plants were left, in a great measure, after some futile attempts at hoeing, to the tender mercies of a magnificent crop of weeds, the greater part of which I had the pleasure of plowing under along with the beet plants, for they did not get to be anything else. That is one kind of beet growing that does not pay.

In February the land had an ordinary plowing and harrowing, destroying the first weed crop. In the latter part of April all the 11 acres was plowed 10 or 12 inches deep (destroying the second weed crop), finishing on the 27th. It was well harrowed and rolled and ready for the seed, but knowing the land to be full of weed seeds, it was left in that state till the 10th of May, when it had begun to look slightly green with the third weed crop, which was not plowed under, but destroyed by cultivating and cross cultivating and harrowing till every inch of land was thoroughly stirred and all weeds uprooted that were within four inches of the surface—that being about the depth the beet seed is deposited.

The seed was sown on May 13th, a fortnight ago to-day, and the young plants now show themselves the full length of the row, from one end of the field to the other. They have evidently got the start of the weeds. There will be a few weeds, but not more than can be easily destroyed by passing through with the cultivator a few times on a row, so that two or three good men will easily single out the beet plants to the proper distance, say 18 to 24 inches on the row, and pull all the weeds growing between, on an acre a day. I have had three men do as much as two acres a day when the state of the soil was very favorable.

More horse-hoeing and less hand-hoeing than is usually practiced is what is wanted in the successful growing of root crops. Mine are cultivated once on a row, as soon as the young plants will permit of it; then twice up one side and down the other, and this is repeated, holding a little nearer the plant each time, as often as is necessary, till the plants are ready for thinning, generally going five times, at least, on a row. No doubt some will think that a good deal of work, but when we consider that a man and horse can get over three or four acres a day, twice on a row, and compare the same work with that which could be done by 10 men with hand hoes, we will find the horse work not only cheaper, but much more effective, both in destroying weeds and stirring the ground, for, as a rule, hand-hoeing is nothing more than so much scraping over a certain quantity of ground, and often enough, if the ground is any way moist, one will see the weeds that have been surface scraped putting forth new shoots in a day or two after the operation. Don't give the weeds the first chance, for it does not pay to grow two crops on the land at the same time.

Feeding Value of Mangolds.

As regards the feeding value of mangold wurzel, or beets of any kind, "they are hardly worth anything without something else," as Mr. Johnston says. Hay and beets will fatten full-grown cattle and keep the young ones in growing condition, but for cows giving milk it is necessary to have something besides, like oil-cake or grain, in order to make a good quality of milk and butter, otherwise the milk will be thin, the butter colorless and without flavor.

Mr. J. seems to think it something extraordinary for me to feed beets to my cows for five or six months in the year. I do that because it pays to do it. Whether I have a different way of cultivating than he has or not, I have a way of feeding with less labor, never doing anything more than loading the wagons in the field from the growing crop and scattering the beets over the pasture where the cows, and calves down to a month old, do their own "cutting up." The horses also look out for their share, do the ordinary autumn work, and keep fat on hay and beets.

Mr. Johnston is right in saying that land that will produce only two tons of hay per acre is not fit for a beet crop; but there is one thing that makes such land produce a fair crop

of beets, and, after that, four tons of hay to the acre—that is, plenty of good, fat manure. If we are not so favorably situated in regard to land and climate as is Mr. Johnston, we are probably nearer a good market for the produce of our cows, selling a part of our milk and making the remainder into such butter as brings the highest quotation price in the San Francisco market, and the better we feed the better is the quality of the produce and the quantity greater.

However early in the winter they may have grass in Humboldt county, we have never seen the season here in which a bit of hay, a bit of oil-cake and a few beets did not prove a profitable addition, in the diet of milch cows, to all the grass they could get up to the beginning and sometimes the middle of the month of March. It is a good thing to splice the feed on to the grass season with a long splice; it is a bad thing to put off the beginning of the feeding season till the grass season is over and the cows have failed of their milk. ROB'T. ASHBURNER.

Baden, San Mateo Co., May 27, 1882.

HORTICULTURE.

State Horticultural Society.

The last meeting of the State Horticultural Society was held at the Academy of Sciences, May 26th, President Hilgard in the chair. After the transaction of preliminary business, an address was made by Prof. C. H. Dwinelle, on the

Canker-Worm

The insect now doing so much mischief in Alameda and other counties, and generally called the canker-worm, has several other common names, as "measuring-worm," "looper" and the like, which are taken from its mode of traveling.

The caterpillar is smooth-skinned to the naked eye; has six true legs in front and four prop legs behind and measures off its path, making a loop of its body and then stretching out its full length to take a new hold. It can lower itself from the tree by a silken thread, and when swinging at the end of this, is often blown by the wind to the next tree. In case of tall trees the caterpillars may be thus carried over a distance of two rods or more.

When full grown, the insect enters the ground and becomes a chrysalis, to emerge later as a moth. The most destructive insects of this type have a wingless female in the moth stage. When she emerges from the ground she climbs the tree and deposits her eggs in crevices and under scales of rough bark, lichens and similar protected places. The time at which the moth emerges varies with weather and temperature as well as species of the insect.

The most effecient preventive measure against the common forms of canker-worm is to stop the wingless female moths in their journey from the ground up the trunk of the tree; and this is done by traps which encircle the trunk and stop the insect. A band of cloth or paper smeared with rancid grease or tar accomplishes the purpose. The bands must be examined from time to time to see that the mass of dead worms does not form a bridge over which others can travel safely.

Another point is this, to which I would particularly call the attention of the gentlemen present—that of fighting what are known to be fruit-eating birds. Many birds which are supposed to be injurious, are, in fact, the best friends we have in the fight against the canker-worm. For example, in the East there is the shrike (and they have very close cousins here); people kill the shrike because it has a voice like a file on a saw. There is a case on record of one pair of shrikes destroying all the canker-worms on four or five large trees in that one season. They have tremendous appetites. Then, there are the king-birds, the pawees, the orioles, the blackbirds of all kinds—also the woodpeckers, creepers, and divers and sundry others, many of which are destroyed indiscriminately, either by shooting, or carrying a lantern out at night among the trees and striking down the birds which fly to the light, or by putting out poison which is attractive to birds.

Mr. Shinn asked about the chrysalis condition: Do you know what the nature of the cocoon is? What is their protection?

Prof. Dwinelle: Mr. Klee has been feeding some of these insects in a cage. We discovered a little blackish or bluish chrysalis, a little over a quarter of an inch long. As to whether that is the normal size, I would not say. When not surrounded by natural conditions they go through the changes prematurely, and then small ones may not be a fair sample. The worm goes into the ground, works around and presses back the earth, and makes a little cell of considerable consistency with some secretion from the mouth, making it water-proof. Here it spins its cocoon and goes into the chrysalid state.

Mr. Shinn thought that in plowing and harrowing the land, large numbers might be destroyed. He said: "Two farms near me have been overwhelmed with this measuring-worm. My neighbor, Nichols, has an apple orchard which became infested with these worms. He began early upon them, and syringed the trees; he scraped all the trees, all the old bark was torn off; he syringed them with alkali, and used all the means used for the destruction of other insects. But when the leaves came out, they were covered with the measuring-worm. He then procured another wash of whale-oil soap and a little sulphur and tobacco juice. But they grew larger, and at last he had four or five men employed tapping the limbs and shaking them down. Very recently I passed his orchard, and the trees are *dead*. Mr. Brier has rather a large orchard leased to Chinamen. The orchard is said to have been seriously injured. This shows that it is a matter of grave importance. Last year, in my orchard, there were a few trees that they got possession of and pretty well destroyed. They got into the pear trees and destroyed two or three trees in one row. They destroyed both leaves and fruit. Some of the trees are standing now, and there is not one worm on them. I would suppose they would have appeared again this year. I dug up most of the apple trees, but left one standing. They took possession of this one again this spring. I destroyed what I could and made what observations I could. They were strangers to me, and I wished to discover whence they came and whither they go. When I shook them down I suppose they were three-fourths of an inch long. A few hours after I had knocked them off, I found them with their heads set toward the tree. Give them time and you will find them going up again to find the leaves. The tree is nearly dead. Another thing that is worth while to mention is that a few have been found on the apricot trees; they have done considerable mischief. They like apricot, pear and apple leaves."

Prof. Dwinelle: To keep the insects from traveling after they have reached the larval condition, I would advise trying what has been found efficient with the hairy caterpillar, that is, a line of rancid grease. Mr. De Long, in fighting the caterpillar in his orchard, had bands of butter-cloth put around the trees and smeared them with rancid grease. They would not pass it.

Mr. Jessup: I have been fighting these worms, and did not know it. I came here for information, and am convinced that it is the canker-worm I have been fighting. I saw indications of them three or four years ago. I thought I would fight them. I cleaned the trees—the trees were then old and covered with moss and rough bark. I cleaned the trees up to the big limbs. Then I cleaned them again and syringed my trees with whale-oil soap. I found little shavings of rough bark up in the top, and in examining these I found myriads of little worms. In examining these we could not decide that they were the codlin moth. They were short, dark, active worms. My man came to me and wanted to know what they were. About four or five weeks ago I found some of them crawling up to the limbs, evidently this same worm.

Prof. Dwinelle: I don't think it is the same worm.

Injurious Fungi.

Dr. H. W. Harkness, by request, addressed the society as follows:

Some 70 years since, a pest appeared upon the cherry and plum trees in Salem, North Carolina. It produced sad havoc immediately. For some time it was undetermined whether it was an animal or vegetable parasite. An educated Moravian, who was stationed at Salem, investigated it and proved it to be a vegetable and a fungus. It gradually moved northward, and in the course of 20 years from that time it appeared in Massachusetts as the celebrated

"Black Knot"

Of the cherry and plum tree, and, as you well know, it has done millions of dollars damage in the Eastern States. So far as I know, it has not yet appeared in our fruit orchards. I have made extensive inquiries, and have not found specimens.

About five years since I visited Yosemite valley. In walking out not more than 15 steps from Black's hotel, I found the black knot in all its glory on the choke cherry. I have been anticipating that it might appear in your orchards in a very few years, and stop the production of plums and cherries in this State. Large orchards would suffer. It appears as large as my finger. The bark will be ruptured about the 25th of April. When the bark is ruptured the fungus appears immediately. The bark gradually spreads, destroying the cambium. I have seen places where it was six or eight inches long, and entirely girdling the tree, making a mass three or four times the diameter of the limbs. The plant is known as the *Sphæria morbosa*. Each knot contains eight spores. About the middle of May the spore cavity is ruptured. If they do not rupture, an animal comes in and destroys the fungus, setting free the spores; but in any event, these spores are set free and are all ready for distribution. In the Yosemite valley hundreds of acres are covered with this fungus.

Every means should be employed to avert this threatened danger. We could well afford millions to uproot the wild cherry trees and burn them. In Massachusetts, 20 or 30 years ago, it rendered the production of cherries and plums almost an impossibility, except a few varieties. If it once attacks the trees it will destroy the production of fruit. It cuts off the nutriment by destroying the cambium. In answer to questions, Dr. Harkness remarked that, in using the pruning knife, the germs may be conveyed. They may also be carried on the clothes and in other ways from place to place.

Prof. Hilgard: Are you aware that this fungus exists in Oregon and Washington Territory? The wild cherry constitutes the growth of hundreds of miles. The black knot is almost universal on the cultivated trees throughout that region, between Puget sound and the Cascades.

Curl Leaf.

Dr. Harkness: Another fruit pest is the "curled leaf" in the peach. My attention has been called to it within a few days. This season I obtained some specimens from Folsom, and I find a fungus. It appears upon the cuticle of the leaf, and, passing through it into the leaf, produces the swelling, and so produces the curling. These spores are set free almost immediately. The spores will now be set free in the course of a few days. It is, so far as we know, cosmopolitan in its habits, all over the world where peaches are grown.

There is also a blight on the apple; it is also a fungoid—an oidium which is but the first-born of some other fungus.

Mr. Shinn: How do you account for the fact that some varieties of peach are nearly or quite free from curl leaf. In any part of the world those varieties are always free from it.

Dr. Harkness: I know of no reason, any more than why some varieties of grapes resist the phylloxera, and some persons the smallpox.

Mr. Jessup: The rose blight appeared upon a rose-bush on my place and soon spread across the path to other roses, then got on to a peach tree, and finally got into my apple trees.

Dr. Harkness: As a remedy for fungi sulphur would be the best thing, but it must be applied early so as to reach the first stage of the fungus. Sulphur is not destructive to the rose mildew, unless it is applied very early.

Prof. Dwinelle: I have known of a number of people who have tried sulphur without success. At the Fruit Growers' Convention at Sacramento, Mr. Gillett, of Nevada City, said that sulphur had been tried in the orchards there without success. My Berkeley informant said that a friend at Sutter Creek, in Amador county, had a rose badly affected. She used one pound of bluestone to three gallons of water. All the leaves dropped off, but this year it came out with a profusion of blossoms.

It was remarked that sulphur, if applied at the proper moment, is a sure remedy for fungi.

Fungi on Forest Trees.

Dr. Harkness: Another fungus is the blight on the pine tree. A slight swelling appears upon the bark, and this fungus shows itself of a bright orange. It forms a band round the tree, attacking the soft bark. The tree, naturally fighting to get rid of it, throws out new bark, and in turn new wood, until a great bulge is formed around the limb. It is called the *Peridermium harknessii*, after myself. The first time I noticed it was five years ago.

Mr. Jessup: The first I saw was in 1856, at Shingle Springs. At Monterey there was not a bit.

Dr. Harkness: Another species of it is found in the forests of Sweden, and another in the forests of Bohemia.

One thing further, that is the disease amongst the sycamore trees. I have found the fungus which does the mischief. As I went up the Livermore valley, on my way East, the trees were affected. I was dining with Prof. Gray, and at the dinner table I mentioned the subject. It seems that it has appeared all over the country. Dr. Gray said that he had been observing the sycamores for 30 years; that they suddenly became sick, and have continued so ever since, and vast numbers had been destroyed, notably in the neighborhood of Newport. It is now losing its beautiful arborescent form and foliage. A crop of leaves comes out in the spring healthy, when, all at once, in a single night, all the leaves are withered and become dead by the next day. It kills almost instantly. The leaves turn brown and wither up, and in time a new set of leaves come out.

Mr. Ellsworth told me that so far as he could remember it first appeared in this State about 12 years ago.

Mr. Shinn: About 12 or 14 years ago I had some fine sycamore trees which were affected by this disease. We supposed it was frost, but the next year it was the same thing again. At last we said, it is not frost, it is something else; we do not know now. This year I was again struck with it, and was sure some little insect would be found, but upon close examination I could find nothing. All the leaves I examined were very clean, but were dead. There seemed to be no cause for it, and Dr. Harkness' statement will be received with much interest.

Prof. Hilgard alluded to the use of sulphur as a remedy for mildew, and said that some disappointment came from using pulverized brimstone instead of flowers of sulphur, which is prepared by condensing sulphur fumes. The flowers of sulphur contains much sulphureted hydrogen, which is fatal to fungi. The latter form of sulphur is more expensive than the ground sulphur, but it should always be chosen when treatment of fungoid growth is desired.

W. G. Klee read a paper on various economic plants, illustrated by specimens from the University grounds at Berkeley. We will print Mr. Klee's essay at another time.

As a subject for discussion at the next meeting, Mr. Jessup proposed "Drying and Packing Fruit," a topic, he said, of more importance to fruit-raisers at the present time than any other that could be broached. The society adopted the suggestion, and requested Mr. Jessup to prepare a paper.

Mr. West was requested to prepare a paper on fig culture for the next meeting.

The society then adjourned for one month.

POULTRY YARD.

Still More about Incubators.

EDITORS PRESS:—The person who claims to know all, can not be taught anything; and one who looks with contempt on authority on any subject is more to be pitied for his lack of good sense, than condemned for his ignorance. The gentleman who, in an article headed "More about Incubators," in your edition of May 20th, seems to have had the shoe pinch so hard as to cause him to cry: "Down with all authorities, I care not whom! Down with all automatic regulated machines! And last, but not least, down with Dias, who has had the presumption to differ from a worthy reporter of your staff, and advance an opinion strengthened by the views of those older and wiser than himself in the art of artificial incubation. I have tried them all," he says. If the gentleman would look around, he would find many yet to try in this wide world before his sweeping assertion can stand good. He has imputed to me just what he has done himself—"jumped at conclusions." I would advise him in the future to look before he leaps. His words are as follows: "Now if Mr. Dias had any knowledge of the working of the Pacific incubator, and had not jumped at conclusions." Have I? When I have had, and now have, the Pacific in operation at my works, and will continue to have, until my sole knowledge will extend beyond the views of Mr. Lewis Wright and Mr. Halstead.

As my friend, in his article, has offered to set me right, I will be pleased to receive his latest instructions for the management of the incubator, so that it "will take care of itself, despite the authorities." The result so far is in exact accordance with their views. If the gentleman would answer the questions propounded, and not try to avoid them by speaking about the doors in the machine and their use (a new subject not mentioned in the first article), perhaps those we have could be sifted down. My remarks related to beginners in the art of incubation, and not inventors, or persons who have "tried them all," and consequently know just how to manage a machine and care for chicks.

The subjects touched on were: Situation of thermometer in connection with actual temperature. He asserts, "The object of the thermometer is to tell the temperature of the *source* of heat," by which he proposes to regulate the oven. He further tells me the "thermometer in the water would not show the same temperature as would one laid upon the eggs or suspended directly over them." Now I ask, how did he learn the proper heat to keep the water, in order to have the desired warmth in the oven, if he did not place a thermometer first there, or on the eggs, and by it learn what degree outside would correspond with amount required inside to produce incubation? If it were necessary to have a thermometer inside to teach the proper heat, it was the proper place for it to stay. But the facts are, a body of water will take longer to change its temperature than the air in an oven underneath, and so as to have as little variation in the thermometer as possible (having no regulator in the machine), it was placed in the tank outside. The inside temperature can now fluctuate several degrees without any perceptible change of the thermometer in the tank; hence the object.

The "automatic regulator" he disposes of by the remark: "Not practical, only to catch the eye" (in his opinion).

As for artificial warmth, the inventor has accomplished the most with the box and blanket plan. "If good judgment and watchfulness must come in to keep the chicks from overheating while in the box," and, while out, "when they commence to huddle together, showing that they are cold, they must be taken up and replaced, then covered with a blanket or sack, the thickness depending on their age or the coldness of the weather, and when they become warm again, turned out." (RURAL PRESS, April 15th). A man having 8,000 or 10,000 to handle a season, where is his great repose to come from, of which my friend speaks? While, with artificial warmth of any kind, and the glass house, which I said before was very good, the chicks will at all times, after the first day, find the heat when they need it without assistance, and will not have to be handled, which is in itself injurious. The labor saving can readily be seen, and less knowledge required of a novice. Poultrymen, with few exceptions, will listen to reason. If, Mr. Editor, with your permission, this discussion continues, let it be without ill will and particular personalities. I. L. DIAS.

Petaluma, Cal.

TO MAKE STENCIL INK.—A good and cheap stencil ink, in cakes, is said to be obtained by mixing lamp-black with fine clay, a little gum arabic or dextrin, and enough water to bring the whole to a satisfactory consistency.

A ROAD locomotive for war purposes, lately tried, weighed 28¾ tons, and drew easily 40 tons' weight of guns mounted on their carriages, fully equipped. Its maximum traction power is 150 tons, and its cost of maintenance is about 30 cents an hour.

Patrons of Husbandry.

[illegible] on Grange principles and work and re[illegible] of subordinate Granges are respectfully [illegible] for publication.

Sonoma County Grange Picnic.

The Grangers of Sonoma county held their annual picnic at their hall in Bennett Valley, on the 26th day of May, with a large attendance from both country and town. As is always the case at such gatherings, the hours passed pleasantly, the programme being of a character to impart information and promote good feeling among those assembled to enjoy the reunion. Mr. R. A. Temple presided over the meeting in his usual felicitous manner—conducting the ceremonies to the satisfaction of all. After a song—"Plow, Spade and Hoe"—S. T. Coulter, Overseer of the State Grange, delivered a very fine address in which he reviewed the agricultural interests of the county and State in a clear, forcible manner. Mr. Coulter was followed by Mr. E. W. Davis, who started out with: "I'm a brick, and my Bro. Coulter is a bricklayer," and then he slipped away in the political field, plowing deep into the soil and stirring the sod and the old roots—tearing the brush dams to pieces and scattering the debris right and left.

A song followed, and then the lunch baskets were brought into requisition, and parties sought the shady nooks to spread their cloths and enjoy the repasts they had prepared.

After lunch, and when everybody was feeling as jolly as they could with the knowledge in their minds that some of the boys from town had got away with their strawberries, and the reporter of the *Democrat* had drank all the cream, came the races. A jolly good time was had among the contestants for the several prizes, which were carried off by the following parties: Julius Ort, Jr., Katie Riley, Katie Phillips, W. E. Phillips, Miss Martha Lumdson, W. E. Phillips, Annie Weeks, Samuel Cowen. In the sack race, Wm. Lumdson was the successful contestant. In the old ladies' race, Mrs. Lumdson and Mrs. Storey took the prizes—the contestants being over 50 years of age and exciting a good deal of merriment. Steve Storey, S. T. Coulter and Henry Mutz, then entered for a race, but unfortunately for Mutz his foot slipped and he measured his length upon the ground, but Storey and Coulter ran through, Storey coming out a length ahead and carrying off the prize—a shaving cup—it was a close shave though. Ort said he wasn't in training and wouldn't enter, but he would hold the stakes at the outcome, which he did in remarkably good order; holding on to two pickets and sighting to see who come out ahead. Then the old maids "tripped o'er the lea," two of them coming to grief by measuring their length on the ground before reaching the goal of their ambition. Sarah Lacque carried off the prize.

This ended the sports for the day, and baskets and traps were gathered for a return home by those who did not desire to engage in the dance in the evening, for which about 40 couple remained; and to the music of Park's string band tripped it through the different figures till the grey streaks flecked the morning sky. It was a most pleasant affair, as all such reunions are, under the supervision of the Grangers.—*Democrat.*

Sacramento Grange Reunion.

We accepted an invitation to visit Sacramento Grange on Saturday, May 27th. Accordingly we, accompanied by one of our young Grangers, took the train Saturday morning for the capital city. We found Pioneer hall full of Grangers from the county and the surrounding counties.

The third and fourth degrees were conferred on a class of six brothers and sisters. A most bountiful harvest feast had been prepared in the lower or banquet hall. As in all such efforts, the worthy matrons fairly eclipsed all their former efforts in this line, the long tables fairly groaning with the substantials and delicacies of the season. In addition to the cold chicken and turkey, there were provided hot coffee and tea and other substantials, and as luxuries, strawberries and ice cream were in great abundance and free as water. After the feast the company again repaired to the upper hall, and after some closing ceremonies, the Grange doors were thrown open to the public, and a general good time was had in speech-making and interchange of opinions as regards agricultural and Grange topics.

State Lecturer E. W. Davis was present, and delivered an able and impressive lecture on Grange matters and farm life generally. His remarks were received with applause and evident approval. Next, W. L. Overhiser, of San Joaquin, was called for, and responded in his best style; after which the call for speakers became general and was improved by nearly all present. George Ohleyer, being called out, said he felt sure the audience had had enough of farm and Grange talk, and would not expect him to dwell upon that topic, if he was able, which he was not. He said he came from a debris-cursed section, and up that way the people knew nothing but "slickens," and intimated that if the audience wanted to hear anything on slickens, he would attempt to talk, otherwise he would take his seat. There being a demand for that kind of food, the speaker sailed into the subject and gave about the usual points in this controversy, which was concluded amid a round of applause, showing that the large congregation was in entire accord with the subject and the speaker. After some further business and remarks, the meeting adjourned, when we were at once taken in charge by Bro. M. Sprague and Sister Miss Hattie E. Sprague, and taken to their cosy and comfortable home in the suburbs of the city. We remained over night with them and enjoyed their kindness and hospitality very much.—*Sutter County Farmer.*

Declaration of Public Needs.

The following report and resolutions were adopted by a unanimous vote of the Danville Grange, Patrons of Husbandry, at a regular meeting:

To the Danville Grange—Your committee appointed to suggest and report needed amendments to the State Constitution and Laws in the interest of farmers, and what action, if any, should be taken by the Grange in the ensuing State and county election, to secure them, beg leave to report as follows:

Chief among others, we want an amendment to the Constitution, conferring, in language susceptible of but one construction by the courts, ample power upon the State Board of Equalization to compel an equitable and just assessment of all property in the State subject to taxation.

We want candidates nominated by the various parties for the State Board of Equalization who can be relied upon to do their duty under the law, "without fear or favor."

We want further inquisitorial power given by law to assessors to ferret out and search out property of every description subject to assessment, and a *severer* penalty than is now attached, for owners of property who refuse to give in lists under oath.

We want able and conscientious men elected Railroad Commissioners, who will *study* the problem imposed upon them by the Constitution, and, if need be, regular fares and freights to all concerned, as between producer and shipper, and the transportation companies whose franchises, privileges and property were conferred upon them by the people, to be exercised primarily for the common good.

We want for Judges, upright, impartial and comprehensive men of the people—not land sharks or corporation attorneys.

We want members of Congress, who, while not ignoring or neglecting the claims of other industries, will not lose sight, entirely, of farming interests.

We want members of the Legislature chosen who will, in "spirit and act," favor reform and retrenchment in State and county affairs; men who will look to the sources of revenue as well as its expenditure.

We want the State re-districted, as the Constitution commands, into Senatorial and Assembly districts; not by partisan methods, or in the behalf of any party or clique, but in the interest of fair local representation and the general welfare of the State.

We want a law, as the Constitution directs, for county governments, fixing the terms and compensation of all county officers.

We want such action taken by the law officers, courts and Legislature, respectively, as will restrain hydraulic miners from discharging the debris of their mines into the rivers or tributaries, to be washed down into, fill up and overflow the natural channels, thereby greatly damaging or destroying adjacent farming lands, and impeding and finally ruining navigation in what are declared navigable streams.

These questions, and others of like character, are not considered partisan, but are deemed of vital importance to the well-being of the community at large; hence their discussion is within the scope and province of the Grange. Your committee therefore recommends the adoption of the annexed resolutions.

Resolved, That we, as citizens, should use our influence to nominate and elect to office, men of integrity, who agree with us in sentiment upon these questions.

Resolved, That it is the duty of each voting member of the Order, of whatever political party, to attend the primaries and conventions of their respective organizations, and work for the nomination of such men only as are in sympathy and harmony with the views herein expressed, and who can be relied upon, if elected, to carry them out. Thus, whichever party is successful, our points will be gained.

Resolved, That we will support no man, upon any ticket, who is not in accord; generally, with the wishes and convictions herein set forth.

Danville, May 20, 1882.

Walnut Creek Reunion.—The feast given by the Walnut Creek Grange, last Saturday, was largely attended by Grangers in the vicinity, and by members of Danville, Martinez and other Granges. A choice banquet was spread for the occasion. Political matters were freely discussed by many present, and speeches were made urging the Grangers everywhere to more concerted action for the purpose of securing honest and capable men for positions of public trust. Among those who spoke were Daniel Flint, Master of State Grange; J. V. Webster, Secretary of State Grange; Dr. Strentzel, Hon. D. N. Sherburne, Amos Adams, Hon. Charles Wood, Rev. Mr. Avery, Rev. Mr. Rich, W. C. Pratt, Nathaniel Jones, M. L. Grey, Mr. Logan, and Mr. Carrington.—*Martinez Gazette.*

Grange Reunion at Oakland.

Temescal Grange unites with Eden Grange, of Haywards, in holding a general Grange meeting and harvest feast, in Odd Fellows' hall, Oakland, on Saturday, June 17th, at 10 o'clock A. M. The harvest feast will be given at one o'clock. A public meeting, in which all farmers and others interested are invited to participate, will be held at two o'clock. The Worthy Master and all officers of the State Grange, members of Vallejo Grange, and all Granges in Contra Costa and Alameda counties especially, with all Patrons generally, are invited to be present throughout the day. Able addresses and a pleasant and profitable season are expected. There is "an eternal fitness" in the time—Bunker Hill day—for an inspiring Grange gathering. Let all Granges who can join in the proceedings and swell the grand fraternal circle.

Temescal Grange Meeting, June 3d, withheld action on resolutions concerning the League of Deliverance for further discussion at the Grange reunion, June 17th. Sister S. H. Webster, O. C. Logan and A. T. Dewey were appointed a committee to consider and report plans of organization for a mutual life benefit association, to be submitted to the next State Grange meeting. We think a well-conducted life benefit department and carefully guarded co-operative associations will yet become great pillars of strength in the ground structure of our Order in the near future. The subject of a free market in Oakland for producers was discussed, and O. C. Logan, J. V. Webster and A. T. Dewey were appointed to urge the City Council to just and favorable action.

Grange Social.—Yuba City Grange will have a social on Friday, June 9th. The exercises will consist of music, vocal and instrumental, select reading, speaking and other literary exercises. The refreshments will consist of ice cream and strawberries and other delicacies. All neighboring Granges are cordially invited to be present at this, our last call before the busy harvest season begins. The Grange will be called to order at 10 A. M. Lay aside the care of the farm for one day, and meet your friends and neighbors in social reunion, and let us together render praise to Him who has so signally blessed this portion of our State.—*Farmer.*

The Sackett School.—This well-known Oakland school for boys and young men closed a very prosperous year, by public exercises, on May 19th. The graduates delivered very creditable orations. The principal, Mr. Sackett, then distributed the medals and prizes. For the Harmon gold medal, for excellence in English, decided by the standing in grammar and composition, George L. King and Fred Stanford were so nearly equal that it was impossible to decide which one was entitled to it. The two boys drew lots, and the medal was drawn by Stanford. Other prizes were distributed as follows: Second Harmon prize, Albert C. Phillips; Hathaway medal, for excellence in classics, Harry Wells Sabin; Blasdel gold medal, for excellence in elocution, J. H. Hill; McFarland prize, for excellent conduct in the primary department, Harry Ainsworth; Taylor prize, for excellence in writing, Fred T. Griffith; Haines' prize, for gentlemanly conduct in the family, James A. Crawford; spelling prize, Grant Marden. Rev. Dr. McLean presented diplomas to the three graduates—Harry Wells Sabin, of San Francisco, Fred Wilson Potts, of Los Angeles, and George Hathaway Bixby, of Los Angeles—making a few well-timed remarks. The Sackett school has now on its lists 92 pupils, and is moving to the front in all that marks thorough training.

The Oakland Cattle Sale.—The sale of Jerseys at Oakland, on the 20th ult., went off tolerably well, though very low, as compared with prices at the East, where the average price for some 300 animals at auction was nearly $700 per head. At the Oakland sale $600 was the highest price paid for Blanch Second; the average for old and young was $280. Half-breed Jerseys sold from $75 to $125 and were in demand. The sale shows a growing interest in these choice animals. Since the sale, Mr. Pierce has had many inquiries and sold ten head. The Ayrshires were not appreciated, five of that choice breed selling from $32.50 to $100 each.

"Life Crystals."—*Life Crystals* is the title of a neat monthly journal edited by Mrs. C. F. Young, who has from time to time furnished excellent articles for the Rural "Home Circle." Mrs. Young is a fresh and pleasing writer, with a praiseworthy leaning toward practical themes. In *Life Crystals* she is aided by an able corps of associates, and gives her readers a host of good paragraphs on health and home-life topics. Mrs. Young's address is Berkeley, Cal.

Home School.—We would call attention to the advertisement of the "Home School" for young ladies in another column. The principal is Miss H. N. Field, a lady who has been long and well known for her excellent educational work. The school is pleasantly situated at 1825 Telegraph avenue, Oakland, and has an excellent reputation among those acquainted with its management.

Agricultural Notes.

CALIFORNIA.

ALAMEDA.

Livermore Crops.—*Herald*, June 3: Most of the hay will turn out below the average. The present cool weather is very favorable to crops, and even where touched by the north wind last week, they are recovering strength and brightness. Late-sown wheat will, however, be short, and only summer-fallow will produce a really heavy crop. Many fields of early winter sown are very good, show a bright color, and evince no signs of lack of moisture. The prospect now (provided we have favorable weather from this time on) indicates a grain crop in excess of that produced in this section last year.

CONTRA COSTA.

San Pablo Crops.—Martinez *Gazette*, June 3: The prospects for a large yield of grain in San Pablo valley have never been more encouraging than at present. The amount of rain was ample for this section, and the north winds, which have made such havoc among the grain in some portions of the county, have been harmless here. Large fields of tall, plump grain greet the eye on every side, and a profitable harvest awaits us.

EL DORADO.

Coloma.—*Republican*: One would be surprised to see the amount of permanent improvements going on here; there is hardly a place where there is any available space that the ranchers are not enlarging their orchards and vineyards. Among them I would name Patrick Kane, Joseph Thomas, Frank Hamstalder, Mrs. Murphy, Jonas Wilder, B. F. Edmuns, Wm. Nichols, James Crocker and others too numerous to mention. Their present crops promise to be equal, if not superior, to any they have had in many years.

FRESNO

The Cannery.—*Expositor*, May 31: In company with Thomas E. Hughes, one of the directors of the Fresno Packing company, we were last week shown through the premises now in course of construction for the company's uses, and the details given us by the courteous superintendent, showing the arrangement of the building when finished. It is built in the shape of an L. with a wing or addition on the north side. The main portion of the building is 100x32 ft.; the base of the L 32x68 ft., and the addition 50x32 ft. Everything will be in readiness for the commencement of work by the 10th of June, by which time they hope to be able to commence putting up apricots. The capacity of the cannery, if pushed to its limit, will be about 8,000 two-pound cans per day, and at such time would give employment to about 200 people. Of course the supply of fruit will be too limited to require a very large force this season, but in two years there will be ample to tax its entire capacity. This season the company will put up only fruit and tomatoes, but another year vegetables, such as corn, peas, beans, asparagus and the like will be handled, and it may be that tinned meats, too, will be added to the list of goods put up by the Fresno Packing company. The building is being constructed on contract by E. M. Clifford. It occupies a convenient location on a piece of rising ground at the southern limit of town, on the direct line of travel from the prosperous Central and Washington colonies, and within a stone's throw of the northern line of the popular Fresno colony. The importance of this enterprise can hardly be over-estimated. The day it is started up it will add 50% to the value of the irrigated, or fruit lands of the county, because it will furnish a remunerative market for all the fruit that can be raised, and thus will cause the planting of hundreds of acres of new orchard. The Fresno Packing company was incorporated on the 6th day of March, with a capital stock of $50,000, divided into 500 shares of $100 each. The officers and directors of the company are: William Faymonville, President: M. J. Donahoo, Vice-President; Miss M. F. Austin, W. T. Oden and Thomas E. Hughes. J. W. Hinds as Secretary and Treasurer, and U. J. Stevens as Superintendent. This enterprise is the dawning of a new era of increased prosperity.

LOS ANGELES.

Vegetable Growing.—*Express*, June 3: The shipment of green vegetables from Los Angeles, for some time past, has been of considerable magnitude, and it is steadily increasing. We learn from Mr. Wm. Pridham, agent of Wells, Fargo & Co., in this city, that no less than 10 tons of peas were shipped from this point to San Francisco during the first eight days of April. This large shipment is explained by the fact that the season is several weeks in advance in this end of the State. At present a considerable quantity of green vegetables are sent both north and south. On Wednesday, Germain sent three tons of new potatoes to one order in Texas, while he is shipping large quantities of string beans, squash and tomatoes to a number of both northern and southern points, but mostly the latter. When "garden truck" is in such demand, it seems strange that white men do not take hold more vigorously. This is certainly a remunerative field, and the Chinamen should not be allowed to control so large a portion of this business as at present.

The Laguna Rancho Farming Company.—The articles of incorporation of the "Laguna Rancho Farming Co." were filed to-day at the

Recorder's office in this city. The place of principal business is at San Francisco, with a branch office at Los Angeles. The term for which the corporation exists is 50 years. The number of directors or trustees shall be five, who are as follows for the first year: John A. Paxton, James A. Rigby, Charles H. Simpkins, San Francisco, Cal.; Allen A. Curtis, Austin, Nev.; A. H. Denker, Los Angeles, Cal. The amount of capital stock of this coporation shall be $200,000, and the par value of the shares $100 each. The purposes of this company, fully set forth in the articles of incorporation, show that it is to be an enterprise of very great importance. A large, rich body of land has been secured, lying just outside of the city limits, between the Los Angeles and San Gabriel rivers; there is also an ample supply of surface water, and it is probable that artesian wells can be obtained at a number of points, as there is a large laguna, fed by springs, on the ranch. These facts clearly indicate that there will be no lack of water, which is the only thing needed in this county to thoroughly utilize the lands. The company also control sufficient capital to render it practicable to begin the enterprise at once upon a large scale; and we see no reason why it should not be a splendid success.

THE RESULT OF WORK.—*Commercial*, June 3: Mr. J. W. Cook, who lives four miles up the river, brought in some bunches of barley which were much admired. He informs us that 63 stalks grew from one kernel, and that he had 36 acres of barley as fine as the specimens shown. He also brought in some mammoth samples of Early Rose potatoes, of which he says we will have 1,000 sacks. A few years ago he took the place and was told he could raise nothing; but he has now, besides potatoes and barley, gum trees three years old and 37 inches around. He has two water privileges but has used neither. He cultivates from one to ten times a year and has always had good crops.

FLORENCE HAY.—Cor. *Mirror*, June 3: There will be but little grain harvested in this locality, as most of the barley has been cut for hay. Mr. Turner commenced baling to-day, and is loading cars for Arizona. Others will begin in a few days. All who have hay will get a good price for it this year, and there will be large quantities shipped from this place.

MENDOCINO.

HAY AND GRAIN.—Ukiah *Press*, June 3: The harvest outlook is moderate for hay and grain, north winds having injured crops very much. Notwithstanding the large acreage in grain, some of the best informed predict a short crop. Considerable grain will be cut for hay, and hay will generally be light. Smith & Morrison bought 100 tons last week, paying $7 for loose and $10 for baled. They also paid one cent for barley and one and one-eighth cents for oats. At these figures they took all of T. J. Fine's surplus.

SANTA CLARA.

FRUIT DROPPING.—Gilroy *Advocate*, June 3: Mr. Cordes, one of our leading fruit and vine culturists, tells us that almonds and apricots of large size have, since the late frosts, dropped from the trees. The crop will be light, and prunes, plums and peaches will be scarce in most of the orchards.

CROPS.—San Jose *Mercury*, June 1: Late sown grain will yield at least half a crop (provided no further damage is done), and that which was sown earlier will, in many instances, yield a fair average harvest. Wheat may not do as well as barley. The latter will, at all events, be the best grain crop of the season. The acreage is large and the growth is vigorous. Along the Coyote, barley is ripening and presents a gratifying appearance. Only one field, so far as heard from, is ripe enough to cut. On Judge Archer's place, a mile and a half southeast of this city, an 18 acre field is now being cut with a McCormick twine-binding reaper. It is estimated that the field will average 25 bushels per acre of bright large barley. The prospects for good prices were never better, at this season of the year. Mr. Wiley, lessee of Judge Archer's farm, stated yesterday that he understood $1.50 had been already offered for barley, June delivery. The short crop of wheat in the San Joaquin valley will probably have a tendency to elevate the San Francisco markets for breadstuffs.

SAN JOAQUIN.

LODI CROPS.—*Sentinel*, June 3: Mr. C. R. Dodge, of New Hope, reports that, on the lowlands about the Pocket, crops are promising a good yield. Upon the high land, however, grain is ripening too rapidly to fill well and the yield will be short. Mr. Wm. Ennis, of Elliott, takes rather a gloomy view of the crop prospects in his vicinity, and thinks that the yield is seriously shortened. He says that across the river, upon the red land, a great part of the grain is hardly worth cutting for hay. Thos. Jones informs us that between Woodbridge and New Hope considerable corn is planted, which is looking strong and doing well. Mr. El. Sherman, of Acampo, thinks that farmers in his vicinity have less to fear now than some weeks ago. His crops are filling nicely and will yield him an average crop.

SANTA BARBARA.

SANTA MARIA CROPS.—*Times:* While the general crop prospect in the lower part of the valley is not so good, yet there are some fields of very fine barley. Mr. John Shuman has 500 acres, very fine. Mr. J. Preston has a large field which will make a good yield of plump barley. Others also have good prospects. C. W. Merritt, R. Guthrie, Mr. Scott and others from Guadalupe were in town yesterday, and they state that the prospect for a summer crop is very fine, as there is plenty of moisture in the ground. A number of farmers to the south of town and up the valley report the crop prospects as good as, if not better than, last year.

SAN BERNARDINO.

RIVERSIDE CANNERY.—*Press*, June 2: Work on the cannery buildings is progressing rapidly. The frame-work to the different buildings is about done, and one of the main buildings is nearly enclosed. By another week the buildings will probably be nearly if not quite ready for occupancy. A large force of men, all that could be secured, are at work and the work will not lag. The tinners commenced work on Wednesday. There are three of them at present, with three boys as helpers. They will turn out 3,000 cans per day on an average, and the number can be increased if desired. They are making a good can, one that will stand all tests. The labels are being printed by one of the best lithographing houses in the United States, and will be the handsomest ever issued by any cannery on this coast. The boiler is already here and on the ground. The cannery will give employment to about 150 hands during the busy season.

SAN LUIS OBISPO.

THE SEASON.—*Tribune*, June 3: The reports from the grain fields of this county are most encouraging, the favorable weather of the past two weeks having wrought a marvelous change in the aspect of affairs. All the farming country on the coast side of the Santa Lucia range is looking exceedingly fine and giving promise of a more than average harvest. A gentleman who has just arrived from the extreme southern portion of the State informs the *Tribune* that the crops in the vicinity of this city, and between this city and Los Alamos, in Santa Barbara county, look better than they do anywhere between San Diego and Los Alamos. This statement is verified by others who have recently been over the same ground. The severe frosts which visited all portions of the State a few weeks since, with such serious effects upon fruits and vegetables, touched this section lightly and did but little damage. We learn of one small vineyard in the foothills which was badly nipped, but that is almost an isolated case. Every fruit grower with whom we have conversed reports the promise of an unprecedented yield in all kinds of fruit. In the early part of the season it was thought there would be a scarcity of hay, but the result is exactly contrary to popular expectation. It is doubtful if there has ever been more hay made in any one season than there has been this spring, and there has certainly never been a more favorable season for curing hay; consequently the entire crop is of the very best quality. As to the condition of the crops on the eastern side of the mountains—the dry belt—we have not received definite reports, but all information is to the effect that the outlook has improved during the past two weeks. The great stock ranches appear to have all the feed necessary to carry the cattle and sheep through the year. The dairy interests have not been as prosperous this year as last, owing to the shortness of the season. A large amount of fresh roll butter has been shipped, however, and as prices have ruled high, the dairymen have more than held their own. The owners of marketable cattle have been very fortunate this season. The earliest fat cattle for the spring market were found in this county, and during last month the county was visited by several of the prominent buyers. It is estimated by competent judges that upwards of $150,000 have been paid for cattle in the county since the season opened, about six weeks since. Thus it will be seen that San Luis Obispo county is second to none in the variety of her resources and the measure of her prosperity.

SONOMA.

THE WEATHER AND THE CROPS.—Santa Rosa *Republican*, June 3: Hay and pasture, on account of the light rainfall, will be short. Wheat received a check during the prevalance of the north winds in May. But, for some weeks since they ceased, fogs and cool growing weather have brought crops forward immensely. It is now near harvest, and we look forward to gathering more grain than the average yield. There has not been as good a prospect in Sonoma county for several years. Damage to the vineyards by the May frosts may now be reasonably estimated at a diminished yield of about 15 %. Few vines are killed outright, as new buds are beginning to push forward. The only fears at the time of the cold nip, were for the young vines having small and insufficient roots, without vitality enough to sustain growth when the few tender leaves were killed. But, happily, these apprehensions were unfounded.

CASSIDY'S ORCHARD.—Petaluma *Argus*, June 2: The orchard home of J. W. Cassidy is near the northern limits of Petaluma. This orchard is far-famed for the excellence of its fruits—especially of its cherries and plums. The 800 cherry trees are about equally divided between the Gov. Wood, Black Tartarian and Napoleon Bigerrean varieties. Aside from the cherry trees, Mr. Cassidy's orchard numbers 900 plum trees, 500 apple trees, 75 Bartlett pear trees, 2,000 grape vines, together with quite a planting of blackberry and raspberry vines. On all these trees and vines there is promise of a very heavy yield of fruit, with the exception of the Bartlett pears, which will not be to exceed half a crop. The grape yield is also most promising. it is worthy of note that in this orchard, and those surrounding it, the grape vines show no touch of frost. The bark on Mr. Cassidy's trees has that smooth and glossy luster indicative of perfect health and freedom from damaging fruit-tree parasites. This healthy condition is measurably due to every tree having been treated last fall to a spray bath of caustic soda. The good effects of this treatment is markedly noticeable on the apple trees. These trees had for several years received secondary care, and consequently were mossy and unproductive. This year they show a smooth and healthy bark, and, as a consequence, will groan under their weight of fruit.

SANTA CRUZ.

SCOTT VALLEY.—*Courier Item:* Notwithstanding the recent frosts and the north wind, which is drying up the ground and sending the crops back to mother earth again, the farmers are looking forward hopefully for good times, and with the late genial showers of rain a fair harvest may yet be reaped. Late-sown grain has been irretrievably damaged by the frosts, and the same discouraging reports come from other quarters, and under the most favorable circumstances there will not be more than a two-thirds crop. Cheese and butter making is booming, and the make is of a splendid quality.

SUTTER.

HARVEST NOTES.—Yuba City *Farmer:* It was our good fortune to accompany J. B. Wilkie last Friday afternoon on a trip down the river to Squire Hull's and thence up the road away from the river, so as to get a good view of the growing grain. The grain averages well. In some places we saw barley that had a very brown color, and here and there a field of wheat that had come up rather scattering, but the large acreage will compensate for this, and will doubtless enable Sutter county to produce an average crop. Some fields of wheat are as promising as were ever planted, and the bulk of the summer-fallowed will yield well. There is much more barley in this year than usual, in consequence of farmers having to sell their wheat at about $1.30 last year, and purchase feed at from $1.65 up. Haying is progressing, but the small area cut will render it none too plentiful. Heading has commenced. G. R. Summy, of South Buttes was the first to commence, and began operations on Tuesday morning, in a 130-acre field of barley. He says the yield will be good. George M. Saye commenced heading a 100-acre field of barley on Wednesday. He says, although the heads are short, the barley is as plump and perfect as can be. It will be ten days or two weeks before the harvest is in full blast.

TEHAMA.

NEW WHEAT.—Chico *Enterprise*, June 3: Wm. Eagan, a farmer of Tehama county, has succeeded in developing two new varieties of wheat, some of which he is now growing on his ranch, near Red Bluff. They are known as the "Pride of England" and "French Wheat." The former is bearded and the latter has smooth heads. The wheat was sown in winter and has just passed out of bloom. The heads will average about four inches in length. The seed was obtained from Mr. Shaffer, of Yolo county, who sowed last year one sack of each of the varieties above named, on thin land, and harvested 92 sacks from about three and a half acres. The wheat weighs about 140 lbs. to the sack.

YOLO.

WINTERS CROPS.—Cor. *Democrat:* With the unprecedented changes of the weather, it is not probable that we will have more than half a wheat yield, with an average crop of barley. Some think this is placing the wheat yield too low; but it will undoubtedly fall far below the outlook of one month since. A large crop of hay in good condition has been harvested and mostly secured under shelter. The heading of barley is going on pretty lively; the cutting of wheat will commence with the last of the week.

YUBA.

HOSKINS' ORCHARD.—*Appeal*, June 3: The Taylor almond orchard, now owned by R. Hoskins, is expected to produce more almonds this year than it ever did before. The crop will probably not be less than five tons, which, at $300 a ton, is equal to $1,500. The orchard has never been very prolific. A full crop, with all the trees bearing well, would be worth about $15,000. There are three varieties of almond trees on the place, one of which is non-productive. There would be money in almond growing if the crop were sure. It is seldom that a good crop can be secured. Mr. Hoskins has grafted a large number of the trees with apricot and French prune stock, and proposes to gradually convert the almond orchard into a fruit orchard, believing that there is more profit in fruit than in nuts. It will take several years to complete the change. At one time this season he supposed that the reason why many of his almond trees were not doing well was because of the depredations of the "red mite," a minute spider which infests the trees. He has found, however, by close study of the insect, that it does much less harm than it is credited with. He has purchased 1,300 lbs. of lye with which to make an insecticide for his orchard, but his investigations led him to believe that its application to the trees was unnecessary, and he still has the lye on hand. He studied the insect and its work closely with the microscope, and concluded that it is comparatively harmless. Matthew Cooke has told him that the spider formed a filmy web over the leaves and destroyed their vitality; but all the infested leaves he examined were healthy and showed no trace of any film. Mr. Hoskins says many of the shade trees and much of the ornamental shrubbery in this city are infested with some one or other of the insects against which a crusade has been begun by fruit growers. He has no faith in quarantine and other measures for the protection of orchards when the insect pests are spread over the country through the shade and ornamental trees. He says that many of the oleander trees in the gardens of Marysville are overrun with the white scale, which is doing great injury. In his own orchard he believes the trouble is not so much due to the work of insects as to the want of thorough cultivation. For some time before the orchard passed into his hands last winter it had been greatly neglected.

ARMY WORMS.—The army worms that were threatening to invade the city a fortnight ago have disappeared as suddenly as they came. The presumption would be that they had eaten each other up, as army worms sometimes do, were it not that there is an abundant supply of green food for them on the willow trees where they hatched out. Perhaps a second generation of the the insects is about to come forth. A cursory examination of the willow trees along the southern end of the bridge yesterday, revealed only one mature army worm, and that one was not marching, but, as it were, "standing at ease" upon a willow twig.

TULARE.

CROPS.—Visalia *Delta*, June 2: Grain prospects are growing better every day. In the vicinity of Grangeville, the yield will be in many fields as large as last year. Wherever the soil is free from alkali wheat is growing and filling rapidly. Along Kings river, about the head of the Mussel Slough ditch, there will be a full crop. Messrs. Misenheimer Bros. anticipate a larger yield than last year, and Thomas Boyd will not be far behind. Messrs. Clark and Dawson, on the Thornton ranch, rejoice in the prospect of a good harvest, and wherever there is water and no alkali, the yield will be a fair one.

MARRIED.—We learn by cards, and by the Chico *Enterprise*, that our esteemed friend, J. H. Wheeler, Secretary of the Viticultural Commission, has doubled his joys and halved his sorrows by marriage with Miss Franc V. Jones, daughter of Mrs. George F. Jones, of Chico. The wedding was brilliant, and attended by a pleasant company of relatives and friends. Our sincere congratulations are extended to all concerned.

HEALD'S THRASHING MACHINERY.—Heald's Agricultural Machine Works, at Crockett, on the Straits of Carquinez, have started up on straw-burning engines. About 30 are in construction; fifty men are employed. More machinery will soon go in to make grain separators.

News in Brief.

A CRATE of Florida peaches sold in New York at 75 cents apiece.

THE Washington monument has reached a hight of 270 ft., 20 ft. of stone having been added since May 1st.

MEXICO has taken a great step in advance by abolishing the custom house lines between the States of the republic.

NEW ORLEANS is experiencing a building boom, over $2,500,000 having so far been invested in new buildings the present season.

A REPORT comes from Fort Sisseltón, Minn., stating that 35 lodges of Indians are encamped within three miles of the fort, and are without food.

THE number of deaths recorded at the Health Office during the month of May was 465, against 349 the same month last year, being an increase of 116.

ACCORDING to the school census, just completed, there are 5,248 children of school age in the city of Los Angeles, including 68 Chinese children.

JACKSONVILLE, Fla., has just made its first conviction under the new law prohibiting the inter-marriage of whites and blacks. The culprit was fined $50.

DAKOTA is getting up steam on the prohibition question, and means to have a fight about it when admission comes and it holds a constitutional convention.

THE experiment of operating an elevated railroad by electricity, which was recently successfully tried in Berlin, is to be attempted in Chicago at an early date.

THE situation among the strikers at Newburgh, O., is unchanged. Only about 300 are at work, the strikers having dissuaded the others by some means from working again.

THE remarkable fossil track in the sandstone State prison yard, Carson, will be examined by Prof. Joseph Le Conte, of the California University, who will visit Carson for that purpose.

THE railroad company is about to make extensive improvements at Vallejo junction. A wharf several hundred ft. in length will be built, and other valuable improvements will be made.

BUFFALO is really inclined to be in earnest about digging a tunnel from below Niagara falls to give water power, and has appointed a committee to consider this "bold but not wild idea."

THE officers at Castle Garden say they have never known steerage passengers to bring such a quantity of things and so many trunks as this year. Most of the men are skilled mechanics.

Mother's Work.

Dear, patient woman, o'er her children bending,
To leave a goodnight kiss on rosy lips,
Or listen to the simple prayer to God ascending
Ere slumber veil them in its soft eclipse.
I wonder doth she dream that seraphs love her,
And sometimes smooth the pathway for her feet;
That oft their silvery pinions float above her,
When life is tangled and its cross-roads meet?

So wan and tired, the whole day long so busy,
To laugh or weep at times doth hardly know
So many trifles make the poor brain busy;
So many errands call her to and fro;
Small garments stitching, weaving fairy stories,
And binding wounds, and bearing little cares,
Her hours pass—unheeded all the glories
Of the great world beyond the nursery stairs

Summer Life and Reveries.

(Written for RURAL PRESS by IRWELL.)

I do not mean the plowing, harrowing, planting, etc., which comes to every farmer's life, meaning more or less, according to the inclination and means of the farmer. Few have any vegetable or flower garden, believing them to be a waste of labor and space to bother with; yet why should we not give some time to the cultivation of what is both useful and beautiful?

A garden patch of onions, peas, beets, radishes, lettuce, etc., is certainly a charming sight, when well kept and cared for, appealing to the "inner man," also, in a very forcible manner about noon-day, after a tedious ride in the sun, or a half day's work in the field. And who can reject the gay rose bush, honeysuckle, lilac, pink or sweet pea vine, from a place near our farm houses? So very little care, too, as they require, when once well rooted. One of the gayest shrubs in our mountain-top garden is a Scotch broom, full of bright yellow bloom, from early spring until fall, when the pods of seed burst and feed birds and chickens for weeks.

Out of Door Apartments.

But, aside from garden making, comes another way of preparing for our mountain-top summers few know anything about, and yet, if they once tried the plan, might find much enjoyment, and, better still, health in the trial. It is the making of out-door sleeping rooms, tents, "bungalows" or cloth rooms—anything for out-door sleeping accommodations. The one we are now finishing, is entirely of tree branches, first tying timbers from one tree to another, and standing against these are branches 10 ft. high—these weaving smaller ones in until the whole mass is dense enough to keep out wind and prying eyes. Inside, the ground is leveled off and an old carpet spread; then beds, chairs, tables, hammocks, or what you please, are placed in order, making, in our clear, fogless, mountain elevations and pure air, a very comfortable room. The ceiling can be clothed or left (as the one I mentioned above) with the interlacing boughs of the living trees overhead forming the square, in which the birds sing their young to sleep each night and give you a morning carol, also. To make such a retreat truly comfortable and picturesque, let the bed be a spring mattress, with legs nailed on. Then, for dressing table, have a box with a shelf in, and curtained with blue or pink calico or muslin, pleated on. Let the spread be of the same material; also, a three-cornered stand with all the toilet outfit, marbleized tin basin, and kerosene can fixed as a waste water-pail. A very comfortable chair can be made of boards, cut so as to form back, seat and legs; and one thing most necessary of all is to provide plenty of seats, in case guests drop into your "sanctum"—having all comfortable and all pretty to look at, too, if draped in the same color; they give a fine effect to the green walls or brown of faded leaves. A clothes line, running two sides of the room, is very convenient for hanging garments upon. You need have no fears of spiders if your bed is off the ground. Such a room is always well aired, and gives the lungs a chance to purify the blood.

Invalids should try and secure just such out-door accommodations, with good, wholesome table board, and be willing to pay double the price for it, too, as it will be *years of life* to them, perhaps. Two years ago our family of five camped out for four months of the summer, and not a soul had a cold during the time. Mr. H. was a consumptive, too, and extremely delicate, feeling every change of the weather keenly, but the pure air gave him life; and this summer we are preparing several such "bungalows" for our family and friends who may visit us and prefer out-door accommodations.

Life Problems.

I fell to moralizing to-day in the hammock under the huge oaks, as listening to the song of the birds, the murmur of the insects, and hum of bees, all busy in their way, but each giving a song of joy for life, as they find it, be it humble, disappointed or gay. They take it as they find it, and give thanks with a song, while man alone is full of envy, greed, overwork, regret, and full of sorrow—often "the saddest when he sings!" Why is it? Can it be that "our civilization is a curse," as is said?—that our ambitions are vain and empty, and our toils, duties and lives are a failure, giving nothing for which we seek, and depriving us of what little we might enjoy, had we health and time to enjoy! The rich men are so engrossed in their affairs as to care but little for the rare and costly palaces they inhabit. Home it seldom is, indeed, to those engaged in the rough scramble of money making.

The richest, according to the old saying, cannot more than enjoy enough to eat, drink and wear, and many a poor one can do that, if only content, happy and healthy. Let the wealthy burden themselves with cares of fine and costly whatnot. So long as they use their gold for the benefit of art and give employment to others it may be well, but I claim that he benefits himself the most who most benefits mankind; and fine houses, rare pictures and costly turnouts are apt to breed selfish discontent and envy among the set they move in. Others, endeavoring to have as fine or finer establishments, jealousy and heart-burnings ensue, while the only real benefit is to the artist or artisan who build and beautify such homes.

Simple lives are the happiest, because most natural. If all surplus wealth could be devoted to the education and home building of our poor millions, uplifting the over-worked, weary-hearted, sick and hopeless, and giving them what they could keep themselves with, how long would it take to bring a millennium?

It is claimed that all men are lazy. Grant it. Can you show me the person not willing to do a fair day's work, provided it be of a kind he is fond of doing? If every one was willing to, and *did* his share of duty, no one would be overworked. As it is now, the drones of society make others do their part of the world's duties. To be sure, they give back the sordid gold for it; but can gold pay for life itself? And yet, if it is death by starving or overwork, which shall it be? Oh, ye rich and mighty! why will you willingly sacrifice human lives that you may live in pretended ease? Why not make the world better for your having lived in it? The really and truly rich man, is he with a disposition to benefit others, while he supplies his own few wants? If you love art, open a free gallery to all, rich and poor alike. If your library is a gem, open it to the student and the mechanic, who will appreciate with you its merits. Don't build palaces and keep boarding-house for servants, paying them for staying with you. They who have few wants have few, but true friends, and can enjoy all they can see about them, are best fitted to be happy in this sphere of ours and for the summer life to come.

Deer Ridge Farm, near Alma.

Leaflets from the Margin of Lake Tahoe.

(Written for the RURAL PRESS by M. E. O. W.)

Didn't Mr. Berwick do a graceful thing last week, in answer to the delightful cudgeling he received from the gifted Mrs. Nichols? It was so bravely acknowledged and accepted that we almost believe Mr. B. is a man with an honest heart, and perhaps, if he had a chance, would "repeal and purge" the laws that men have made for women to obey—laws that keep us in bondage; laws that hold matured women equal with children and idiots; laws that speak of liberty and freedom, yet tax us and oblige us to pay these taxes without representation. I have read, somewhere, that such a course was tyranny, and believe it is, though the thought looks like strongmindedness. I would actually hate to be weak in any way. There are a good many of us who wish Mrs. N. would write the letters Mr. B. suggests and point out, or rather blot out the disgraceful statutes. Would Mr. B., after the wished-for letters were written and he in office, say, "that was what I promised before election," as so many others have done?

Judge Story says that the law relating to women tends to make every family a monarchy; the husband king, or despot, the wife dependent, serf or slave. It does seem to me that the law-makers have nothing to be proud of in the laws, if they did make them. But times are brightening for us. "Thirty years ago women could only cook, sew and teach; now, not a trade, hardly, but has women in it." They are even successful farmers—the most delightful of occupations. Perhaps, by the time 17 more centuries have passed, we shall be allowed the same wages given our brothers for the same work, and have a "say-so" about our taxes. We are certainly becoming civilized.

Every week, when the RURAL PRESS comes, we feel like telling the whole world how truly good it is, and we do wish that the "Home Circle" might be made bright more often by the presence of the scores of old contributors who know how to say such pleasant things. The selections are always just splendid, but the papers that come from live brains, right from home, are so readable, and help us all so much.

Our "house cleaning" is over for this time, and we are waiting for the snow to melt. I read Clara D.'s "House Cleaning," and it was good, but didn't that "lady friend" make a mistake to let "several years pass without her husband's knowing" some of the hardships she had to endure during such trying times? Clean we must be, if we keep well, and it seems that the man worthy a neat wife ought to be willing to help through the hard tugs. Once, when we called at Capt. B.'s, they were in the very depths. There were pails, tubs and scrubbing brushes all about, and we knew there were tired women somewhere, too. We lifted the knocker on the wide open door, but no one came, so we entered. There was Charley B. mounted on the piano, with one of his sister's old wrappers wrapped all about him, armed with a brush, putting on the whitewash at a rate that made his mother's heart glad, I know. How I did wish I had 40 daughters, that he might take his pick; for a young man that will leave his books and music, when he enjoys every moment with them possible, to do the hard jobs for his mother, will do "to set your caps for," girls.

Castle Keep, May, 1882.

A Letter from the Farm.

(Written for the RURAL PRESS by "MAID-OF-ALL-WORK.")

We all read the papers. Seasonable gossip from London, Boston, New York and San Francisco is served up each week by our wise and plethoric newspapers. We never tire of the royal family of England, nor do we ever fail to hear of the rich Californians in Paris, the esthetic people in the East, the new customs practiced by those who are burdened with wealth, the new dishes invented by clubs and the latest cruel (crewel) achievements in decorative art; all of which, though timely and entertaining, is quite foreign to our daily needs and experiences.

The readers under this roof could pass a good examination on the sensations of San Francisco. We know who is singing good or ill, who is making a hit at such and such a theater, who is lecturing, what he is saying, and what is doing in social circles. We take in, in varied drafts, its every-day startling announcements, sometimes strange and weirdly romantic, its usual portion of crime, its most highly seasoned hash and intensified pleasures. Customs, thoughts, loves, murders, we read and ponder over. Our city friends cannot have a pleasure or fear but what the daily mail informs us of it.

But should we have occasion to run into the city for a week to buy up provisions by the dray-load, worsteds and linens by the trunkful, and to make such raids on book stores that we are treated with respect in spite of our freckles, we are regarded as a *genus rarus*—a specimen of curious ignorance and phlegmatic desire. We are regaled as follows: "I could live in a nice town or suburban villa, but on a ranch! How can you? Do you intend to farm *all* your life?" Uncouth visions float before our city friend of a succession of thrashers and wash days, churning in the parlor and making shirts in the kitchen. We are informed that we have buried ourselves. It is suggested that we might, as an alternative, go into some small retail business, or work for daily wages and live in two rooms on Whackery street. It is to relieve some such prevailing ignorance and give our city friend an opportunity to know something about us, that I open my heart and write from a scene of varied and pure enjoyments and grand aspirations—the farm.

It seems incredible that anyone living in the country in pursuit of a living by wheat raising should fall behind in general information and the common culture of the day. One can pick out several months of the year in which there is little to do, and the farmer can take the whole of that time, if he chooses, for either mental improvement or pleasure. During busy seasons many farmers do a great deal of reading during the noon rest. Then the farmer always has his evenings—the long, peaceful, uninterrupted evenings. The lamp is trimmed and burning, and peace abides. His home becomes a college of information and reflection. He may not read "Uarda" and "Hypatia" and the French classics, but he has the affairs of the day well classified. There is a certain breadth to the literature of the farm-house. The door is never slammed in the face of the book agent, but everything is good-naturedly taken, and as liberally read. The average farmer's wife may be unassuming and conspicuous for want of style, but she is not as ignorant of the political and literary situation as one may suppose.

There are many things to be winked at and made the best of on a farm, as everywhere else. One may rent, and think it not advisable to build fences and lay pipes. There can be no garden, and the water for the house must be carried from the pump or windmill. But on wheat farms vegetables can be bought cheaper than they can be grown; that is, if one can forego the romance of raising one's own beets and onions. As for a flower garden, a beautiful interior can be made to answer the same purpose. Vines can climb over the rough beams and a box garden bloom in every window, to the wonderment of the mild-eyed horses, as they rub their noses against the panes in envious contemplation.

The question of domestic labor is always an open one. The Chinese man steals, and smokes cigarettes in the kitchen; and the intelligence office applicant has "objections to the country." But the farmer's wife generally has a convenient way of settling the question, after floundering awhile in the hopeless sea of "Where shall I get help?" One city lady meets another. "How's Ann? Is she well?" "I should think so. She does all her own work."

"All her own work! Oh dear, it will kill her." It does not kill her. On the contrary, she thrives. A woman who is willing to help her husband by the labor of her hands, and is at the same time progressive in her thoughts and feelings, will do a great deal of stirring around in an incredibly short time. She will be so quick, so apt, so dextrous, that she will not get credit for half she does. I say dextrous, for it is a peculiar slight of hand performance—this disposing of house work quickly. She must carry when she fetches, and fetch when she carries. Granting a woman is willing to plan and think, she ought to have considerable leisure outside of her house work. There are no trivial interruptions. The country house wife can easily study with profit language and music in the moments her city cousin loses running to the door. At heart, she ought never to retrograde.

Many women are in a chronic state of discouragement about their work. They think it cannot be moved out of the way, and don't try. One way to shorten the work is to make the table as simple as possible, only preserving its palatableness and healthfulness. Make light, white bread, delicate coffee, cook meats skillfully, place things on the table in a tasteful, neat manner, and never mind the jams and crams and dados.

Some city cousin, writing of us, says we are killing ourselves with vile pastry. Nevertheless, just about here there is a great deal of pure, unadulterated mush eaten; and the whipped cream we have upon it is not prepared with white-earth and skim-milk, either. I will tell you how we make our mush. When the barley grinder comes around we have him put a few sacks of good wheat twice through the machine. This makes a fine-ground flour containing all the parts of the grain. Have a kettle half full of boiling water; salt; stir in the flour, sifting slowly through the fingers; when it thickens move it back and cook slowly. Keep watch, as you will have to add more water. Stir a great deal. This, with the cream aforesaid, and coffee and toast, makes a good breakfast, easily prepared. The hired men, the "autocrats" of our breakfast tables, are pleased and satisfied with the mush, and very often eat nothing else at a meal.

Contra Costa Co.

Chaff.

"WHAT is the matter, old fellow? You seem worried." "Well, I am. I'm being dunned up hill and down dale by my infernal creditors." "Oh, you owe a large sum of money?" "No, but a great many small sums, and debts are like children—the smaller they are the more bother they are."

GERTIE, a lively little fidget four years old, was being dressed for Sunday-school, but would hardly hold still a moment. Finally the bells began to ring before she was quite ready, so breaking away from her mother, she ran to the window, and putting her head out, cried: "Wait a minute, God, I'll be ready pretty soon."

A MAINE grocer who had just "experienced religion" acknowledged in meeting that he had been a hard sinner, cheated customers by adulterating his goods, etc., but, being converted, would repay any one he had wronged. Late that night he was awakened by a ring at his door-bell. Looking out he saw a man. "Who are you, and what do you want?" he asked. "I'm Bill Jones. You said to-night you would repay those you had cheated. Give me that $100 you've owed me so long." "Can't you wait till morning?" "No; I ain't going to wait till then and stand in line all day." He was paid.

HEATING BY SUNSHINE.—Professor E. S. Morse, of the Essex Institute, has devised an ingenious arrangement for utilizing the heat in the sun's rays in warming our houses. His invention consists of a surface of blackened slate under glass fixed to the sunny side or sides of a house, with vents in the walls, so arranged that the cold air of a room is let out at the bottom of the slate, and forced in again at the top by the ascending heated column between the slate and the glass. The out-door air can be admitted, also, if desirable. The thing is so simple and apparently self-evident that one only wonders that it has not always been in use. Its entire practicalness is demonstrated in the heating of the professor's study in his cottage at Salem. The value of the improvement for daily warming buildings like churches and schoolhouses, which, when allowed to get cold between using, consume immense quantities of heat before they are fairly warmed again, is evident. Of course some other means of heating must be available when the sun does not shine. But in the colder regions, say in the far Northwest, the sun shines a greater part of the time, and hence the saving of artificial heat would be very large if the sun heat could be "turned on" for eight or ten hours out of the twenty-four.—*Scientific American.*

PEPSINE IN SEA-SICKNESS.—A note in the *Pharm Zeitung* states that pepsine has been taken in about 20 cases by travelers who had never made a previous voyage, and has proved quite successful in warding off sea-sickness. As much pepsine as will lie on the point of a knife is dissolved in a wine-glassful of water containing five drops of hydrochloric acid. This dose is taken three times a day, and especially if feelings of sea-sickness threaten. Finzelberg's pepsine is especially named as having been used.

Science Club.—No. 9.

[All communications for this department should be addressed "RURAL PRESS Science Club," Berkeley, Cal.]

Away up where the sun shines in a melancholy splendor peculiar to 6,000 ft. above the sea, where the high Sierra mocks the snowy clouds that hang over the enchanted blue-lit canyons, are places which, when seen in the warm light of summer, seem fair as the dream of the land of the lotos eaters. And all inadvertently we find ourselves wandering over the great, grand past in search of those old worlds that existed "when the morning stars sang together."

The imagination wonders how these old terrains must have appeared when these rocks we so trustingly feel were the sands, the shale and the lime deposited and drifted about by the waves of our ancient triassic ocean.

Again, we see the mountains of granite composing that which is now termed the Sierra Nevada slowly upheaved in the jurassic period; but no great valleys or coast ranges greet our eyes in the west.

Far to the northeast, maybe in Oregon, rises the Big Blue river, rolling in a torrent from northeast to southwest, beside and between those gray old mountains, flowing across the center of those counties we call Plumas, Sierra, Nevada and Placer, scattering its upturned trees, tons of quartz and the glittering gold in its bed, till, falling in some unknown bay, whose high tides raise the river far, far inland, it mingles its waters with those of the ocean.

There is something so fascinating about that dead and mighty river, entombed half way up the Sierra, with its head to the north and its feet to the south, that we would like to linger. And imagine those days when it sparkled in quiet and sunshine, and then contrast it with the days when the landscape looked somber and stormy. What a monument of the past; and what hopes for the future have been wrought out in the grave of the Big Blue lead! This river must have flowed across these counties long before the tertiary period, as we understand no volcanic material has been found in its bed. A hundred lifetimes go by during the deep submergence of the cretaceous period, while the beaches of this ancient Sierra are strewn with strange shells and the remains of a large reptilian life. Slowly, so slowly that the seconds of time seem only as the grains of sand on its seashore, the waters recede and we see the islands which now compose the peaks of the Coast range, rising one after the other, like stepping stones, from northwest to southeast.

How the volcanic fissures must have lit up the scene in the tertiary period; making the Cascades in Oregon one vast lava flood, and also extending those fissures of lava through our northern counties, while cones, here and there throughout California, made night a brilliant scene.

How calm was the sleep of nature, when later the Sierra was one great sheet of snow and ice! But later, still, what a paradise of verdure clothed the hills and valleys. Freshwater lakes, now extinct, were filled with life in the post-pliocene period, when the elephant, ox, rhinoceros, wolf, tiger, and a horse of a smaller species, roamed the forests and enjoyed, in their rude way, this Eden of beauty and luxury.

The scene changes, and man appears—an autochthonic race, very likely, that was amalgamated or swept away by the races that brought the jade-stone from Asia. This is simply a fancy sketch.

We hoped to present our readers with some wood-cuts of the geology of California, but our best map is so imperfect that it would be of little use to place before you as reference. If those who are interested will look in Webster's Unabridged Dictionary (page 1713) they will find a table that will assist them. The geology of California is not represented below the carboniferous period.

J. Ritchie, Jr., box 2725, Boston, Mass., can furnish, pleased to procure, specimens of silver ore of all grades, lead, copper, borax, salt, volcanic productions, etc. This gentleman will no doubt be an interesting correspondent, as he contributes to some of our papers.

C. K. Tower, of Nevada City, Cal., wishes to renew his exchange, as he desires to increase his collection of minerals and shells. We have learned much from exchanges; in fact, as Porte Crayon says, "it is a question whether or not the parent receives more benefit from the child than the child from the parent." We have been so struck with this idea that we sometimes wonder why the Trustees do not rather pay pupils for going to school than the teacher who learns more from them than they do from him. We have found it so.

HOT MILK AS A RESTORATIVE.—Milk that is heated to much above 100° Fahr. loses for the time a degree of its sweetness and its density; but no one fatigued by over exertion of body and mind who has ever experienced the reviving influence of a tumbler of this beverage, heated as hot as it can be sipped, will willingly forego a resort to it because of its having been rendered somewhat less acceptable to the palate. The promptness with which its cordial influence is felt is indeed surprising. Some portions of it seem to be digested and appropriated almost immediately.

YOUNG FOLKS' COLUMN.

What Mr. Longfellow Said about a "Happy Old Pear Tree."

[Written for the RURAL PRESS by JEANNE C. CARR.]

How many of our children have marked the date when our beloved poet went up higher to sit with Dante and Shakespeare, among the immortals?

I am glad to know that it is becoming a custom in some of our public schools to celebrate the birthdays of our great authors by appropriate exercises, consisting of readings and recitations selected from their works. On such an occasion in Chicago, a reply from Mr. Longfellow, to a letter from the teacher, was read. "I can only send you and the boys and girls under your care a friendly salutation. To those who ask how I can write "so many things that sound as if I were happy as a boy," please say that there is in this neighborhood, or neighboring town, a pear tree, planted by Governor Endicott 200 years ago, and that it still bears fruit not to be distinguished from the young tree in flavor. I suppose the tree makes new wood every year, so that some part of it is always young. Perhaps that is the way with some men when they grow old. I hope it is so with me. I am glad that your boys and girls take so much interest in poetry. That is a good sign; for poetry is the flower and perfume of thought and a perpetual delight, clothing the commonplaces of life with golden exhalations of the dawn. Give all my sympathy and my good wishes."

This is a good hint for some of us old scholars in the school of life—to keep making new growth—as well as a charming example of kindliness and sympathy with the young.

Bushy Tail.

Papa's train was in, and Florence saw him coming up the walk with a very big bundle in his hand. It seems almost too bad to have kept the little girl waiting, but mamma said the bundle must not be opened till after supper. Do you know why that was? It was was because Florence did not like to eat supper very well, and probably would not have eaten anything at all if she had seen the present papa brought.

By-and-by, the brown paper was taken off, and there was a wire cage with a gray squirrel in it! What do you suppose Florence said to that? I don't think I can tell you just by writing it, but it sounded a good deal like, "Oh! Oh! Oh! O! O! O! My! my! myeeeeeee-e-e-e-e!"

In one side of the cage there was a little door, and before papa knew anything about it, Florence had it open, and in another minute the squirrel had jumped out and scampered way to the top of the bookcase. Such a time as they had catching him. He could run so fast, you know, that they could not get anywhere near him. At last papa got a nut and put it down by the open door of the cage; and then they all went and hid themselves—mamma behind the curtain, papa behind the door, and Florence under the desk. Pretty soon the squirrel peeped over the edge of the bookcase, and, as he couldn't see any one, he came down very carefully to get the nut.

But he did not go into the cage; he was to smart for that. He put his paw inside and pulled the nut out, and then sat up on his hind-legs, put his tail over his head, and began to eat. Suddenly, papa jumped, and said "Shoo!" and the squirrel was so frightened that he ran straight into his cage, and the door was shut in a jiffy.

Well, that squirrel got to be pretty tame. Florence put a little leather collar around his neck, and had a small iron chain so he couldn't get away.

One day she was playing in the yard, when down came an arrow right in front of her. A little boy, who lived just across the street, had shot it into the air, but didn't mean to come so near Florence.

She was dreadfully frightened, though, and dropped the chain, and away ran the squirrel up a tree. Papa tried hard to get him again, but couldn't do it.

Florence cried ever so hard (but, of course, that didn't do any good), and never forgot Bushy Tail.

One day, about half a year after the squirrel ran away, a man came along with a gun over his shoulder and a big leather bag hanging at his side.

"What have you got there?" asked Florence, leaning over the gate.

"Rabbits and squirrels," said the man.

"What you going to do with 'em?"

"Make a stew for my sick little boy."

"May I look?" asked Florence, opening the gate and coming out to the road where the man was.

The man said, of course she could, and he took them out one by one, but they where all dead.

"What has that squirrel got round his neck?" said Florence, as the man pulled the very last one out of the bag.

The man looked very carefully, and then he said:

"Why, it looks like a collar."

"Then it's my old Bushy Tail," cried the little girl.

And, sure enough, it was!

"Did you say your little boy was sick, and wanted a squirrel stew?" asked Florence.

"Yes, miss," replied the man, "and he's pretty sick, too."

"All right, then; you just give him this, with lots of love," said the little girl, patting the dead squirrel on the head, "and I hope it will make him all well again."

And it did.

N. Y. Tribune, Jr.

GOOD HEALTH.

Infant Food.

There are about 20 European preparations styled infant foods, and at least twice as many American, all of which profess to furnish complete nutrition for the infant during the first few months of its existence, while yet the conversion of starch into dextrine and sugar is beyond the capacity of the untrained digestive function. The examination of these with a microscope, assisted by such simple tests as iodine, which turns starch cells blue, and gluten (or albuminous) granules yellow, has engaged the careful attention of Dr. Ephraim Cutter, of Cambridge, and his reports will startle most mothers who have relied upon the extravagant pretenses set forth by the circulars of manufacturers. Eliza McDonough, who preceded Dr. Cutter in this field, has been in a measure discredited; but it appears that her assertion—that the starch, so far from being transformed into dextrine, was not sufficiently altered to render the recognition of its source difficult, whether from wheat, corn, rye or barley—was strictly true, and that these pretentious foods are, without exception, nearly valueless for dietetic purposes. All of them consist of baked flour, mainly, either alone or mixed with sugar, milk, or salts. In some cases, the baking has been very inadequately performed, and the doctor found one that consisted merely of wheat and oats whose starch cells were proximately in their natural condition. The general result of Dr. Cutter's examination may be stated in brief terms as follows:

There was scarcely a single one of the so-called infant foods that contained a quantity of gluten as large as that contained in ordinary wheat flour. That is to say, a well-compounded wheat gruel is superior to any of them, particularly when boiled with a little milk; and others are in error who place the slightest dependence upon them. As respects one very expensive article, professing to possess —— parts in every 1,000 of phosphatic salts in connection with gluten, Dr. Cutter was unable to find any gluten at all. The thing was nearly pure starch, sold at an exorbitant price for nerve and brain food, and a great remedy for rickets. So all through the list. Sometimes a trace of gluten was present; more frequently none at all. In one case, there were 90 parts of starch to 10 of gluten; but this was exceptional, and the majority were less valuable, ounce for ounce, than ordinary wheat flour. Considering the pretensions that have been put forth by the manufacturers of these foods, some of them sustained by the certificates of eminent physicians, the report of Dr. Cutter is one of the dreariest comments upon human nature that has recently fallen under the notice of the journalist. But if the revelation he has made of fraud and pretense on the part of manufacturers in this field will serve to protect mothers from further betrayal, and to rescue infant life from quack articles of nutriment, his work, though giving a tremendous shock to our sensibilities and to our faith in medical certificates, will not have been done in vain.—*New York Times.*

The Cause of Bright's Disease.

What is the cause of so much Bright's disease? asks a victim of this malady. To which we reply, there are many causes. One is the taking of a cold. A cold may go to the kidneys as well as the lungs, and do a great deal more harm there, for the tubules in this organ are very multitudinous and very minute. When inflamed they suffer in the same way that the nasal and bronchial tubes do; that is, get catarrh. A slight inflammation of these tubules is called a catarrhal one; but when it becomes deeper seated, then it is called croupous. About the only difference is one of degree, not of kind. Another cause of the disease is the excessive use of flesh food, and of hot, stimulating spices and drinks. Lager beer, it is said, is a frequent cause of Bright's disease. Alcoholic drinks, we know are. Many medicines are said to cause it, as, for instance, chlorate of potash, used so freely in many diseases; and it would not be at all strange if it was also caused by the use of the various baking powders so much in vogue. A person suffering from this malady should lead a sober and careful life, live on a plain, unstimulating, but nutritious diet, take moderate exercise, avoid lean meat, or use it only sparingly, and keep the skin active, so as to relieve the kidneys as much as possible from work. In its first stages, its ravages may be stayed, and, if the constitution be a good one, the person may live to a good age. In its worst form there is no remedy of much avail. Those advertised by the quacks, and, we are sorry to say, those given by the doctors, are of about equal worth, and both are valueless.—*Herald of Health.*

DOMESTIC ECONOMY.

To Take out Milk and Coffee Stains.

These stains are very difficult to remove, especially from light-colored and finely finished goods. From woolen and mixed fabrics they are taken out by moistening them with a mixture of one part glycerine, nine parts water, and one-half part aqua ammonia. This mixture is applied to the goods by means of a brush, and allowed to remain for 12 hours (occasionally renewing the moistening). After this time, the stained pieces are pressed between cloth, and then rubbed with a clean rag. Drying, and if possible, a little steaming, is generally sufficient to thoroughly remove the stains. Stains on silk garments which are dyed with delicate colors, or finely finished, are more difficult to remove. In this case five parts glycerine are mixed with five parts water, and one-quarter part of ammonia added. Before using this mixture it should be tried on some part of the garments where it cannot be noticed, in order to see if the mixture will change color. If such is the case no ammonia should be added. If, on the contrary, no change takes place, or if, after drying, the original color is restored, the above mixture is applied with a soft brush, allowing it to remain on the stains for six or eight hours, and is then rubbed with a clean cloth. The remaining dry substance is then carefully taken of by means of a knife. The injured places are now brushed over with clean water, pressed between cloths and dried. If the stain is not then removed, a rubbing with dry bread will easily take it off. To restore the finish, a thin solution of gum arabic, or in many cases beer is preferred, is brushed on, then dried and carefully ironed. By careful manipulation these stains will be successfully removed.

TO EVICT RATS.—A writer in the *Scientific American* says: "We clean our premises of the detestable vermin, rats, by making whitewash yellow with copperas and covering the stone and rafters with it. In every crevice in which a rat may go we put the crystals of the copperas and scatter in the corner of the floor. The result was a perfect stampede of rats and mice. Since that time not a footfall of either rats or mice has been heard around the house. Every spring a coat of yellow wash is given the cellar as a purifier, as a rat exterminator, and no typhoid, dysentery, or fever attacks the family. Many persons deliberately attract all the rats in the neighborhood by leaving the fruits and vegetables uncovered in the cellar, and sometimes even the soap is left open for their regalement. Cover up everything eatable in the cellar and in the pantry, and you will soon starve them out. These precautions, joined to the services of a good cat, will prove as good a rat exterminator as the chemist can provide. We never allow rats to be poisoned in our dwelling. They are so apt to die between the walls and produce annoyance."

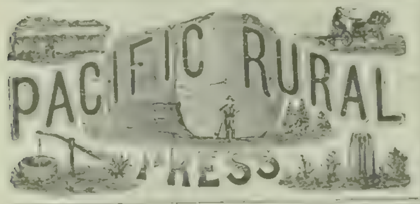
HOW TO COOK RICE.—Rice is becoming a much more popular article of food than heretofore. It is frequently substituted for potatoes at the chief meal of the day, being more nutritious and much more readily digested. At its present cost, it is relatively cheaper than potatoes, oatmeal or grain-grits of any kind. In preparing it only just enough cold water should be poured on to prevent the rice from burning at the bottom of the pot, which should have a close-fitting cover, and with a moderate fire the rice is steamed rather than boiled until it is nearly done; then the cover is taken off, the surplus steam and moisture allowed to escape, and the rice turns out a mass of snow-white kernels, each separate from the other, and as much superior to the usual soggy mass, as a fine mealy potato is superior to the water-soaked article.

JELLY ROLL.—Three eggs, one cup sugar, one cup flour, one and one-half teaspoonfuls soda, one teaspoonful cream tartar, or one and one-half teaspoonfuls baking powder. I like one tablespoonful of butter added. Beat eggs and sugar well, then add flour and baking powder; bake in a long tin on buttered paper; when done, take out on the paper onto a board or table; spread with jelly. Taking hold of the edge of the paper you can roll without breaking the cake. Care should be taken not to bake the edges of the cake too hard.

RICE FRITTERS.—Two cupfuls of cold boiled rice, one cupful of sweet milk, three eggs, eight tablespoonfuls of flour, half a teaspoonful of baking powder and half a teaspoonful of salt. Put two tablespoonfuls of lard into a pan, and when very hot fry the fritters to a nice brown, putting a tablespoonful and a half of batter into each cake.

COVERING FOR CLOSET FLOORS.—Do not put carpets in your closets; oil-cloth or matting is much better and can be easily kept free from dust. Matting, after being swept, should be wiped with a damp cloth. Hot salt and water will thoroughly cleanse it and will not discolor it.

CREAM PUFFS.—Two eggs, one cup of sugar, half a cup of butter, one cup of sweet milk, two and a half cups of flour, two teaspoonfuls of baking powder. Flavor with lemon. Split the cakes while hot and fill with boiled custard.



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A. T. DEWEY. W. B. EWER. G. H. STRONG

SAN FRANCISCO:

Saturday, June 10, 1882.

TABLE OF CONTENTS.

GENERAL EDITORIALS - The Yosemite; Choose Clean Men; Seed Sowing in California, 461. The Week; Still Firing on the Merchantmen, 468. The Isthmus Projects; Eads's Isthmian Railway, 469

ILLUSTRATIONS.—El Capitan, and Cathedral Rocks Yosemite Valley, 461. Nicaragua Ship Canal, Panama Ship Canal, Tehauntepec Ship Railway, 469

CORRESPONDENCE. Lake County Notes; Notes from Soledad, 462

THE VINEYARD —The Vineyards of Southern California, 462.

THE DAIRY.—Mangold Growing and Feeding, 462.

HORTICULTURE. — State Horticultural Society, 463

POULTRY YARD.—Still More about Incubators, 463.

PATRONS OF HUSBANDRY.—Sonoma County Grange Picnic; Sacramento Grange Reunion; Declaration of Public Needs; Grange Social; Grange Re union at Oakland; Temescal Grange Meeting, 464,

AGRICULTURAL NOTES, from the various counties of California, 464-5.

HOME CIRCLE.—Mother's Work (Poetry); Summer Life and Reveries; Leaflets from the Margin of Lake Tahoe; A Letter from the Farm; Chaff, 466. Science Club, No. 9, 467.

YOUNG FOLKS' COLUMN.—What Mr. Longfellow Said about a "Happy Old Pear Tree;" Bushy Tail, 467

GOOD HEALTH —Infant Food; The Cause of Bright's Disease 467

DOMESTIC ECONOMY To Take out Milk and Coffee Stains; To Evict Rats; How to Cook Rice; Jelly Roll; Rice Fritters; Covering for Close Floors, Cream Puffs, 467.

ENTOMOLOGICAL —Fruit Box Disinfection; A Dose for Plum Aphis; County Commissioners; A Persistent Insect Fighter; White Ants on Orange Trees; Exit Diabrotica, 46

QUERIES AND REPLIES.—Bat Guano, 468

SERICULTURE.—Silk Culture in California, 47 .

FLORICULTURE.—Santa Cruz Rose Fair, 470.

NEWS IN BRIEF on page 465 and other pages.

Business Announcements.

Threshermen, Attention, Geo Bull & Co., S. F.
Wagons, Benicia Agricultural Works Benicia, Cal
Business Sulky Jacob Price, San Leandro, Cal
Spanish Merino Sheep, E. W. Woolsey & Son, Fulton, Cal
Oculist, Wm. F. Smith, S. F.

The Week.

There has been a succession of delightful days varying in order from cool to moderate, and moderate to warm. The grain fields have proceeded rapidly toward maturity, and heading has been in progress in some of the earlier counties. The outcome promises to be a little better on the whole than was at one time anticipated, but yet moderate in amount. Much which was sown for grain has been cut to piece out the short hay fields, and yet even hay will be in moderate supply. Fruit is coming on apace and full quantities are bringing the price within the reach of all consumers. The apricot yield promises to be good and present indications are for an abundance of peaches. The canneries are ready for an active campaign and several new ones in the interior will begin work next week. Not much is said about prices within our hearing—perhaps others have longer ears than ours.

The tide of summer travel is setting in briskly and camps and hotels will be filled. It is peerless weather for an outing; let all go who can.

MAGNOLIAS are in bloom in several Marysville gardens. Flowering oleanders are abundant.

Still Firing on the Merchantmen.

The overland railway combination is still doing its best to drive the merchant vessels from our ports. It is a matter to which we have often alluded—advancing rates on merchandise and granting special favors to those who will contract to receive all their goods by rail, while those who ship partly by ocean are forced to pay the exorbitant rate for whatever they need to bring through quickly by rail. The railway aims to force the merchants to withhold all patronage from the ships until they are driven from the sea.

This stroke at our commerce is an unfair and groveling style of doing business. The placing of our merchants under such restrictions, and forcing them to withdraw patronage from ships which come here to carry away our wheat, is a direct stroke at public prosperity for private aggrandisement.

It seems that there are firms which cannot be coerced by the railway managers. A dispatch from New York on Tuesday is as follows:

There are half a dozen heavy firms who have refused to contract for the exclusive shipment of freight overland. The principal ones are Baker & Hamilton, M. C. Hawley & Co., Carolan & Co., and Holbrook, Merrill & Stetson, of San Francisco, and Thompson, De Hart & Co., of Portland, Oregon This trade furnishes about one-third of the total tonnage of the clipper lines to San Francisco. On May 24th the California Fast Freight line, which controls the through land shipments advanced tariff rates on hardware and iron goods of all kinds from $89.60 a ton to $134.40. The contract price, to obtain which shippers must bind themselves to ship entirely by rail for a year, is left at $89.60 a ton. Great indignation is expressed by the hardware trade at this advance in rates. The members declare it is intended to coerce them into accepting contracts with the overland line, and they assert that they will pay exorbitant rates on the goods they are obliged to ship by rail rather than put themselves in the power of the railroads. They fear that if they accept the terms of the roads the clipper lines will be so badly crippled by the loss of business that the roads will be able to advance contract rates.

Thus the object of the contract system appears. If the merchants can be forced to withdraw all patronage from the ships, and the clipper trade with California is therefore abandoned, it does not only mean that the merchants will be forced to endure the railway squeeze, but the farmers will be forced to ship their wheat by rail; and when the railway gets merchants and farmers both in their power—then look out for the tightening of the screws and the taking of all that the traffic will bear.

But the railways do not despair of overcoming the ppoosition of the firms who refuse the contracts. The New York dispatches say farther:

The agents of the California Fast Freight line are confident of success in compelling a surrender of the non-contracting firms. "If we are not successful," said one of them yesterday, "we will get handsome profits on the goods they must of necessity ship by rail. Sometimes a clipper ship is lost, and its cargo has to be duplicated at once and sent by rail. Then, again, an unexpected order depletes their stock, which has to be replenished at once by rail "

Here, then, the disposition crops out. Charge them tenfold for what they wish to send by rail. If they are unfortunate and their ships go down, charge them tenfold for what they need to replace the loss. If they need anything to serve an immediate and important purpose, charge them tenfold for it—and yet Congress, in effect, says that we do not need any law to regulate railway charges and prevent discrimination!

USE OF WATER IN RIVERSIDE.—All data concerning the use of water is important in an irrigating country, and we are pleased to see accounts of what is done with certain quantities of water on given areas of land. In time there will be material enough for the preparation of a manual on the service of water which will cover all usual demands for information. We find in last week's Riverside *Press and Horticulturist* the following item: The report of the President of the Riverside Canal Co. for the year 1881, stated that the average cost for irrigating the lands of the settlement for that year amounted to $2.15 per acre. The price of water for that year was six cents per inch for 24 hours. On a basis of one inch of water to eight acres of land, each acre is entitled to 7½ inches of water once a month for 12 hours. At six cents per inch for day and night, or three cents per inch for day water of 12 hours, this 7½ inches will cost 22½ cents per month, or $2.25 for 10 months of irrigation. It will therefore be seen that our people average a little less than 7½ inches per acre for 10 months in the year, and irrigation is kept up for about that length of time.

DEATH OF CAPT. ALLEN.—Capt. Oliver Allen was buried in Petaluma last week. He died full of years and honored by the community. Capt. Allen rendered invaluable service to the dairy interests of the State by inventing the butter worker, butter mold and other apparatus which are now largely used in our butter dairies.

PLACER COUNTY FRUIT.—The Newcastle fruit dealers and shippers have their hands full this season. We are informed that W. J. Wilson, of the Oak Cottage gardens, and dealer and shipper of fruits, has for the last 20 days shipped about two and one-quarter tons per day of strawberries. Our informant assures us that the fruit crop of that region is going to be first-class this season.

ENTOMOLOGICAL.

Fruit Box Disinfection.

The disinfection of return fruit boxes will be vigorously enforced in this city and at other fruit centers. Chief Officer Cook has issued a circular letter calling attention to the law. These are the provisions of the law:

Rule 6 Fruit boxes, packages or baskets used for shipping fruit to any destination, are hereby required to be disinfected, as hereinafter provided, previous to their being returned to any orchard, storeroom, salesroom, or place to be used for storage, shipping or any other purpose.

Rule 9 Empty fruit boxes, packages or baskets, may be disinfected by dipping in boiling water not less than two minutes, such boiling water used as such disinfectant to contain in solution not less than one pound of concentrated potash, or three-fourths of a pound of concentrated lye, to each and every 20 gallons of water, or in any other manner satisfactory to the Chief Executive Horticultural and Health Officer.

Mr. Cooke says: In order to secure a general compliance with the above rules, arrangements will be made at San Francisco, Sacramento, San Jose, Stockton and other places where fruit is shipped to a market or for storage, and local inspectors appointed, who will disinfect such packages, if required by the owners thereof, or the owners of empty packages or their agents may disinfect them, subject to inspection.

It would require at least 350 local inspectors throughout the State to have the work of disinfecting empty fruit boxes or packages, at the orchards, steamboat landings and railroad stations, done as effectually as by the disinfecting at markets, etc., as required. The local inspectors, if appointed, are allowed fees by law, and would be a heavy expense on the fruit growers. The disinfection of return packages at the place where the fruit is sent to the market (or for storage) is not only the most effective method for the prevention of the spread of insect pests, but it is by far the most economical for the fruit growers.

The rapid spread of the codlin moth to at least 30 counties in this State, since its first appearance in one orchard in 1874, can chiefly be attributed to the use of the return packages; therefore, the disinfection of all return packages is a necessity.

A Dose for Plum Aphis.

In answer to a letter from Latrobe, Mr. Cooke sends the following as a treatment for the aphis on the plum trees: Spraying the foliage of trees infested thoroughly with whale-oil soap and sulphur mixture, one pound to each one and a half gallons of water, or a mixture of two pounds of good soft-soap, one pound of sulphur and four gallons of water, will effectually destroy the plum aphis. The washes should be applied with a pump and spray nozzle. Either of these solutions may be applied, and will not in any manner injure the fruit or foliage.

County Commissioners.

The Board of Supervisors of Fresno county have appointed Andrew Jackson, Thos. Gorley and W. M. Williams a County Board of Horticultural Commissioners for Fresno county. This makes 21 county boards appointed under the authority of the horticultural law, viz: Sacramento, Yolo, Solano, Santa Barbara, El Dorado, San Bernardino, Santa Clara, Santa Cruz, San Joaquin, Amador, Contra Costa, Nevada, Placer, San Diego, Alameda, Los Angeles, Kern, Butte, San Benito, Marin and Fresno.

A Persistent Insect Fighter.

F. C. De Long, owner of the famous Novato orchard, in Marin county, is one of the most determined insect fighters in the State. The amount he has expended for labor, etc., may be inferred, when it is stated that he has used nearly ten tons of whale-oil soap and sulphur mixture in his orchard. Mr. De Long contrived last winter the most colossal moth trap in the world. He had an apple house of large size, and into this he put 34,000 return boxes last fall, covering all the openings of the house with mosquito netting, so that when the moths would emerge from the boxes they could not get away. The codlin moth was not found at Novato rancho previous to the latter part of last summer. The house trap worked well, and an exact account was kept of the number of moths killed. Up to June 1st, 4,036 moths were slaughtered in the house. If any one doubts whether the pest can be brought in on return boxes, this experience ought to settle it. Mr. De Long says he will hereafter have all his boxes scalded at San Francisco before returning them to the ranch. What a time he would have had if those 4,000 moths had been set free in his orchard.

White Ants on Orange Trees.

EDITORS PRESS:—Can any of your readers tell me how to keep white ants off of trees? I have a few orange trees which have been attacked by white ants just below the surface of the ground, and I fear they will kill the trees. I should be greatly obliged for any remedy that would kill what are there and keep others from coming.—A SUBSCRIBER, Los Gatos, Cal.

Some of our southern readers can answer this and describe the most effective treatment.

Exit Diabrotica.

The San Benito *Advance* states that the "insect commonly known as the lady-bug, which has done much damage to leaves and fruit, is now noticeable for its absence." This is not a "lady-bug" at all; it is the pea-green, black-spotted diabrotica, which has done so much injury during the last few years. It is a transient pest, and parts which once suffered from its ravages are now free. Our Berkeley garden has not shown one this year, where, for the last three years, we have hardly had a decent rose-bud because of this pest. We hear of the insect now in more distant parts.

QUERIES AND REPLIES.

Bat Guano.

EDITORS PRESS:—Would you please give me any information which you may possess or can obtain in regard to guano, as to what it is worth at different markets in the United States, and where it is principally purchased. This is bat guano, in caves easy of access and only about seven miles from a railroad now building and which will be completed within 30 days.—CHARLES A. SHIBELL, Tucson, Arizona.

The subject of bat guano has been quite thoroughly worked up by the United States Department of Agriculture at Washington. Large deposits exist in caves in nearly all the Southern States, and with a view of determining the extent of the deposits and the value of the material, the Commissioner of Agriculture sent circulars asking reports from the correspondents of the Department in all sections. In this way it was ascertained that the deposits were not confined to any particular section of the South, but that they exist in many of the States from Virginia to Texas, several of them being of considerable extent. It was believed by many persons before the war, and by officers of the Confederate Government during the war, that they would prove to be a valuable source of niter, and were worked for the extraction of this compound. Some of the attempts in this direction proved successful, but very many of them failed ruinously, as might have been expected from the low percentage of nitric acid in some of the samples and its complete absence in others, and, at the close of the war, all enterprise in this direction was abandoned. It was demonstrated that they will, however, be a profitable source of fertilizing material, since their mechanical condition is favorable to their ready removal and application to the soil. Most of them contain fair percentages of organic nitrogen, while some of them contain both actual ammonia and nitrates. Microscopical examination of the material shows it to consist of the remains of the hard parts of insects in a finely comminuted condition, which are the source of its nitrogenous constituents. Many of these remains are in such a fair state of preservation that the species of insects to which they belong may be determined.

As remarked before, specimens were secured from several Southern States and analyzed by the Department. The following table includes four analyses of guano from four different States:

	Alabama.	Texas.	Arkansas.	Kentucky.
Sand, clay, etc.	1.068	0.46	1.885	62.060
Moisture	36.30[illegible]	9.17	44.330	14.020
Organic matter	46.77	82.18	47.73	6.144
Alumina and iron	0.3[illegible]	0.17	0.463	....
Phosphoric acid { soluble	0.541	1.52	1.833	....
Phosphoric acid { insoluble	3.0[illegible]	0.67	0.81	0.711
Lime	6.428	1.86	0.71[illegible]	....
Magnesia	0.066	0.38	Trace.	....
Sulphuric acid	.....	1.16	2.161	....
Chlorine	.....	0.35	0.262	....
Nitric acid	....	Trace.	0.258	....
Potassa	1.69	0.67	0.590	0.0707
Soda	0.750	Not det	0.312	0.152
Soluble silica	.....	....	....	....
Organic nitrogen	5.33[illegible]	7.96	6.000	0.199
Ammonia corresponding to organic nitrogen	.....	....	7.28	2.2416
Actual ammonia	0.528	1.24	2.013	....
Undetermined	1.531	....	.....	....

These are all very similar in appearance, with the exception of those containing the high proportion of insoluble mineral matter, which are very much like soil. Those containing high proportions of organic matter vary in color from light brown to dark brown, according to the percentage of moisture they contain. As stated before, their physical condition, when air-dried, is excellent, both for handling and for application to the soil, and the analyses given above represent very fairly the average composition of the material, which may be valued at from $15 to $80 per ton, reckoning upon the basis for determination of the value for fertilizers adopted by Dr. Ch. A. Goessmann, inspector of fertilizers for the State of Massachusetts, in his report for 1876. These values compare favorably with those of the fish products largely manufactured in New England, and even with Peruvian guano, analyses of both of which may be found in the report just alluded to.

Deposits similar to these have also been discovered in Europe, but they are by no means as valuable as those of this country. Thus, according to analyses by Schwarz, the composition of a deposit near Raab, in Hungary, is variable, two samples analyzed containing respectively .98%, .84% and .70% nitrogen, and 11.03% and 10.56% phosphoric acid. A sample from an Italian deposit, analyzed by F. Sestini, contained 20.799% volatile matter (principally organic), 2.021% nitrogen, and 1.17% phosphoric acid. With these facts before us, we may readily recognize the importance of the development of these deposits in the South, where fertilizing materials are so much needed and are so costly, and especially is this true when they may be obtained from this source for the mere cost of removal. It is quite likely, too, that the material can be put upon the market in this State to advantage.

The Isthmus Projects.

The discussion of the various routes proposed or the passage of ships from ocean to ocean, through the isthmus, is one of the most important matters now occupying the public mind. To the producers of the Pacific coast the annihilation of the isthmian barriers means quick and cheap carriage of their products to the great markets of the East. It also involves protection against the force of railway monopoly, and there are many other minor reasons why the people of this coast should take a keen interest in the progress of the various projects, and understand their main characteristics. At present the De Lesseps enterprise stands in advance, having an army of men upon the ground and work actually being done. Which ever route soonest reaches a working success will receive the plaudits of the people.

In order that our readers may have data for comparisons between the several routes proposed, we present here diagrams of their profiles and maps of the region through which they pass. We have, also, the following descriptive notes, prepared by a gentleman who has given the subject much consideration, and which we believe are given without prejudice or favor to any particular route:

The Nicaragua Canal (Surface).

It will be observed that the Nicaragua Canal is 173½ miles long. The section from the Atlantic to the location marked A, is a canal proper, 36 miles long, and containing 5 locks, with a lift of 22 feet each, by means of which ships reach the summit level of navigation. At the point marked A a dam is constructed, a favorable location with rock abutments have been selected. This dam, made of cut stone, is 2800 feet long and 49 feet high, and elevating the river above it to a hight five feet below the level of Lake Nicaragua. The distance from the dam to the lake being 68 miles, the fall is a little less than one inch per mile, which will create a current of about one and one-half miles per hour, carrying the water, at ordinary lake level, two and a half feet deep above the crest of the dam. The river San Juan is improved and straightened before the dam is completed, and thus transformed into an estuary or extension of the lake.

The lake navigation is unimpeded with an average of 9 fathoms depth, although the lake is in many places 15 to 20 fathoms (90 to 120 feet) deep. The water is clear, fresh and sweet. The extreme of high and low water, at commencement and end of rainy season, is never over six feet. The area of the lake is about 14,000 square miles—about the size of Lake Erie, but deeper.

The Pacific Division, from the lake to the Pacific Ocean, has a cut of only 40 feet depth above lake level, and, like Atlantic Division, is fitted with 5 locks, to overcome the level of the lake above the ocean. The Canal is to be cut 28 feet deep. The locks 600 ft. long, 85 ft. wide, and 30 ft. deep, with iron gates, moved by steam power, which also will be used in moving sailing ships through the locks. Steamships will, of course, use their own power. These locks are fitted with two lateral openings, of 5 feet diameter, on each side, (or four openings in all), which will empty or fill the lock in 11 minutes. The locks will be made of concrete, faced at the top with heavy hard wood native timber, which will not be injured by the *teredo navalis*, the water being fresh. The supply of water is a hundred fold the capacity of the canal, and always free of floods; consequently under easy control. The delay in passing each lock should not exceed 30 minutes. The rate of speed in canal proper can be placed at 4 knots per hour, and on the lake and slack water river summit level, approximately full speed. The time to pass through can be thus calculated: Canal navigation 53 miles at 4 miles per hour, 13¼ hours; summit navigation, 120 miles at 8 miles per hour, 15 hours; passage through 10 locks, at 30 minutes each, 5 hours; total time, 33¼ hours, which may be further reduced by greater speed on summit level, which, on the lake can as well be 12 or 15 miles per hour as 8 miles. The distances are thus divided:

	Miles.
Canal Atlantic to San Juan River Dam	36
" Pacific to Lake Nicaragua	17¼
Slack water river navigation	68
Lake Navigation	52½
Total length	173½

The Engineers estimate of cost (U. S. Survey) based on actual close instrumental surveys, is $41,000,000, which with 25 per cent. contingency added, makes approximately $52,000,000. Time for construction 4 to 5 years.

The Panama Ship Canal (Below Sea Level).

The profile here given is the U. S. Survey. The French survey makes a summit level of 325 feet, with an average cut of about 260 feet for about seven miles through the central, or Culebra division. The length of canal is about 45 miles. The Panama railroad is 47½ miles long. The canal is to be excavated 28 ft below sea-level, with a tidal lock at the Pacific end, which must remain closed about half of each tide, controlling the tidal rise and fall at Panama, and the current through the canal. The Chagres River is obliterated at Matachin, where the canal crosses it, 42 ft. below its present bed, by an enormous dam, about 6,800 ft. long, and 155 ft. high above the present bed of the river. This dam creates an artificial lake, in front of which runs the canal, and an artificial secondary lateral canal is made to drain off the reservoir into the Atlantic. The canal being below sea-level, the excavation must necessarily be, to a great extent, in water.

The rainfall on the Panama Isthmus being very heavy (at Aspinwall in 1872 it was 170 8-10 inches) the question of drainage is considered by engineers as one of the greatest obstacles to be encountered in the construction of this work, below sea-level, and consequently receiving the drainage of the adjacent country into the canal.

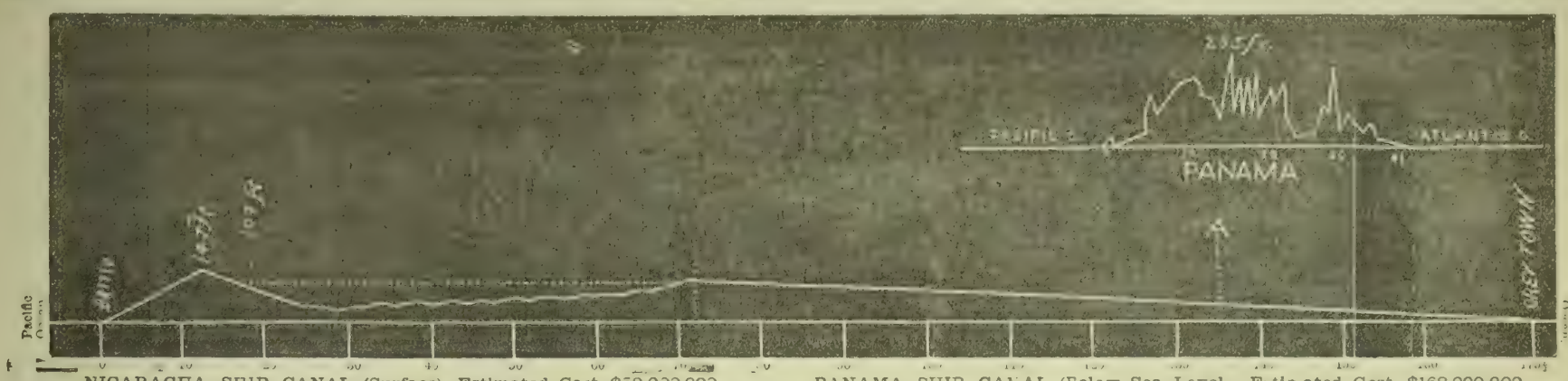
The Engineers' estimate of cost, including 10 per cent. contingency, is $168,000,000. Time of construction is estimated at 8 years.

The Tehuantepec Ship Railway.

No survey has been made here for a ship railway, the profile given being the United States Barnard-Williams Survey for a ship canal with locks, which idea was abandoned on account of the high elevation of summit and scant supply of water. The total distance is undetermined, but by using the Coatzacoalcos River, the length of railroad can be reduced to about 140 miles. The road is projected without curves, for which obtuse angles are substituted, with hydraulic shifting tables at each angle. Hydraulic side tables are to be made to allow ships to pass each other en route. It is proposed to transport ships on cradles, mounted on wheels, applied to fourteen or sixteen lines of rails, and drawn by locomotives of great power. An examination of the profile between the 30 mile and 100 mile marks shows a grade of over one hundred feet to the mile.

Hydraulic lifting docks are to be applied at each terminus for taking ships out of water, and placing them on the railway.

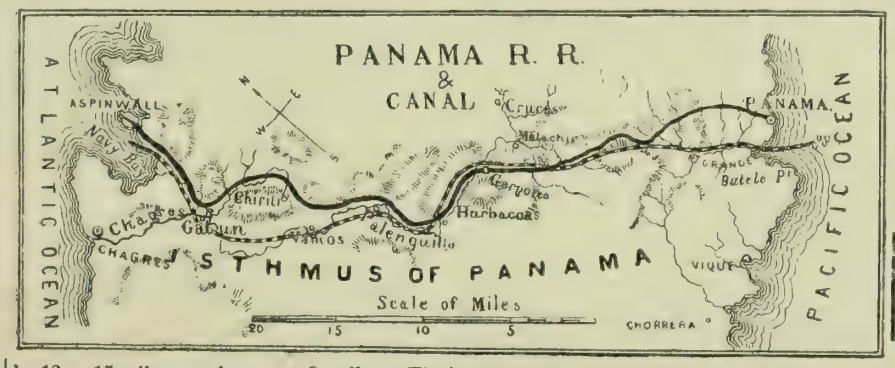
Estimated cost without contingency estimate or survey $72,000,000. Time of construction placed by projector at 4 years.



NICARAGUA SHIP CANAL (Surface). Estimated Cost, $52,000,000. PANAMA SHIP CANAL (Below Sea Level. Estimated Cost. $168,000,000.

TEHUANTEPEC SHIP RAILWAY. Estimated Cost, $72,000,000.

HORIZONTAL SCALE—10 miles to one inch. VERTICAL SCALE—500 ft. to one inch.



Eads' Isthmian Railway.

EDITORS PRESS:—Capt. W. L. Merry says in PRESS of May 20th that his attention has been called to an article by L. F. Moulton, doubtless honest in his intentions, but so replete with errors that he proposes to correct a few of the most pertinent mistakes. He does not attempt to answer the points made against the Nicaragua canal with locks and the points of being 500 miles farther along a windless coast to Nicaragua and 1,250 to Panama, where sailing vessels that carry three-fourths the commerce of the world have to be replaced by steamers at great cost to shippers of farmers' wheat and the extra return freight for mechanics' and manufacturers' goods. He does not mention the long coast to be defended in time of war to protect the Nicaragua canal when the Tehauntepec is at our very door and could not be taken by the combined armies and navies of the earth. We then could enforce the Monroe doctrine more effectually than by going foundering along a windless coast in steamers borrowed from our enemies. After dodging all of the other questions that he could not answer that have been proved in my article of Feb. 4th, in the PRESS, by quotations from the most eminent authorities in the world, he proceeds to present two crushers that Eads and his friends have never been able to answer, and he invites any one interested to answer them.

Mr. Merry summarily disposes of Eads' ship railroad by the unsupported statements that the Nicaragua canal can be worked as cheap as Suez, which was 9% of gross receipts, and further on he says the Nicaragua canal has been surveyed and estimated by Government officers, etc. Now, judging from the result of such work in the past, as compared with the efforts of outside engineers, who have had no political or rich friends to afford them the luxury of hazing away a few idle years at West Point, or some other military school, but instead have had to work their way up the rugged road to the just approval of the successful members of their noblest profession, as our own great engineer has, in the face of the

army opposition, whilst building in 90 days his iron-clads, in his deepening the mouth of the great father of waters, in building the St Louis bridge with 500 ft. span, which the London Board of Engineers declared was the greatest achievement in engineering of this present age. And here the critic, Mr. Merry, throws a fling that its estimate was $4,500,000, but cost $15,000,000. The facts, as given to me at the time of completion by the best authority at St. Louis was, that $10,000,000 instead of $15,000,000 was the cost. At the building of the jetties there was a canal with locks proposed, down through the swamps, by these very Government worthies, which would, like this Nicaragua canal, have cost many times as much as the jetties, and probably have been stuck in the mud till this day, instead of ships going to sea of 27-ft. draft, or instead of being stuck on a seven-foot bar, as before Eads built the jetties. In those works, Eads had to underestimate and underbid the canal Government officials, and nearly bankrupt himself and friends by spending $3,000,000 before the Government was to spend or guarantee a dollar; and had not the farmers and mechanics of the Mississippi valley brought such a pressure, by voice and votes, these very worthy Governmentals would have crushed Eads, as this overland railroad would crush him now, were it not that the farmers and mechanics of the Sacramento and San Joaquin valleys, San Francisco and other cities, and the valleys of Oregon and all these great Pacific States, will again speak and vote against the dangerous power of this monster that can imprison in their office on this coast, in spite of San Francisco, State of California, or U. S. authority, one of their clerks for some fancied or real wrong. Yes, can bid defiance to county, State and national Government, and can defy collection of taxes, and may punish citizens in any county for incurring their displeasure.

Mr. Merry proves too much when he says the Panama railroad replaces *lignum-vitæ* sleepers in five years. In Nicaragua the ants and jiggers would eat up their locks in less time, but through the healthy climate of Mexico at Tehauntepec, good timber and cement and other building materials are in great abundance, with plenty of good, cheap laborers, who could be put on the railroad thick as bees are before a hive in a thunder-shower, and the work could be completed before the hospitals at Nicaragua could be built.

Mr. Merry says "compare this with a ship canal that improves with age." In New York the canal that immortalized De Witt Clinton's name is now proposed to be made free because the railroad and the great Mississippi, since Eads made the jetties, are so much faster, better and cheaper to be worked. This canal with locks, as I said in a letter before, about the Nicaragua canal, belongs to a "former age."

Again, he says "Eads' bill fixes toll at nearly double that of the Nicaragua canal." One of the best features of the Eads' bill is that all American ships go for half or lower rates than Nicaragua canal rates, thereby discriminating in favor of again building up a great maritime fleet of "our own," instead of paying out vast millions for carrying our wheat, etc., to market to our enemies, in foreign ships. He says it is not in the scope of his article to criticise Eads' bill, that cannot stand honest criticism which binds the Government before success of the work is assured. Now, the reader will find in the bill, unanimously approved by the Senate committee, that after the first 10-mile division on either side, together with harbor works, including lifts (which Mr. Merry admits are practicable), for which the interest on $5,000,000 will be guaranteed for 15 years for each division on either side, after safely transporting the ship and returning to ocean on either side, thus making a guaranty for interest for $10,000,000. When this has been done the President shall appoint one from the army, one from the navy and one from civil life, to go to the isthmus, and unless the said board shall report, in effect, that it is practicable to construct the proposed railway for the transportation of loaded vessels, weighing, with their cargoes, not less than 4,000 tons, at a cost not exceeding $75,000,000 (Mr. Merry admits the cost of Nicaragua to be $80,000,000), *no part* of the guarantee provided, except the first $10,000,000, shall attach until after the safe transportation, from sea to sea, of a loaded vessel of the weight aforesaid.

Mr. Merry says Eads proposes 50% to 100% less weight of vessels than the trade demands. Now, the wheat ship that carries over 2,000 short tons is not a desirable ship, as she cannot get into many of our best wheat ports, and our cargoes average about 2,000 short tons. He says the Panama canal is expensive, but has the merit of practical work, which Tehauntepec has not. He thereby admits, if the Frenchman keeps on digging and he talking, the Panama canal will come out first in the race.

Eads' bill has other good features. First, if the company takes all risks in advance of Government guarantee, the Government gets vessels, troops, mails, officials, and telegrams transmitted free from ocean to ocean. The speed will not be less than six miles per hour, and probably much greater, taking, at most, but 24 hours in transit, which time could be spent in repairing ship's bottom, the same as if in dry-dock, and the vessel would rest as easy on car, and much easier than in rough weather at sea. The bill provides that if it earns over 8% interest, the Government shall cut down the toll to that amount. Also, vessels belonging to citizens of the United States are charged but one-half the tolls on vessels belonging to foreign countries. If the Government should elect, at any time during period of said guarantee, to continue through period covered by grant from Mexico to Eads, and if the Government shall, in fact, make such guarantee, said company pledges itself thereafter to carry all vessels belonging to citizens of the United States free. It is also provided that the company has no right to mortgage the railroad or to hypothecate revenue; that said company shall not transport ships, troops, etc., of any nation at war with the United States or Mexico; and the franchise continues for 99 years. The bill is well guarded in the interest of this coast and nation, both in time of peace and war. It will be a fit and crowning glory for one to accomplish so grand a feat, who has done more for this country than anyone now living, and it will be a source of regret in the future if Eads is driven on the 27st inst. to look elsewhere for support to accomplish this, his last great and noble work. L. F. MOULTON.

Colusa, Cal., May 25, 1882.

SERICULTURE.

Silk Culture in California.*

(Continued from last week.)

CONCLUDED.

In New Zealand the business has already taken a sure hold as one of the growing industries of that enterprising colony. The business there was first started through the efforts of the ladies, very much in the same manner as the ladies are now moving in this State. The cost of producing raw silk there is set down at an average of about $2.50 per pound.

Mr. L. S. Crosier, manager of a filature recently established at Corinth, Miss., offers from fifty to seventy-five cents per pound for green cocoons, according to quality. The cocoons, however, must be produced from a particular breed of worms, the eggs for which he furnishes, and which he states in his circular will produce a cocoon weighing from six to eight times as much as the ordinary Japanese cocoons.

Mr. Frank Cheeney, one of the four brothers largely engaged in silk manufacture at South Manchester, Conn., who is now on a visit to this State, informs the writer that his company is now paying from sixty cents to one dollar per pound for pierced cocoons. The price varies with the quality. They pay seventy-five cents for Japanese waste and pierced cocoons. They do not buy perfect cocoons, as they have no filature connected with their establishment. The prices they pay for pierced cocoons would be equal to about seventy-five or eighty-five cents for a first-class article of green cocoons.

Prof. C. V. Riley, of the Department of Agriculture at Washington, in his recent silk culture report, refers to a number of parties in various parts of the Union who are raising silk worms very successfully. Mr. E. Fashnach, of Raleigh, N. C., has been thus engaged for several years. He ships his cocoons to Marseilles, France, where he receives an average of $250 per pound, net, for dried cocoons—equal to seventy-five or eighty cents green. Mr. B. A. Webber, of Rockford, Ill., shipped forty pounds of cocoons to Europe last year. But most of our silk growers have prepared to ship eggs, for which France paid to the United States $27,000 in 1876, which amount has been largely increased every year since.

We understand that Prof. Wilkinson, of the Deaf and Dumb Institute at Berkeley, has signified his willingness to establish a filature at that place as soon as he can be assured of a sufficient supply of cocoons to keep five or six reels at work. It is to be hoped that the press of California will aid the efforts of the California Silk Culture Association in encouraging the establishment of silk industry in this State. As already advised, let it be done in a small, experimental way, until the proper degree of experience has been gained and the profits of the industry fully assured. Small profits are all that should be expected, although there is good reason to believe that when large numbers of our people become thoroughly educated to the work and the business fairly starts on a small scale, larger ventures may be entered upon with good success and profits.

Professor Riley, in a recent communication to the *Scientific American* on "Silk Culture in the United States," writes, in regard to the labor question involved, as follows:

"The greater value of labor here, as compared with labor in the older silk-growing countries, has been in the past a most serious obstacle to sericulture in the United States, but conditions exist to-day that render this obstacle by no means insuperable. In the first place, comparative prices, as so often quoted, are misleading. The girl who makes only twenty or thirty cents a day in France or Italy does as well, because of the relatively lower price of all other commodities there, as she who earns three or four times as much here. Again, the conditions of life are such in those countries that every woman among the agricultural classes, not absolutely necessary in the household finds a profitable avenue for her labor in field or factory, so that the time given to silk raising must be deducted from other profitable work in which she may be employed. With us, on the contrary, there are thousands—aye, hundreds of thousands of women who, from our very conditions of life, are unable to labor in the field or factory, and have, in short, no means outside of household duties of converting labor into capital. The time that such might give to silk culture would, therefore, be pure gain, and, in this sense, the cheap labor argument loses nearly all its force. This holds more particularly true in the larger portions of the South and West that are least adapted to dairy products, or where bee-keeping and poultry-raising are usually confined to the immediate wants of the household. In the early part of the century the females in most households, even of the well-to-do, found profitable employment in the spinning wheel and the distaff. With modern improved appliances and the general introduction of machinery the average American girl is too often doomed to idleness or else forced to leave her home to add to the family income."

CORRESPONDENCE.

Any information concerning silk culture may be obtained by addressing Mrs. T. Lucas, President of the Womans' Silk Culture Association of the United States, No. 1028 Race street, Philadelphia, Penn.; Mrs. John B. Felton, President of the California Silk Culture Association, No. 930 Adeline street, Oakland, Cal.; Mrs. T. H. Hittell, No. 808 Turk street, San Francisco, Cal., the Corresponding Secretary of the California Silk Culture Association; or the compiler of these pages, Mr. W. B. Ewer, of the *Pacific Rural Press* San Francisco, Cal.

*The California Silk Growers' Manual, By W. B. Ewer, A. M. Published, under the direction of the California Silk Culture Association, by Dewey & Co., office of PACIFIC RURAL PRESS, San Francisco. Price, postpaid, 25 cts.

FLORICULTURE.

Santa Cruz Rose Fair.

The large hall was handsomely decorated. In the center rose a tall pyramid of plants, the apex crowned with the massive bloom of a draceana, whose long, spear-like foliage gave a tropical aspect to the scene before us. Beneath it, among a host of beautiful things, a magnificent cactus blossom, eight inches across, shone out like a scarlet star from the surrounding green. On every side of us stretched long tables covered with flowers, the roses everywhere predominating. Turning to a lady, whose red badge announced her to be one of the executive committee, we inquired, "Where on earth did all these roses come from?" "From Santa Cruz and its suburbs. Wherever a rose lover was found who had in his or her collection a choice variety, they responded at once to our call, by bringing in their finest specimens for our exhibition." Turning to our right, we proceed to take in slowly the beauties before us, that were too many and varied to be appreciated without a careful study of each separate table. The table before us, arranged by Mrs. E. Cahoon, of Soquel, and Mrs. Rooney, of Santa Cruz, was a bed of exquisite fern and moss, bordered with crimson roses. In the center was a handsome

Pyramid of Flowers,

Whose base was surrounded with a wreath of white peonies, then one of scarlet cacti, with others of Mont Blanc and Madame Lombard roses. On either side was a mound of the same wonderful moss; one surmounted by a group of brilliant pelargoniums, the other with an immense star of pansies, which gleamed out in all their beauty from the fernlike background in which they were embedded.

In the corner of the hall, near the table, was an artistic bit of the wild woods, arranged by Mrs. Allie Smith and her father, Mr. Ed. Cahoon, of Soquel, represented a native fernery, with its brakes and ferns, its wild vines and mosses so clearly that, for a moment, one forgot the beauty of all cultivated things in their admiration of those of nature's own growing.

The next table, prepared by Mrs. DeLamater and Mrs. McCann, was equally lovely with its border of pink and white tea roses, in the tasteful arrangement of its imported ferns, rare roses and exotics. The base of the fine center decoration was a mass of orange blossoms, which perfumed all the air, while suspended above it was a beautiful specimen of the Japanese orchard fern, in the shape of an anchor. This fern requires no potting in earth, drawing its nourishment solely from the atmosphere, and may be trained into many beautiful devices, such as harps, crosses, etc. It is exceedingly rare and beautiful.

The next two tables, arranged by Mrs. Wilson, Miss Perkins and Miss Cooper, gave one an idea of the

Magnificence and Profusion

Of the Santa Cruz roses, every variety of size, color and beauty being represented there upon a gorgeous display. Then came the table in the right rear corner of the building, arranged by Mrs. Younger, Mrs. Effey and Mrs. Gilbert. It was a marvel of taste and beauty, with its unique designs of horse-shoes, stars, ornamented baskets, cupids and canary birds, surrounded by a bed of lovely roses, arranged in a mosaic pattern. Next came a table of handsome roses from the residence of Mr. F. A. Hihn, who also also sent in plants from his greenhouse, which were conspicuous upon the center pyramid of flowers. The typical rose table of the fair, however, was the one arranged by Mrs. Miller and her friends, in the left rear corner of the hall. It was one magnificent mass of pale tea roses, ranging from white through all the delicate tints of blush and cream color, from the summit of its center mound clear to the outer border of grasses, save where at each end a circle of crimson roses, like a floral seal of state, stamped this as being the rosiest of all the rose tables. We did not wonder at the industry of some individual whose curiosity could only be quelled by counting how many roses this table contained, nor at his triumph, when, his task completed, he announced to the public that it contained, by actual count, 3,500!

Next came the handsome display of garden and greenhouse plants from the nursery of Mr. Doeltz. Then came another

Lovely Rose Table,

The work of Miss Kirby, Mrs. Tanner and Mrs. West, of Soquel, whose display of the queen of flowers was almost surpassed by that of the magnificent pansies with which this whole table was profusely decorated.

Next to these was the splendid and varied exhibition of pot plants by Mr. Thompson, whose extensive nursery on the Sand lane will well repay a visit from the flower lovers of Santa Cruz. We were back again to the entrance. Here were the two long tables of "named roses," over which interested rose-growers were always bending, discussing the merits of this or that rose, the proper name for this unknown beauty, or the mis-naming of that well-known one. We retired from the hall charmed with the display, far richer in rose knowledge than when we entered, and proud of Santa Cruz, our home.—*Courier Item.*

Pugh's Rust-proof Wheat.

EDITORS PRESS:—It was during the summer of '78, when the wheat rust was blighting every field on the valley and foothills for the whole length of this southern coast, that Mr. S. O. Pugh, of Soledad, noticed among his ruined Australian wheat, where the rust was very destructive, a few stalks of a new variety, entirely distinct from the other or any wheat he had ever seen, and the interesting feature of it was, that it was perfectly free from all rust—a plump, white berry and no shriveled grains; even the smaller grains were all plump and perfectly formed. It was a beardless and heavily filled head, held by a strong stalk. It seems to have some resemblance to the Sonora, and also some slight tinge of Australian resemblance, as if there were some possibility of its being a hybrid of those.

Mr. Pugh recognized the possibility of this grain being rust proof, and saved the 16 heads. I leave out, for brevity, the full history of its haps and mishaps, but will say that the second planting from the 16 heads yielded about 500 lbs. Last year Mr. Pugh had between six and seven tons of very choice, white, plump grain, weighing 65½ lbs. to the bushel. He has this year 60 acres now headed and partially in bloom, promising very well, and is almost entirely free from any kind of weeds or other grain. One might, perhaps, find a few heads of barley on an acre. This wheat is now growing on the south side of Salinas river and valley, six miles from Soledad, on the foothills, perhaps 1,000 ft. above the river bottom, on not very rich soil, but is very beautiful and promises well. There seems to be but little doubt that this new wheat is a very valuable acquisition to the cereal family, and until it is proved to the contrary, it can stand as entirely rust proof.

I send you eight heads of last year's crop, that were picked up three weeks after the field had been harvested, which gives it a very dead and open appearance; yet they, with the few green heads of this year's growth, will show you the characteristics of the grain. This grain is yet without a name, and Mr. Pugh has reserved the honor of naming it to the PACIFIC RURAL PRESS, and he will give, at a future time, further results of his efforts to produce a choice, extra quality of rust-proof wheat. He is active and enterprising, and with many others, who dare climb the hills, is showing what comfortable homes, with gardens and fruit trees, vines and flowers, can be made from wild, bushy wastes. But this item is only to speak of the wheat, that you can thresh out in apostolic style ("rubbing them in your hands"), and examine it, knowing that it is not picked berries culled from the smaller ones. B. W. CROWELL.

Soledad, May 20, 1882.

[The record of Mr. Pugh's experience is very interesting. We have heard of the grain before, but never so full an account of it. It may become famous. We shall name it in honor of the propagator, "Pugh's Rust-proof wheat," and shall watch with interest its future behavior toward the fungoid foe of the wheat grower.—EDS. PRESS.]

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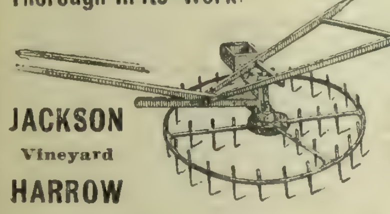

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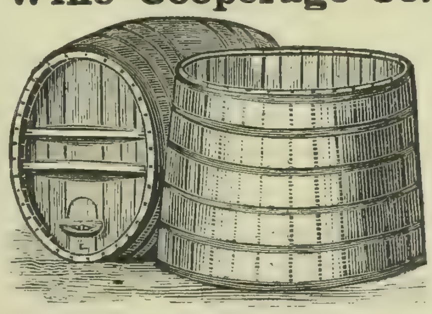

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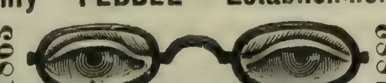
1863  1882

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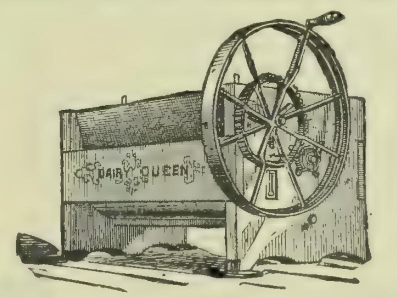

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☞ As the LEADING HOUSE and HEADQUARTERS in all these products, we are ready to correspond with the producers with the view of purchase or contract for the coming crops. REMEMBER, that we purchase outright, either at points of production, paying freights, etc., ourselves, or delivered in S. F., freight paid. Remember, also, that in dealing with us you are operating through strictly FIRST HANDS. NO COMMISSIONS charged. NO DELAYS in settlements.

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Portable Derricks, Price, $160 00. Nets for Header-bed, Price for one wagon, $12.50. Grab Forks, for unloading Hay, Grain, or Straw, with the Derrick, Price $45.00.

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THIS WASHER WILL BE SENT ON TRIAL TO RESPONSIBLE PARTIES,

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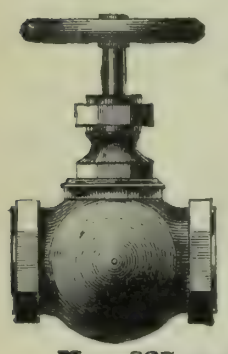

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Sure Crops!

HEALTHY CLIMATE!

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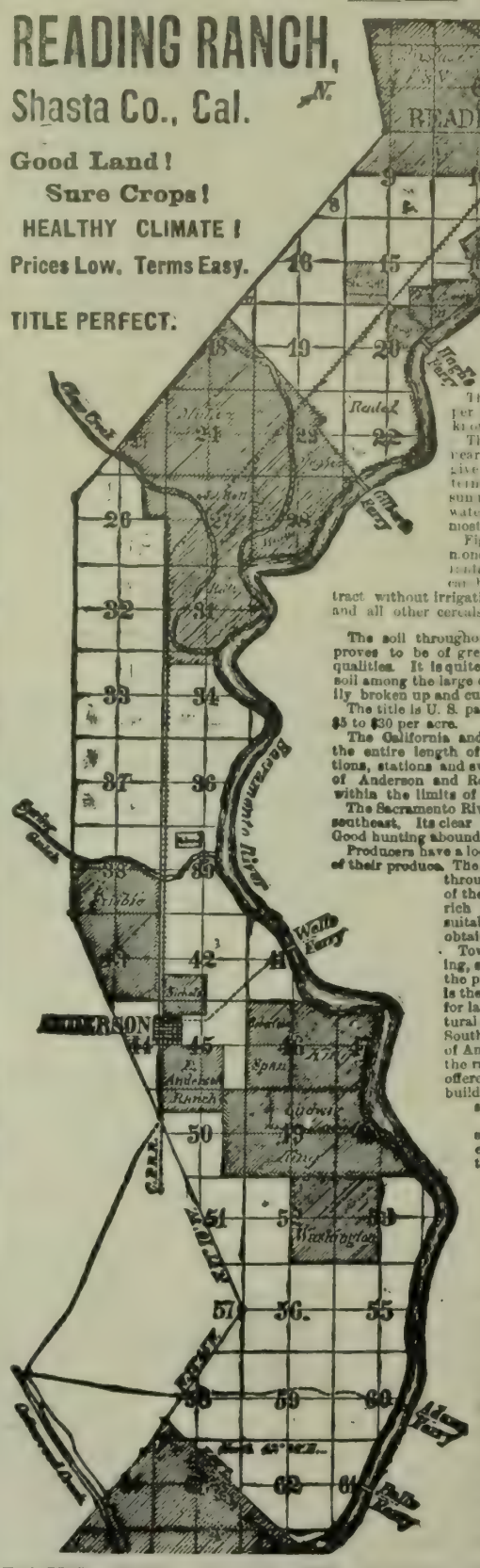


The Reading Ranch, in the Upper Sacramento valley, originally embracing over 26,000 acres of choice grain, orchard and pasture land, is now offered for sale at low prices and on favorable terms of payment, in subdivisions to suit purchasers.

The ranch was selected at an early day by Major P. B. Reading, one of the largest pioneer land owners in California. It is situated on the west side of the Sacramento River and extends over 20 miles along its bank.

The average rainfall is about 30 inches per annum, and crops have never been known to fail from drouth.

The climate is generally healthy. The near proximity of high mountain peaks give cool nights during the "heated term" which occurs in our California summers. Pasturage, wood and good water are abundant. The tillage land is mostly level, with complete drainage.

Figs, Grapes, Peaches, Prunes, Almonds, English Walnuts, Apricots, Currants, Pecans and other common fruits can be raised with success on most of the tract without irrigation. Also, Alfalfa, Vegetables, Corn and all other cereals ordinarily grown in the State.

The soil throughout the tilled portions of the ranch proves to be of great depth and enduring in its good qualities. It is quite free from foul growths. The virgin soil among the large oak trees on the bottom land is easily broken up and cultivated.

The title is U. S. patent. Prices range principally from $5 to $30 per acre.

The California and Oregon railroad traverses nearly the entire length of the tract. There are several sections, stations and switches, besides depots at the towns of Anderson and Reading, all of which are located within the limits of the ranch.

The Sacramento River borders the whole tract on the southeast. Its clear waters are well stocked with fish. Good hunting abounds in the surrounding country.

Producers have a local market, which enhances the value of their produce. The railroad transportation route is level throughout to San Francisco. A portion of the land is auriferous and located near rich mines now being worked. Land suitable for settlers in colonies can be obtained on good terms.

Town lots are offered for sale in Reading, situated on the Sacramento river, at the present terminus of the railroad. It is the converging and distributing point for large, prosperous mining and agricultural districts in Northern California and Southern Oregon. Also, lots in the town of Anderson, situated more centrally on the ranch. Lots in both these towns are offered at a bargain, for the purpose of building up the towns and facilitating settlement of the ranch.

Purchasers are invited to come and see the lands before buying here or elsewhere. Apply on the ranch, to the proprietor,

EDWARD FRISBIE,
Anderson, Shasta Co., Cal.

Location of Shasta County.

Shasta County lies not far from midway between the two most important ports on the Pacific shore, *i. e.*, San Francisco and Portland, Oregon, and directly on the route from Mexico to British Columbia. The town of Redding, at present, and probably for years to come, the head of railroad transportation on the California side of the mountains intervening below Oregon, is distant from San Francisco by railroad (via Vallejo) 255 miles; from Sacramento City, 169 miles; from Marysville 117 miles.

☞ Persons thinking of buying or renting land will not likely regret a camping or excursion trip to this upper Sacramento country.

LAND FOR SALE OR RENT IN SUB-DIVISIONS.

Star CYLINDER AND *CONCAVE TOOTH.*

Steel Laid and Hand Made.

Address, **A. F. LA SHELLS,**

Biggs, Butte County, Cal.

The Calaveras Big Trees.

The Mammoth grove of big trees is situated in a small valley, near the headwaters of the San Antonio, one of the largest streams in central Calaveras, California, and five miles east of the falls of said stream, which are 150 ft. in hight, and surrounded by the grandest of scenery.

The grove contains 10 trees, each 30 ft. in diameter, and over 70 that are between 15 and 30 ft. Hittell, in his "Resources of California," says: "One of the trees which is down—'The Father of the Forest'—must have been 450 ft. high and 40 ft. in diameter." In 1853 one of the largest trees, 92 ft. in circumference and over 300 ft. high, was cut down. Five men worked 25 days in felling it, using large augers. The stump of this tree has been smoothed off, and now easily accommodates 32 dancers. Theatrical performances have been held upon it, and in 1858 a newspaper—*The Big Tree Bulletin*—was printed there.

Near the stump lies a section of the trunk; this is 25 ft. in diameter and 20 ft. long; beyond lies the immense trunk as it fell, measuring 302 ft. from the base of the stump to its extremity. Upon this was situated a barroom and ten-pin alley, stretching along its upper surface for a distance of 81 ft., affording ample space for two alley-beds, side by side.

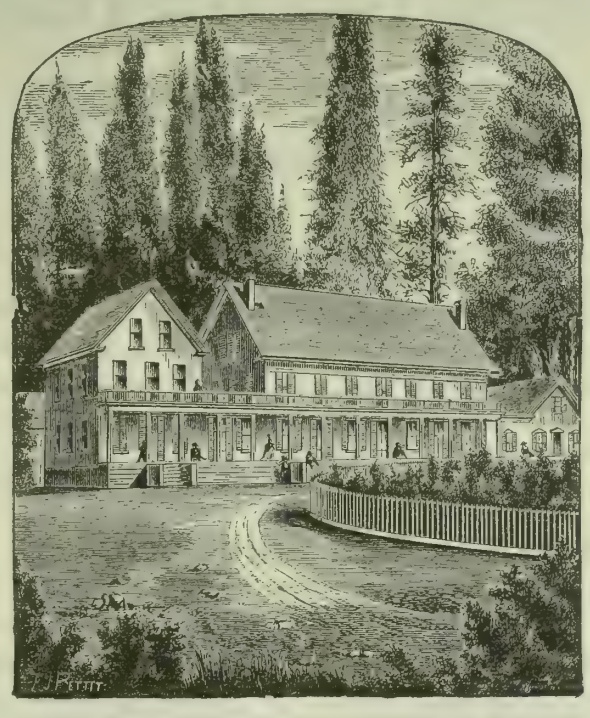
About 80 ft. from this stump stand the "Two Sentinels," each over 300 ft. high, and the larger 23 ft. in diameter. The carriage road approaching the hotel passes directly between the "Two Sentinels."

Tourists leaving San Francisco will take the Central Pacific railroad to Stockton, and the Copperopolis railroad to Milton, connecting with a daily line of coaches via Murphy's to the Big Trees. A daily coach leaves the Big Trees for Milton, connecting at Murphy's with a daily line to Yosemite valley, via Hutchings' new route, being the shortest and best.

The Grove hotel (J. C. Sperry, proprietor), having, since the last year, been enlarged, can now accommodate 100 guests. It has a laundry, hot and cold baths, a billiard table, bar, verandas, parlor, ball-room, the most pleasant sleeping apartments, and furnishes the best of fare at the table. It faces the grove, having the greater number of trees to the left, looking from the veranda, and the "Two Sentinels" immediately in the front, about 200 yards to the eastward.

The valley in which this grove is situated contains of the sequoia trees 93, not including those of from one to ten years' growth. There are also hundreds of sugar and pitch pines of astonishing proportions, ranging to the hight of 275 ft., and having, not unfrequently, a diameter of 10 to 11½ ft. Anywhere else these pines would be regarded as vegetable monsters. Here, by the side of the sequoia, they look like dwarfs. During the summer and spring months this valley is exempt from the heat of the lower country and from the cold of the snow range. Vegetation blooms early in May, remaining fresh and green until the middle of October. The water is always pure and cold, and the hotel furnished with ice all through the summer and autumn. Snow falls usually about the middle of December, and disappears from the grove entirely by the middle of April.

There is good hunting ground in the vicinity—mountain quail are abundant near by, and on the Stanislaus, three miles distant, grouse and deer abound. The San Antonio contains trout of fine size.



THE MAMMOTH GROVE HOTEL, CALAVERAS COUNTY, CAL.

It is said, "Fortune knocks once at every man's door." In most cases it must have been when the man was out.

Work of the Immigration Bureau.

The subscribers to the fund of the Immigration Bureau met in the Board of Trade rooms, Tuesday, June 6th, to hear the reports of the President and Secretary for the half year just elapsed. Pres. A. R. Briggs excused the absence of the Land Officer's report, stating that while on his tour in northern California the Land Officer was taken sick. The financial report, as read by the Secretary, A. W. Preston, was as follows: Receipts, $3,752.18; expenditures, $3 540.94; balance of cash on hand, $202.24. Continuing his report, the secretary stated that personal applications for land from native Americans had been received numbering 295, and from naturalized Americans 172, making a total of 467. Applications by letter had been received from 399 persons in the United States and 30 persons in various foreign countries.

In submitting his report the President stated that the Association was organized under the auspices of the Board of Trade, November 21, 1881, and first began active work on December 19th of the same year. The report embraced a general *resume* of the work done by the Association during its existence, of which the following facts are the most important: The number of contributing members is 124, from whom is derived a monthly income of $692 67. Records of plats of available Government land in Mendocino, San Luis Obispo, Lake, Sonoma, Shasta, and Santa Cruz counties have been made and bound into volumes. In these counties 2,365,000 acres of surveyed Government land open to entry and settlement have been found, and 250,000 acres of land have been examined by the Land Officer. The society has now sufficient information to locate 1,000 families, giving to each family 160 acres of land. The suggestion was made to send an agent to Castle Garden, in New York, for the purpose of obtaining a sufficient number of immigrants to establish a colony or two in this State of the immigrants landing there. Some practicable work must be done before the State Legislature could be called on for an appropriation to carry on the work. Both reports were placed on file.

A vote of thanks to the officers of the association was passed, and the reports of the President and Secretary were ordered to be published in pamphlet form.

One of the members, speaking of the immigration to this coast, remarked that very few of the immigrants come to this State, but settle in Oregon and Washington Territory.

T. H. Goodman, passenger and ticket agent of the Central Pacific railroad, stated that on the completion of the Southern Pacific road through to New Orleans, several European and American steamship lines had offered to operate in conjunction with that line for the purpose of reducing fares for emigrants to this State from Europe, by running a line of steamers direct from Europe to New Orleans. The Texas Pacific railroad, which is expected to be completed within 60 days, has expressed its willingness to the Central Pacific railroad of reducing fares to this coast from New Orleans to facilitate immigration to the Pacific.

A motion was carried empowering the President to appoint a committee of 15, this committee to be divided into sub committees of three each, for the purpose of canvassing the city for additional funds for the association by monthly subscriptions or donations; after which the meeting adjourned.

It is stated upon good authority that William Bennett, who lost his life in the Alta mine on Friday, while endeavoring to rescue the seven missing miners, made his last will a few moments before descending into the mine. He was fully alive to the great dangers that awaited him, but his stout and noble heart prompted him to risk his life to save that of others.

REDLANDS.

The owners of the Redlands tract having disposed of a large portion of their lands, now offer for sale one hundred and fifty acres only, at $125 per acre, this being all that will be offered the present season.

Redlands is located on the south side of Mill Creek Ditch, between Old San Bernardino and Crafton.

The lands are a clayey loam, very similar to the lands at the head of Magnolia Avenue in Riverside.

There are no fences on the land and no brush to clear off.

The tract is being put on the market as rapidly as the water can be put upon the lands, and no faster.

One thousand acres of the tract have just been surveyed and platted, about nine hundred acres of which have already been sold. The price of the remaining tracts is $125 per acre.

The third five hundred acre tract will not be put upon the market before the winter of 1882–3. In the meantime the system of irrigation will be completed by finishing the large reservoir conducting the waters of the Company to the reservoir in pipes and flumes, and laying concrete pipes through the tract to carry water from the reservoir to the highest point on each tract.

The main avenues are one-quarter mile apart, 100 feet wide, and run from northeast to southwest for convenience of irrigation. The course of the sea breeze is parallel with these avenues.

The cross streets are sixty feet wide, and run at right angles with the avenues every half mile.

The tract is subdivided into ten-acre lots, with a town site composed of smaller blocks.

Its situation is the finest in the San Bernardino Valley, the view being unequalled, and the elevation near 2,000 feet above the level of the sea.

The climate is unsurpassed, the location being so far inland that fogs and northers are almost unknown.

The title to the land is United States patent, and is therefore beyond question.

The Water Right is ample and beyond dispute. It consists:—

First—Of fifty shares in the Sunny Side ditch, one of the oldest ditches in San Bernardino county. This water will be conducted from the Sunny Side ditch to the Redlands reservoir in a ditch flumed part or all of the way, so that no water will be lost by seepage. The ditch is already constructed and will be flumed before the next irrigating season. This is good for 500 acres of land.

Second—An eighty-inch stream developed in Santa Ana Canyon. This stream is being piped down to the head of the Redlands ditch, so that the entire water supply will be handled without loss. This stream is good for 500 acres more of land.

Third—Two reservoirs will be constructed. The work on these is now in progress. The largest reservoir will have a capacity sufficient to cover 500 acres of land 9 inches deep with water. There is an abundance of winter water to supply this reservoir. The second reservoir will be much smaller. The large reservoir will cover 17½ acres of land, and will be 60 feet deep in the deepest place

Fourth—The water will be conducted from the reservoirs to the highest point on each ten-acre tract by means of concrete pipes, thus saving expense and wastage in the distribution of the water. These reservoirs will irrigate another 500 acres.

These water rights, reservoirs, pipes, flumes, ditches, etc., are the property of the Redlands Water Company,—a company incorporated to furnish water to the Redlands tract of 1,500 acres, with 1,500 shares of stock. One share of stock goes with each acre of land, so that when the land is all sold the owners of the land own and control the water, and they only charge such price for the water as is absolutely necessary to pay running expenses for handling the water in the most economical manner possible, as there are no ditches to clean.

Lands shown and business attended to promptly six days in the week only, on the tract.

☞ Send for Circular containing Map and further information.

Postoffice address, SAN BERNARDINO, CAL.

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REDLANDS, 1882.

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GALVANIZED, PAINTED OR JAPANNED.

The Handsomest, Stiffest, and Most Durable. No Rust. No Decay. Secure Against Fire, Flood and Wind.

IT IS THE ONLY BARB WIRE that will prevent small animals, such as rabbits, hares, pigs, dogs, cats, etc., from passing through, under or over it, the barbs are so near each other.

The Barbs being triangular-shaped, like the teeth of a saw, and close together, there is no *cruelty to animals*, as they cannot pierce the hide; they only prick, which is all that is ever necessary as *no animal will go near a Barb Fence twice.*

AS THE WIRE IS NOT BENT OR TWISTED, its tensile strength is much greater than the Wire in all other Barb Wire Fences, as they are all made of twisted or bent Wire.

HEAT AND COLD CANNOT AFFECT THE AMERICAN BARB FENCE, as it can be allowed to sag when put up, enough to cover contraction and expansion, *because it is a continuous Barb, and cannot slip through the staples one inch.* Each panel of Fence takes care of itself.

The Barbs cannot be displaced or rubbed off, and are not pounded on and indented into the wire to hold them in place, as in other Barb Wire, thereby decreasing the strength of the Wire The Barbs are short, and broad at the base, where strength is required.

THE PAINTED WEIGHS A POUND TO THE ROD, so that the purchaser knows exactly how much fencing he is getting. Galvanized weighs slightly more.

☞ SEND FOR SAMPLES AND PRICES. ☜

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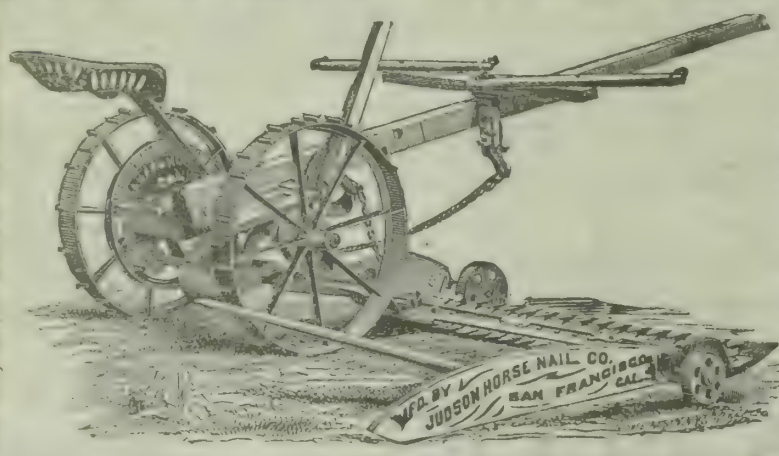

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MERRILL'S PATENT REIN HOLDER.

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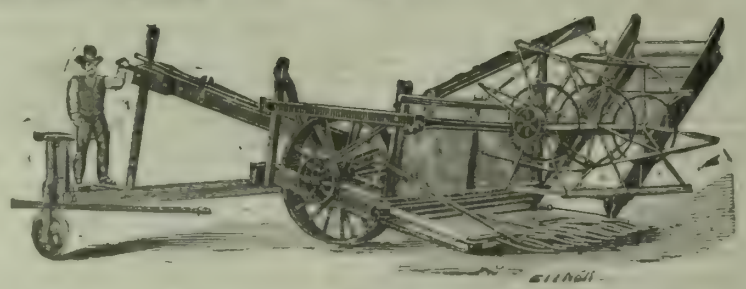
"The Stockton Chief!"



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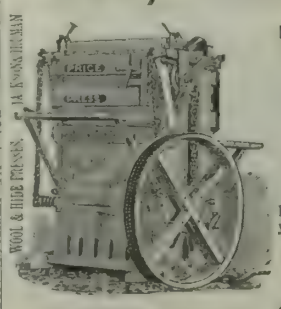
HAY, HIDE and WOOL PRESSES.



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TOULOUSE GEESE at $15 per pair; $20 per trio; Eggs, $8 per dozen. Bronze Turkeys, $10 per pair; Eggs, $4 per dozen. Address T. D. Morris, Sonoma, Cal., breeder and importer of all kinds of thoroughbred poultry

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And Wholesale Dealer in Needles, Oils, Parts and Attachments for all Machines, removed from 130 Post to

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QUALITY, NOT QUANTITY. OUR NEW PACK FOR 1882. 50 ALL Chromo Cards. (Extra fine Stock) Artistic designs of Swiss Floral, Sea-View, Wreaths, Landscape, Gold and Silver Panel, Bird Motto, Butterfly, Moonlight, Summer and Winter Scenes, all in beautiful (not gaudy) colors, with your name in fancy type, 10c. Sample Book of 90 costly Styles for 1882 25c. 40 per cent paid to Agents, or beautiful prizes given for clubs. Particulars with every order. CAXTON PRINTING CO. Northford Conn.

Oakland Poultry Yards,

Cor. 17th and Castro Sts., Oakland, Cal.

GEORGE B. BAYLEY,

Importer and Breeder of all the best known and most profitable varieties of Land and Water Fowls.

Brahmas, Cochins, Houdans, Langshans, Leghorns, Polish Hamburgs, Bronze Turkeys,

And the new fowl, AMERICAN SEBRIGHT or EUREKA.

AGENT FOR THE PACIFIC INCUBATOR,

WHICH IS MADE IN THREE SIZES,

No. 1,	Capacity,	550	Eggs,	Price,	$90.
No. 2,	"	250	"	"	65.
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Guaranteed to hatch NINETY PER CENT. of all fertile eggs; 9,000 chickens successfully reared from two of these Incubators last season. For further particulars send stamp for illustrated circular to GEO. B. BAYLEY, Box 1771, San Francisco.

IMPROVED

EGG FOOD

It Cures all Diseases of Poultry, Keeps Hens Healthy and Makes them Lay.

1-lb. Boxes, 40 Cts. 3-lb. Boxes, $1.
10-lb. Boxes, $2 50. 25-lb. Boxes, $5.

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Also, Importer and Dealer in Seeds.

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My Berkshires are Thoroughbred, and selected with great care from the best herds of imported stock in the United States and Canada, and for individual merit cane not be excelled. My breeding stock are recorded in the "American Berkshire Record," where none but pure bred Hogs are admitted. Pigs sold at reasonable rates. Correspondence solicited.

JOHN RIDER,
18th and A Streets, Sacramento City, Cal.

Duroc, or Red Hogs.

The undersigned are making a specialty of raising this celebrated breed of hogs for breeding purposes. They are gentle, thrifty and of very rapid growth, and better adapted to this climate than any other breed of hogs. We have hogs of this breed now upon our ranch, 11 months old, weighing over 400 lbs. each. N. W. Spaulding, U. S. sub-Treasurer, San Francisco, killed one of these hogs Dec. 14, 1881, at the age of 16 months, that weighed 583 lbs. gross, and 584 lbs. dressed.

On Dec. 22, 1881, Messrs. Zimmerman, Strouse & Co., of the Bay City market, S. F., killed one weighing 1018 lbs. net when dressed, 3 years and 3 months old We are prepared now to ship to any part of this State these pigs 6 to 12 weeks of age. For prices and circulars address,

HINCKLEY & GETCHELL,
Laurelles Ranch, Monterey, Cal.

PURE BRED POULTRY.

Langshans, Cochins, Brahmas, Leghorns, Plymouth Rocks, Dorkings, Pekin and Rouen Ducks, Bronze Turkeys, Etc.

I have a large stock of the above varieties for sale cheap considering the quality of the stock. My Birds are raised on large farms, where they have unlimited range, giving them a

VIGOROUS CONSTITUTION,

Which is very desirable in any Breeding Stock.

For further information send 3-cent stamp for new circular and price list, to

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MAKE HENS LAY.

An English Veterinary Surgeon and Chemist, now traveling in this country, says that most of the Horse and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable. Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold everywhere, or sent by mail for eight letter stamps I S. JOHNSON & Co., Boston, Mass., formerly Bangor, Me.

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$3 per dozen by mail, WARRANTED the best A new idea in traps. Sold direct through the mail and express. No discount. Never before offered to the public. Address G. W. JOLLY, Inventor, Parlaso Springs, Cal.

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Hogs & Cattle.

Langshans, Brahmas, Cochins, Leghorns, Houdans, Plymouth Rocks, W. F. Black Spanish, Guinea Fowls. Aylesbury, Rouen and Pekin Ducks. Bronze and White Holland Turkeys. Peacocks, Etc. Also, Eggs for Hatching.

Dish-Faced Berkshire Pigs, Poland China Pigs, Jersey Cattle, etc.

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New Edition, over 100 pages, Handsomely Illustrated Price by mail, 50 cents.

Stock or Eggs for Hatching guaranteed true to name, and to arrive safely. For further information please write, enclosing stamp. Circular and price list sent on application. Address

WILLIAM NILES,
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I have for sale at my ranch, near Oroville, Butte county,

12 Young Short Horn Bulls,

From one to two years old. Price from $100 to $200 each.

ALSO

50 Short Horn Cows and Heifers.

All these cattle are red Durham—all thoroughbred. They are offered at private sale to those wishing to secure good stock. MOSES WICK.
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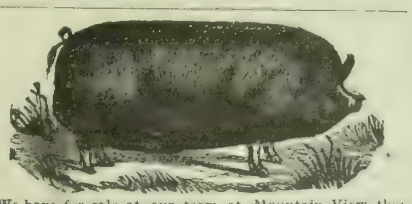

We have for sale at our farm at Mountain View, thoroughbred

BERKSHIRE PIGS

From our Thoroughbred Berkshire Boar and Sow, which we imported from England in 1880 Pigs from imported Boar and Sow, $25 each From Imported Boar and Thoroughbred Sow, $10 to $20 Our Imported Pigs are as nice Pigs as there are in the State Address JACKSON & TRUMAN, S F

Calvert's Carbolic

SHEEP WASH.

$2 per Gallon

After dipping the Sheep, is useful for preserving wet hides, destroying the vine pest, and for wheat dressings and disinfecting purposes, etc. T. W. JACKSON S. F., Sole Agent for Pacific Coast

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For sale in large or small tracts, on easy terms, in the best parts of the State.

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Fruit and Homestead Lands

FOR SALE.

Having purchased the tract of land adjoining the town of Vacaville, known as the Mason-Wilson tract, containing 492 acres, and subdivided the same, I am prepared to sell from five acres upwards, as desired

This land being located in Vaca Valley, known for its early and superior fruits, offers valuable inducements to those desiring to engage in the business, or for pleasant country homes.

For climate, healthfulness and school facilities it is unsurpassed in the State, and easy of access by a branch railroad from Elmira.

I will sell upon favorable terms. For particulars Apply to W. B. PARKER.
Vacaville, Solano, Co., Cal

Good Crops Every Season Without Irrigation.

Free by mail, specimen number of *"The California Real Estate Exchange and Mart,"* full of reliable information on climate, productions, etc., of

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Address *"Exchange & Mart,"* Santa Cruz, Cal.

Mission Rock Dock and Grain Warehouse.

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65,000 tons capacity. Storage at lowest rate

CHAS. H. SINCLAIR, Supt.

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MANUFACTURER OF FIRST-CLASS

Buggies, Farm & Freight Wagons,

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Cor Thirteenth and J Sts., Sacramento, Cal.

Repairing promptly attended to.

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SAN FRANCISCO, CAL.

Authorized Capital, - $1,000,00

In 10,000 Shares of $100 each.

Capital Paid up in Gold Coin, $531,200.

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CURRENT ACCOUNTS are opened and conducted in the usual way, bank books balanced up and statements of accounts rendered every month

LOANS ON WHEAT and country produce a specialty.

COLLECTIONS throughout the Country are made promptly and proceeds remitted as directed.

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CERTIFICATES of DEPOSIT issued payable on mand.

TERM DEPOSITS are received and interest allowed as follows: 4% per annum if left for 6 months; 5% per annum if left for 12 months.

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Cashier and Manager.

San Francisco, Jan. 15, 1882.

Educational.

The Harmon Seminary,

BERKELEY, CAL.

A NEW BOARDING AND DAY SCHOOL, FOR YOUNG LADIES

Will be conducted by REV. S S HARMON and Mrs. F W. HARMON, for the last 10 years associate principals of Washington College

The HARMON SEMINARY will receive girls of all ages; the instruction comprising Primary, Preparatory and Academic. Thorough course in the English branches. The Arts, Music and Modern Languages in charge of well known masters. Special course preparatory to the State University.

The HARMON SEMINARY will be first-class in all respects, and will combine the best educational advantages with home care, guidance and guardianship.

The first year will open August 3, 1882.

For prospectus and other information, address

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The next year will begin on

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BAILEY, BADGLEY & CO.,

Cor. Main and California Sts, Stockton, Cal.

Importers and Jobbers in

Agricultural Implements, Hardware, Etc.

Agents for the

J. I. Case and Woods Headers. McCormick Harvesting Machine Co.'s Binders, Reapers and Mowers, the LaDelle Freight, Farm and Header Wagons, Althouse Vaneless Windmills, Minnesota Chief Threshers, Engines and Horse Powers, San Leandro, Buford and Stockton Gang and Sulky Plows.

Also, State Agents for the Celebrated

AMERICAN HAY CARRIER and ELEVATOR.

Large Stock of Builders' Hardware and Carpenters' Tools. Orders Promptly Filled, and Goods sold at Bedrock Prices.

50 All Gold, Chromo and Lithograph Cards. (No two alike). Name on, 10c. Clinton Bros., Clintonville, Con.

Agricultural Machinery Emporium.

One of the substantial results of the increased development of the Pacific Coast States in the production of grain is the establishment of vast emporiums of agricultural machinery, where the farmer may supply himself with the most approved implements. Chief amongst these is that of Frank Brothers, 319 & 321 Market St. Here on the four floors, comprising the extensive premises, can be seen every description of agricultural implements, including W. A. Wood's celebrated mowers, reapers and twine binders; the Fon du Lac, Wis., La Belle wagons; Rock Island, Ill., Buford plows of all sizes; Pacific threshers and powers from Pitts of Chicago, Ill.; McSherry drills and seeders from Dayton, Ohio; Coates' sulky rakes; Chaplin revolving rakes and every fixture needed in the repair of these and like machines. The Oregon and Washington Territory trade is handled from the branch of the house at Portland. Mr. F. A. Frank conducts the business at San Francisco, and Mr. G. P. Frank at Portland. During the eight years that these enterprising gentlemen have been in the business on this coast they have found it rapidly and constantly extending. The crops in California may be short this year, but those of Oregon and Washington Territory will more than make up for the deficiency, so that the trade of this firm will be much larger than ever before. Inspection is requested.

Volunteer Testimonials from Those Who Have Used Booth's Exterminator

San Luis Obispo, June 10, 1881.

A. R. Booth—*Dear Sir:* I tried one of your cans of Squirrel Poison, and find it very good. I found forty two dead squirrels after putting it out, and I think there were more which I did not find. Yours,

J. B. Townsend.

Emmet, San Benito Co., Cal., Nov. 23, 1880

A. R. Booth:—I gave your Squirrel Poison a fair trial, and gave some to my neighbors. We find it as good as recommended, and are satisfied it is the best we have ever used. There will be no trouble in selling it in this county.

Hugh Mathews.

Important additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

Sample Copies.—Occasionally we send copies of this paper to persons who we believe would be benefited by subscribing for it, or willing to assist us in extending its circulation. We call the attention of such to our prospectus, terms of subscription, etc., and request that they circulate the copy sent.

Our attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

Hay Rakes.

The celebrated hay rakes manufactured by John Dodds, Dayton, Ohio, can be found in large stock at the San Francisco branch, 37 Market St. The old reliable Hollingsworth Rake has taken three Gold Medals at International Fairs. The Red Bird is cheap, simple and a great favorite. The new Reindeer is the strongest and most durable Self-Dump Rake on the market. The iron axle and wheels, rocker-frame movement, adjustable teeth, dumping device and other improvements make them the most desirable Rakes manufactured. See the agent, S. H Gould, before purchasing, 37 Market St., S. F.

Grain Cleaner.

Among the several grain cleaners brought to the notice of Threshermen this season, T. S. Bayley has completed and patented one which presents several points of superiority over all others. For cheapness, simplicity, easy draft, lightness, durability, capacity and convenience, it excells. The sieves are so arranged that the wheat screens can be taken out and barley run through from the thresher, thereby cleaning it more thoroughly. Prices, with header trucks, $350; with shop trucks, $325; without trucks, $275. For circulars and further particulars, address, T. S. Bayley, San Leandro, Cal.

Livery Stable in Oakland. We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

Annual Statistician of 1882.—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 502 Taylor St. Price, $4.

New Gig or Sulky.—Something novel and very elegant in the way of a Sulky, may be seen across the way from our office, at the store of Geo. A. Davis, the well-known Agricultural Hardware man. It must be seen to be appreciated. A cut of it will appear in our columns soon. Photographs sent on application to Geo. A. Davis S. F., or Jacob Price, San Leandro, who is the inventor of it.

Agents can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. Rideout & Co., 10 Barclay St., N. Y.

HOPKINS ACADEMY,
Oakland, Cal.

Rev H. F. Jewett............Principal.

This Institution, heretofore known as Golden Gate Academy, will open Tuesday, July 18, 1882. The building and grounds are undergoing extensive improvements. Classical, Literary and English courses. Telegraphy taught. Boys and young men received. Send for prospectus to H. E. JEWETT, Principal.

S. F. MARKET REPORT.

Note—Our quotations are for Wednesday, not Saturday, the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

San Francisco, Wednesday, June 7, 1882.

The near approach of new grain gives the markets a little weaker tone, and there is a disposition to wait a little until the new crop discloses its proportions more clearly. As the harvest has begun, new samples may be expected soon.

The latest from abroad is the following:

Liverpool, June 6.—Wheat: California spot lots are quiet, at 9s 7d@9s 9d. Cargo lots are 46s 6d for just shipped, 49s for nearly due and off coast. Receipts of Wheat the past three days, 146,000 centals, including 91,000 American.

The Foreign Review.

London, June 4.—The *Mark Lane Express*, in its review of the British Grain trade for the past week, says: Growing Wheats made scarcely any perceptible progress during the week. All crops want rain and warmer nights. The trade maintains a holiday character. Prices are generally 1s lower. The foreign trade is merely of a retail character. A large supply of Russian weakened rates, which were barely maintained. Off coast trade is quiet and buyers reserved. Ten cargoes arrived and 7 were sold. Cargoes on passage and for shipment were neglected. The floating bulk continued to decrease. Flour was cheaper and dull. The same may be said of foreign. Barley was unchanged; foreign was quiet. Oats were unchanged, foreign being in large supply and weaker. For Maize there was a retail demand. Stocks are small and prices unchanged. Sales of English Wheat during the week were 22,209 quarters, at 47s 7d ℔ quarter, against 26 137 quarters, at 43s 10d ℔ quarter, for the corresponding week of last year.

London Wool Market.

London, June 5.—At the Wool sales to-day 10 600 bales were disposed of, comprising New Zealand, Sydney and Victoria Prices were unchanged.

Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive according to the latest advices:

In port.	1882.	1881.
Engaged, tons	26,100	42,600
Disengaged, tons	21,000	2,500
To arrive, tons	282 200	302,800
Total	329,300	347,900
Decrease for 1882		18 600

The amount of tonnage under engagement yesterday to load Wheat was 20,800 tons, against 37,700 tons for the corresponding date last year, showing a decrease of 16,900 tons. There were 15 vessels under engagement yesterday morning at this port to load Wheat. The engaged and disengaged tonnage in port has a Wheat-carrying capacity for 70,600 short tons, against a capacity for 67,600 tons on the corresponding date last year. Freights are dull and weak, with but little spot demand and merely a fair inquiry for new crop loading. Quotations for iron vessels to U. K. are about £2 12s 6d.

Eastern Wool Markets.

New York, June 4.—The market for pretty much all kinds of domestic shows a somewhat unsettled and feverish tone, but the tendency is to harden somewhat. Desirable accumulations have become reduced to a very low limit, especially in the way of fleeces. The advices from the interior indicate a late slow movement of the new clip. When growers get more generally at work, allowing for a steady confirmation of the cautious plan of hand to mouth operations so long current, it is surmised that a basis for additional tone will be secured. Should anything occur to stir manufacturers into greater anxiety, a decided stimulus is sure to follow. In Texas and California clips buoyancy has of late been somewhat checked, but stocks are held firmly at primary points, and accumulate slowly. The Southern markets are firm. Sales include 100 bales Spring California at 26 cents; 20 000 lbs at 2:@35c; 100 bales Fall scoured at 55 cents.

Boston, June 6.—There has been very little change in the Wool market since last week. The demand from manufacturers is moderate, and they hesitate to pay the prices asked for new California, of which there is a good assortment offering. New Texas is in good demand. Ohio and Pennsylvania are quoted at 40@44c, as to quality and condition. Good average X and XX scarce, and quoted nominally at 39@40c; X combing and delaine are quiet at 43@48c. Unwashed combing is dull, and prices nominal. Unwashed at 25@32c for fine and medium, with choice selections higher. California is quiet, with no sales of any consequence. Pulled Wools are in moderate demand. Common and choice supers at 30@48c; new good and choice X. 40@47c. There have been further sales of Australia at 42½@45c, and Montevideo at 35@36c. Carpet Wools are quiet and prices unchanged.

Philadelphia, June 6—The supply of Wool is light and prices are firm.

BAGS—Sales: 25,000 Standard Calcutta Grain Bags, July buyer, 22x36, $9 30. For Calcutta, June, $9 was bid, $9.15 asked. No sales on the Grain Exchange. Bids and offers were: Calcutta, June, $9.25 asked; July, $9 bid, $9 25 asked; Dundee, June, $3 80 asked.

BARLEY—Barley is quiet and dealers expectant and not inclined to invest freely. Sales on Produce Exchange call: 100 tons No. 2 feed Barley, Dec del, $1.25, per ctl; 100 tons No. 1 Brewing Barley, Oct del, $1.60 per ctl; 100 tons No. 2 Feed Barley, seller 1882, $1.17½ per ctl; 100 tons do do, Dec del, $1.24 per ctl; 100 tons do do, Sept del, $1 20 per ctl; 100 tons do do. seller, 1882, $1.18 per ctl; 100 tons do do, Dec del, $1.23 per ctl.

BEANS—Prices are generally unchanged, except a slight improvement in the best Pink and Red Beans.

CORN—No sales on call. Prices are nominally at $1.75@$1.77½.

DAIRY PRODUCE—Butter is plenty and rates the same as last week. Cheese is hardly quotable above 13c.

EGGS—Eggs are just as last week, 23c @ 25c ℔ dozen, and supplies fair.

FRESH MEAT—Beef values have dropped off 1c ℔ lb. much to the delight of the retailers. Other meats are unchanged.

FRUIT—Apricots were depressed a day or two but rallied. Currants are abundant and the jelly makers are profiting by the low rates. Cherries are about the same as last week. Raspberries come in slowly, and are still high. Prices of all fruits will be found in our table. A few California oranges are selling up to $5 ℔ box.

HOPS—Hops are quiet. The Mendocino growers have adopted a trademark for their Russian River Hops which will be henceforth used by their Association.

OATS—Oats are quiet, but many are reported selling at a rate below late prices. The best are now held at $2 ℔ ctl.

ONIONS—Onions are low, the ruling rate being 50c ℔ ctl.

POTATOES—New Potatoes are being sold at $1.25 to $1 87½ ℔ ctl and the quality is very good.

PROVISIONS—Prices are steady and the trade fair.

POULTRY AND GAME—Better prices are generally realized for fowls, Turkeys, Ducks and Geese. Hare are scarce and high.

VEGETABLES—Our list shows a general overhauling of prices since last week. The markets are now well supplied with all green stuff.

WHEAT—Wheat is held a shade lower owing to the approach of new grain. On Call there was sold 100 tons No. 1 White Wheat, September del, $1.68¾ per cental. Bids and offers were: Extra Choice, Stockton, spot, $1 69 asked; No. 1 White, July, $1.69 bid, $1.71 asked; September, $1 65 bid, $1.70 asked; October, $1.70 asked; No. 2 White, August, $1 64 bid, $1.66 asked. Sales on the Grain Exchange of (tons) 100 No. 2 White, September, $1.63; 100, $1 63½; 750, $1.63½; 100, $1 63¾; 100, October, $1.63¾; 200, $1.64; 600, November, $1 63½, and 500, $1.63½. Bids and offers were: July and August, $1.63 bid, $1 64 asked; No. 1 White, August, Port Costa, $1.67½ bid, $1.69½ asked; No. 1 Sonora, August, Port Costa, $1.65 bid, $1.68½ asked.

WOOL—Wool is still very quiet. Prices are a shade better than we quoted last week, but there is little doing.

Domestic Produce.

WHOLESALE.

Wednesday m., June 7, 1882

BEANS & PEAS.	
Bayo, ctl	2 75 @3 25
Butter	3 75 @4 25
Castor	3 50 @4 00
Pea	4 00 @4 25
Red	2 .0 @3 00
Pink	2 50 @3 00
Large White	3 50 @3 75
Small White	4 00 @4 25
Lima	4 00 @4 50
Field Peas, b'lk eye	1 5 @1 75
do, green	2 00 @2 25
BROOM CORN.	
Southern	3 @ 3½
Northern	4 @ 6
CHICCORY.	
California	4 @ 4½
German	6½@ 7
DAIRY PRODUCE, ETC.	
BUTTER.	
Cal. Fresh Roll, lb.	27 @ 29
do Fancy Brands	30 @ 31
Pickle Roll	— @ —
Firkin, new	28 @ 30
Eastern	18 @ 20
New York	— @ —
CHEESE.	
Cheese, Cal., lb	11½@ 13
EGGS.	
Cal. Fresh, doz	23 @ 25
Ducks	— @ —
Oregon	— @ —
Eastern, by expr'ss	— @ —
Pickled here	— @ —
Utah	— @ —
FEED.	
Bran, ton	15 50 @16 50
Corn Meal	— — @38 00
Hay	10 00 @15 00
Middlings	23 00 @24 00
Oil Cake Meal	— — @27 50
Straw, bale	— 62½@— 70
FLOUR.	
Extra, City Mills	5 25 @5 50
do, Co'ntry Mills	4 75 @5 00
do, Oregon	4 75 @5 12½
do, Walla Walla	4 50 @5 00
Superfine	3 50 @4 25
FRESH MEAT.	
Beef, 1st qual'y, lb	7½@ 8
Second	6 @ 7
Third	5 @ 5½
Mutton	4 @ 5
Spring Lamb	6 @ 8
Pork, undressed	6½@ 7¾
Dressed	9¼@ 10¼
Veal	7½@ 8
Milk Calves	7½@ 8
do, choice	— @ 10
GRAIN, ETC.	
Barley, feed, ctl	1 70 @1 74
do, Brewing	1 80 @1 90
Chevalier	— @1 70
Buckwheat	1 50 @1 75
Corn, White	— @ —
Yellow	1 75 @1 77½
Small Round	— @1 75
Oats	1 85 @1 92½
Milling	1 95 @2 00
Rye	2 30 @2 35
Wheat, No. 1	1 67½@1 70
do, No. 2	1 62½@1 65
do, No 3	1 45 @1 50
Choice Milling	— @1 70
HIDES.	
Hides, dry	19 @ 19½
Wet salted	9½@ 11
HONEY, ETC.	
Beeswax, lb	23 @ 25
Honey in comb	— @ 15
Extracted, light	8 @ 9
do, dark	7 @ 8
HOPS.	
Oregon	20 @ 21
California, new	22 @ 25
Wash. Ter	19 @ 20
Old Hops	— @ —
NUTS—Jobbing.	
Walnuts, Cal	10 @ 11
do, Chile	7½@ 8
Almonds, hd shl lb	8 @ 10
Soft shell	15 @ 17
Brazil	10 @ 11
Pecans	13 @ 15
Peanuts	6½@ 7
Filberts	14 @ 15
ONIONS.	
Red	— @ —
Silverskin	— @ 50
Oregon	— @ —
POTATOES.	
New, ctl	1 25 @1 37½
Early Rose	— @ —
Petaluma, ctl	— @ —
Tomales	— @ —
Humboldt	— @ —
" Kidney	— @ —
" Peachblow	— @ —
Jersey Blue	— @ —
Cuffey Cove	— @ —
River, red	— @ —
Chile	— @ —
do, Oregon	— @ —
Oregon Peerless	— @ —
Salt Lake	— @ —
Sweet	— @ —
POULTRY & GAME.	
Hens, doz	6 00 @ 7 50
Roosters	5 00 @10 00
Broilers	3 00 @ 7 00
Ducks, tame, doz	5 00 @ 6 00
Geese, pair	1 00 @1 25
do, young	1 25 @1 50
Wild Gray, doz.	— @3 00
White do	50 @1 00
Turkeys	14 @ 18
do, Dressed	— @ —
Turkey Feathers, tail and wing, lb.	10 @ 20
Snipe, Eng	1 75 @2 00
do, Common	50 @ 75
Quail, doz	75 @ 80
Rabbits	1 25 @1 50
Hare	2 00 @2 25
Venison	5 @ 7
PROVISIONS.	
Cal. Bacon, extra clear, lb	14½@ 15
Medium	14½@ 15
Light	14½@ 16
Lard	13 @ 16
Cal. Smoked Beef	11½@ 12½
Shoulders	9½@ 10½
Hams, Cal	13½@ 14
do, Eastern	16 @ 16½
SEEDS.	
Alfalfa	14 @ 16
do Chile	— @ —
Canary	3½@ 4
Clover, Red	14 @ 15
White	45 @ 50
Cotton	— @ 20
Flaxseed	2½@ 3
Hemp	— @ 5
Italian Rye Grass	25 @ —
Perennial	25 @ —
Millet, German	10 @ 12
do, Common	7 @ 10
Mustard, White	1½@ 2
Brown	2½@ 3
Rape	2½@ 2¾
Ky Blue Grass	20 @ 25
2d quality	16 @ 18
Sweet V Grass	— @ 75
Orchard	20 @ 25½
Red Top	— @ 15
Hungarian	8 @ 10
Lawn	30 @ 40
Mesquit	10 @ 12½
Timothy	9 @ 10
TALLOW.	
Crude, lb	7 @ 7½
Refined	10½@ 11
WOOL, ETC.	
SPRING—1882.	
San Joaquin, free	20 @ 23
do, fair	18 @ 19
do, dusty	15 @ 17
Southern Coast	16 @ 22
Stanislaus & Tuolumne	23 @ 26
Sonoma & Mendocino	25 @ 28
Nor. Sacr mento	25 @ 27½

Fruits and Vegetables.

[WHOLESALE.]

Wednesday m., June 7, 1882.

FRUIT MARKET.	
Apples, bx	50 @ 75
Apricots, box	90 @ 1 25
Bananas, bnch	2 50 @ 4 00
Cherries, box	— 40 @— 90
Cherry Plums	1 25 @ 1 75
Cocoanuts, 100	6 00 @ 7 00
Cranberries bbl	12 50 @14 00
Currants, chst	3 00 @ 6 00
Gooseberries	— — @— 4
Limes, Mex	10 00 @12 00
do, Cal, box	2 00 @ 8 00
Lemons, Cal, bx	1 75 @ 2 50
Sicily, box	7 00 @ 7 50
Australian	— — @— —
Oranges, Cal, bx	4 50 @ 5 00
do, Tahiti M	— — @25 00
do, Mexican	15 00 @17 00
do, Loreto	— — @— —
Pears, bsk	— — @— 75
Pineapples, doz	8 00 @ 9 00
Raspberries bsk	16 @ 20
Strawb'rs, chst	5 00 @ 7 00
DRIED FRUIT.	
Apples, sliced, lb	— — @— 10
do, evaporated	— — @— 12½
do, quartered	— 6 @— 6½
Apricots	— 18 @— 20
Blackberries	— 14 @— 16
Citron	— 28 @— 30
Dates	— 9 @— 10
Figs, pressed	— 4 @— 6
do, loose	— 3½@— 4
Nectarines	— 14 @— 16
Peaches	— 10 @— 10½
do pared	— 16 @— 19
Pears, sliced	— 9 @— 6½
do whole	— 7 @— 8
Plums	— 6 @— 7
Pitted	— 11 @— 12½
Prunes	— 9 @— 10
Raisins, Cal, bx	— — @ 2 50
do, Halves	— — @ 2 75
do, Quarters	— — @ 3 00
Eighths	— — @ 3 25
Zante Currants	— 8 @— 10
VEGETABLES.	
Artichokes, doz	— 10 @— 12
Asparagus, box	— 50 @— 75
Beets, ctl	— — @— 75
Cabbage, 100 lbs	— 87½@ 1 00
Carrots, sk	— 65 @— 75
Cauliflower, doz	— 40 @— 50
Cucumbers, doz	— 40 @— 75
Garlic, lb	— 5 @— 6
do, poor	— 1 @— 1½
Lettuce, doz	— 10 @— —
Mushrooms, bx	— — @— —
Okra, dry, lb	— — @— 50
Peas, green, lb	— — @— 1½
do, sweet	— 1½@— 2
Parsnips, lb	— — @— 2
Peppers	— 10 @— 12½
do, Chile	15 @ 20
Rhubarb, bx	— 50 @ 1 00
Squash, Marrow fat, ton	— — @50 00
String Beans	— 3½@— 4
do, wax	— 4 @— 4½
Summer Squash, box	1 00 @ 1 25
Tomatoes	— 10 @— 12½
do, Vacaville	15 @ 20
Turnips, ctl	— 75 @ 1 00

Bags and Bagging.

[JOBBING PRICES.]

Wednesday m., June 7, 1882.

Eng Standrd Wheat	8¾@ 9
Cal Manufacture	
Hand Sewed, 22x36	8¾@ 9
20x36	8½@ 8¾
23x40	12 @13
24x40	12½@13½
Machine Swd 22x36	8½@ 9
Flour Sks, halves	9½@10½
Quarters	6 @ 6½
Eighths	4½@ 4½
Hessian, 60 inch	— @12
45 inch	9½@ 9¾
40 inch	8½@ 8¾
Wool Sks Hand Swd	
3½ lb	— @47
4 lb do	52½@55
Machine Sewed	— @49½
Standard Gunnies	18½@19
Bean Bags	6½@ 7
Twine, Detrick's A	32½@35
" " AA	35 @37

Gold, Legal Tenders, Exchange, Etc.

[Corrected Weekly by Sutro & Co.]

San Francisco, June 7, 3 p. m.

Silver, ½.

Gold Bars, 890@910. Silver Bars, 10@18 ℔ cent. discount.

Exchange on New York, 5 premium; London, 49¼@49½; Paris, 5 13 francs ℔ dollar; Mexican dollars, 91@92.

New York (4 per cent), 120½

Commission Merchants.

JAS. P. HULME, Late Miller & Co. JACKSON HART.

HULME & HART,
(Successors to MILLER & CO.)
Wool, Grain,
AND GENERAL
Commission Merchants.
10 Davis Street, near Market,
SAN FRANCISCO.

DALTON & GRAY,
Commission Merchants
And Dealers in
CALIFORNIA AND OREGON PRODUCE,
Green and Dried Fruits,
Grain, Wool, Hides. Beans. Potatoes.
404 & 406 DAVIS STREET,
P. O. Box 1936 SAN FRANCISCO.
CONSIGNMENTS SOLICITED.

WOOL and GRAIN.
J. H. CONGDON & CO.,
Produce & General Commission Merchants
6 STUART ST., COR. MARKET, S. F.
Orders for Goods not in our line will be carefully purchased by experienced buyers. Ranch Supplies and the best Sacks and Twine, Tobacco, Sheep Dips, etc., furnished to customers Doing business exclusively on commission. Liberal advances made on consignments at low rates of interest. Personal attention given all consignments. We are agents for the
PARADISE MILLS FLOUR.
The lowest priced first-class Family Flour in the market—try it. All orders from the interior promptly filled.

PETER MEYER. LOUIS MEYER.
MEYER BROS. & CO.,
—IMPORTERS AND—
Wholesale Grocers,
—AND DEALERS IN—
TOBACCO AND CIGARS.
412 FRONT STREET,
Front Street Block, bet. Clay & Washington, San Francisco.
☞ Special attention given to country traders. ☜
P. O. Box 1940.

DAVIS & SUTTON,
No. 75 Warren Street, New York.
Commission Merchants in Cal. Produce
References.—Tradesmen's National Bank, N. Y.; Ellwanger & Barry, Rochester, N. Y.; C. W. Reed; Sacramento, Cal.; A. Lusk & Co., San Francisco, Cal.

SEND YOUR CONSIGNMENTS TO
COMMISSION MERCHANTS
CALIFORNIA & OREGON PRODUCE
AND WHOLESALE DEALERS IN
DAVIS ST.
SAN FRANCISCO
"THE OLDEST HOUSE"

HATCH & BARCLAY,
Commission Merchants,
(Members of San Francisco Produce Exchange.)
30 California Street, San Francisco.

E. DETRICK & CO.,

Importers, Manufacturers and Dealers in

BAGS AND BURLAPS OF ALL KINDS.

BAG TWINES—HYDRAULIC HOSE.

SOLE AGENTS FOR

MOUNT VERNON COMPANY'S DUCK, ALL WIDTHS.

RUSSELL MANUFACTURING CO.'S COTTON BELTING, RUSSELL MANUFACTURING CO.'S SEAMLESS LINEN HOSE, TOWER'S CELEBRATED OILED CLOTHING.

TENTS, HAMMOCKS, CAMP-COTS, CHAIRS, STOOLS,

5 to 9 California and 108 to 112 Market St. **FLAGS.** San Francisco, California.

ESTABLISHED 1860.

P. STEINHAGEN & CO.,

(Successors to J. W. GALE & CO.,)

Fruit and General Commission Merchants,

And Wholesale Dealers in California and Oregon Produce, *Also, Grain, Wool, Hides, Beans, Potatoes, Cheese, Eggs, Butter and Honey.*

Brick Stores: No 402 Davis Street, and 120 Washington St., S. F.

Prompt Returns. Advance Liberally on Consignments.

MOORE, FERGUSON & CO.,

COMMISSION MERCHANTS

Grain, Flour, Wool, Etc.

[Members of the San Francisco Produce Exchange].

211 and 213 Clay St., S. F.

☞Liberal advances made on Consignments

Pacific Mail Steamship Co.

The Company's Steamers will sail

For Yokohama and Hongkong.

CITY OF TOKIO.....June 29

At 2 P. M.

Excursion Tickets to Yokohama and return at special rates.

For New York, via Panama.

COLIMA.....June 19

At 12 o'clock noon,

Taking freight and passengers to Mazatlan, Acapulco, San Jose de Guatemala and La Libertad.

Fare to New York—Cabin, $139; Steerage, $65.

Tickets to and from Europe by any line for sale at the lowest rates; also, for Havana and all West India ports.

For HONOLULU, AUCKLAND and SYDNEY

CITY OF NEW YORK.....July 1st

At 2 P. M., or on arrival of the English mails.

$10 additional is charged for Upper Cabin Passage.

Round the World Trip Tickets, via New Zealand and Australia, $650.

Tickets must be purchased at least one hour before time of sailing. For freight or passage apply at the office, corner First and Brannan streets.

WILLIAMS, DIMOND & CO., General Agents.

E. W. WOOLSEY & SON,

Importers and Breeders of THOROUGHBRED

SPANISH MERINO SHEEP.

Choice RAMS and EWES for Sale. Ranch at Fulton, Sonoma county, Cal., and N. P. R. R. DIRECT TO THE RANCH, via Guerneville Branch at Fulton. Address, E. W. WOOLSEY & SON, Fulton, Sonoma Co., Cal., or 418 California St., S. F.

WM. F. SMITH, M. D.,

OCULIST.

Formerly at 313 Bush street, has removed to Phelan's Building, Rooms 300 to 304. Hours for consultation, 12 M. to 3 P. M. Take the Elevator.

YOSEMITE HOUSE.

MAIN ST., STOCKTON, CAL. FIRST-CLASS HOUSE

JAMES CAVIN, Proprietor.

This House is the Leading Hotel of the City, containing all the modern improvements. General Ticket Office for the Big Trees, Yosemite Valley, Bodie, and General Stage Office for all the Southern Mountain Towns. The Yosemite Coach will convey guests from the boats and all trains, free of charge.

Summer Resorts.

SODA BAY HOTEL,

A NEW AND BEAUTIFUL

SUMMER RESORT.

SODA BAY, on Clear Lake, Lake county, Cal., the favorite lacustrine resort, is justly regarded as combining greater advantages and affording more attractive and interesting natural features than any other watering place in the State. The climate, as a relief from the severe winds of the coast, is invaluable for the health of children and delicate persons—indeed, for all requiring the change demanded annually by the residents of San Francisco. While entirely free from the fog, the wind and the chill of the sea coast, the climate is greatly modified from the heat of the interior by the proximity of the beautiful lake, upon the margin of which, for a distance of two miles the grounds are extended. A splendid grove of live-oak, pine and manzanita tree, of great age and gigantic growth, affords the most delightful shade. A beautiful bathing beach offers the choicest facilities for aquatic pastime, far from the danger of the sea surf or chill.

The Great Spring—Indian name, OMAR-ACH-HAH-BEE, emitting not less than a million gallons daily, of delicious effervescing soda water, is one of the most interesting natural curiosities of California, and the bath in its exhilarating fountain has an electrical effect that is as delightful as it is beautiful. Extraordinary solfataric action all around the shore of the bay, due to the presence of innumerable mineral springs and chemical action upon a vastly extended scale, has given the place the name by which it is known—Soda Bay.

Daily excursions are made to Borax Lake, Sulphur Banks, and other points of interest. A new trail leads to the summit of Uncle Sam, 4,400 ft. above the sea.

Ample provisions are made for the entertainment of the patrons of this popular resort. The Hotel and the cottages are furnished with comfort and taste. Among the diversions of the place are boating and sailing—yacht and steamer, bowling, billiards, croquet, equestrian exercise, fishing and hunting, and a beautiful pavilion for music and dancing; in short, nothing is lacking for the enjoyment of those who seek rest and recuperation, or interesting and healthful recreation beneath the shady oaks and by the ever beautiful lake, in a climate which, for health and for comfort, is acknowledged to be unsurpassed, if, indeed, equaled in the world. Billiards, croquet, ten pins, and baths, free.

To reach Soda Bay from San Francisco, go by train to Calistoga or Cloverdale, thence by stage to Kelseyville, at which place a carriage from the hotel will meet passengers. Through time, 11 hours. For further information address,

A. K. GREGG, Uncle Sam P. O., Lake Co., Cal.

ANDERSON'S SPRINGS,

LAKE COUNTY, CALIFORNIA.

NINETEEN MILES FROM CALISTOGA,

Napa County, Five miles from Middletown, and 10 miles from the **Great Geysers**, between which and ANDERSON'S SPRINGS there are good wagon roads.

Hot Sulphur and Steam Baths

For the Cure of

Rheumatism, St. Vitus' Dance, Paralysis, Dropsy, Etc.;

Cold Sulphur for Dyspepsia, diseases of the Stomach and Kidneys.

SCENERY UNSURPASSED!

CLIMATE MILD AND EQUABLE!!

CONSUMPTIVES generally improved in health, and asthmatics are invariably relieved.

TROUT FISHING IN THE GROUNDS

Deer Hunting in the immediate vicinity.

NEW COTTAGES for the better accommodation of guests. Cooking good

---

BARTLETT SPRINGS.

Situated 16 Miles Northeast of Clear Lake, in Lake County,

Forty miles West of Williams, Colusa county, on the main traveled road from Colusa to Mendocino.

Three Different Routes to the Springs,

One via WILLIAMS, one via CLOVERDALE LAKEPORT and UPPER LAKE, one via CALISTOGA and LOWER LAKE, and all connecting with the train

LEAVING SAN FRANCISCO AT 8 A. M.

Fare will not exceed TWELVE Dollars either way. Daily Mail via LAKEPORT, Semi-weekly mail via WILLIAMS. Post Office, Express Office and Telegraph Office here all the year through.

C. R. CLARKE, J. C. CRIGLER, Proprietors.

Pacific Congress Springs.

This Celebrated Resort for PLEASURE and HEALTH will be opened for the reception of guests

On and after April 15th.

Stage connections made at LOS GATOS with MORNING and AFTERNOON trains of the Narrow-gauge Railroad.

THROUGH TICKETS

Can be purchased at FERRY LANDING, foot of Market street, San Francisco, PRICE, $2.75

ROOMS CAN BE SECURED

And arrangements made at any time by addressing

LEWIS A. SAGE,

Saratoga, Cal. Proprietor.

F. A. HILL, Superintendent. E. P. PALMER, Secretary.

BENICIA AGRICULTURAL WORKS,

Recently removed from San Leandro, to Benicia, Cal. Formerly Sweepstake Plow Co.

Manufacturers of

AGRICULTURAL IMPLEMENTS,

Gang Plows, Road and Field Single Plows, Iron and Wood Frame Harrows, Cultivators, Seed Sowers, Hay Presses, Haying and Harvesting Machinery, Headers, Iron Farm and Freight Wagons, Patent Iron Gear Spring Wagons,

Spring and Thoroughbrace Wagons

OF ALL KINDS.

Buckboards, Barrows, Store and Warehouse Trucks, Grain Cleaners, Barley Crushers, Eureka Ditching and Grading Plows, Sweepstake Quartz Mills, Etc.

The largest and most complete Agricultural Works on the Coast, and located at Benicia, Cal., with new and extensive works. The buildings are over 1,600 ft. in length and have a floor surface of 105,412 square feet, or nearly 2½ acres. The wharves, connected with the works by rail, are over 600 ft. in length, and have a floor surface for more than 40,000 square ft., including warehouse. The machinery is entirely new, of latest improved patterns throughout. With this Mammoth Establishment and skilled mechanics in every department, we are prepared to build every single implement to order, and parties needing suggestions or assistance in perfecting inventions will have the benefit of our aid and assistance, thereby saving time, labor and coin. Our facilities are such as to insure rapid work and prompt shipments, either by rail or water, thus making a good saving for parties in the interior who order goods from these Works. We particularly invite correspondence from the country, and prompt responses will be sent to all inquiries. We have increased facilities for manufacturing not only Spring, Farm and Thoroughbrace Wagons, but all styles of Vehicles will be built to order, including Iron Gear Spring Wagons with the Celebrated Patent Iron Wheel; also, the Sweepstake Patent Iron Farm and Freight Wagon. We are sole manufacturers of the Celebrated Hill's Eureka Sulky, Gang Plow, the most popular Gang in the State of which there are a greater number in use than any other make. Always victorious at plowing matches, and has made a clean sweep of premiums since 1870, and at the late State Fair at Sacramento, was awarded the first premium of one hundred dollars.

Hill's Eureka Single Sulky Deep Tiller.
" " " " Tule Plow.
" Improved Granger Gang.
" Im'd Single Sod and Tule Plow.
" Single Plows.

Hill's Sweepstake Road and Breaking Plows
" Side Hill Gang.
" Double Deep Tiller
Fresno Ditching and Grading Plow.

Gillis' Improved Horse Powers.
Harrows
Gem Seed Sowers
Hill's Improved Headers
Wood and Iron Harrows, etc.

Remember that Water-Communication insures Cheap Freights. That dealers, farmers and others living at, or near the Sacramento or San Joaquin rivers or their tributaries, can make a GREAT SAVING OF FREIGHT by buying Goods manufactured by the BENICIA AGRICULTURAL WORKS, either direct, or through MESSRS. BAKER & HAMILTON, agents, San Francisco and Sacramento. The overland train passes between wharf and works, so that parties from the interior, or from San Francisco, will be landed at the door of the factory. Wholesale and retail dealers, farmers and consumers are cordially invited to call at the works and examine for themselves. Our line of manufacture embraces all of California's Standard makes of Agricultural Implements. To excel all in our line of Manufacture in producing the best Implements, with all the Latest Practical Improvements, which are peculiarly adapted to our soil and the Pacific Coast, both in tilling ground and harvesting the grain; producing articles when combined all that genius, enterprise and science can insure. A guarantee to the purchaser, and a credit to the manufacturer. Correspondence is invited that we may send Circulars and descriptive lists. Address,

BENICIA AGRICULTURAL WORKS,

Or BAKER & HAMILTON, San Francisco and Sacramento.

Highland Springs

SANITARIUM.

This popular and healthful summer and winter resort for families, pleasure seekers and invalids, is situated in

Lake County, 25 Miles from Cloverdale,

Seven miles south of Lakeport, four miles of Kelseyville, and in sight of Clear Lake, at an altitude of 1700 feet, and is **Sheltered from the Cooling Coast Winds and Fogs** by mountains 1600 feet in night, which for

Grandeur and Beauty of Scenery are Unsurpassed on the Pacific Coast,

While the Beneficial Effects of its Mineral Waters are equal to any in the United States or Europe.

MAGIC SPRING.

Analyzed by Prof. W. B. Rising, University of California.

TEMPERATURE.....87°

	Grains per U. S. Gallon.
Chloride of Sodium	1.290
Bicarbonate of Potash	0.544
Bicarbonate of Soda	21.763
Bicarbonate of Lime	50.411
Bicarbonate of Magnesia	70.243
Bicarbonate of Iron	0.973
Bicarbonate of Manganese	trace
Silica	7.398
Alumina	0.160
Organic Matter	trace
Free Carbonic Acid	74.462
Total	227.262

W. B. RISING, Berkeley, April 3, 1882.

DR. C. M. BATES (formerly of San Francisco), having become sole proprietor, by purchase and lease, of these justly celebrated Springs, will devote all necessary time and attention to persons requiring the use of the waters.

Good Hotel and Cottage Accommodations.

Carriages, Buggies and Saddle Horses Furnished at Reasonable Rates.

Cloverdale and Lakeport stage stops at hotel daily. Post Office and Telephone connected with hotel.

Direct Route via San Rafael and Cloverdale 7:10 A. M., will arrive at Springs 5:30 P. M.

By steamer "DONAHUE," via Donahue Landing 2:30 P. M., will remain over night in Cloverdale; and via Napa and Calistoga, 8:00 A. M.

On Tuesdays, Thursdays and Saturdays

Will be met at Kelseyville with private conveyance, if notified.

For further particulars, address

DR. C. M. BATES,

Highland Springs, Lake Co. (via Cloverdale).

HARBIN HOT SULPHUR SPRINGS,

LAKE COUNTY, CAL.

The Springs are now open for the reception of guests. Stages leave Calistoga daily, on arrival of morning trains from San Francisco and Sacramento. Stage Fare Reduced to $3. RICHARD WILLIAMS, Proprietor.

MAMMOTH GROVE HOTEL,

Calaveras Big Trees,

CALAVERAS COUNTY, CAL.

J. L. SPERRY, - - Proprietor.

Tourists can find at the Calaveras Group larger, taller and a greater number of Big Trees than can be found in all other groves of California combined.

THE MAMMOTH GROVE HOTEL is situated right in the Calaveras Grove. This grove contains 93 of these giants of the forest.

THE SOUTH PARK GROVE

Is six miles distant, and contains 1,380 Big Trees of immense size. This grove has been inaccessible to visitors until quite recently. A good horseback road now connects the two groves. There is the finest trout fishing and hunting in the immediate vicinity.

Those seeking health or pleasure can find the very best climate in California, and first class hotel accomodations.

Fare from San Francisco $11; from Stockton, $8. Leave Stockton at 8 o'clock A. M.; by rail to Milton. Thence by stage coach to Trees—same day.

Stage to and from Yosemite leaves and arrives daily.

No. 3 Montgomery St., S. F.

CLEAR LAKE

AND

CALISTOGA STAGE LINE.

San Francisco

—TO—

LAKEPORT

In Eleven Hours.

Passengers leave San Francisco via C. P. R. R., at 8 A. M.; arrive at Calistoga 11:15 A. M. Leave Calistoga at 12 M. daily (Sundays excepted); arrive at Lakeport in evening. On Tuesdays, Thursdays and Saturdays stages leave Calistoga for Lakeport via Middleton, Glenbrook, Kelseyville and Soda Bay; Returning alternate days.

This is the Most Direct Line from San Francisco to Lakeport.

Most Picturesque and Romantic Route on the Coast. From Mt. St. Helena it affords the traveler a view of the famed Napa and Russian River Valleys and the Coast Range; and from Cobb Mountain to the great Clear Lake Region in front and the Pacific Ocean in the rear. This line connects with stages for Anderson, Adams, Siegler, Howard Springs and Soda Bay. On Mondays, Wednesdays and Fridays stages leave Calistoga at 12 M. for Middleton, Guenoc, Lower Lake, and Sulphur Banks; returning alternate days. This line connects at Lower Lake with stages for Siegler, Howard, Adams and the celebrated Bartlett Springs. These lines are stocked with fine

SIX-HORSE CONCORD COACHES!

Driven by the most skillful drivers on the coast. For full information and tickets apply to SAM. MILLER, Tourist and Ticket Agt., 2 New Montgomery St., Palace Hotel.

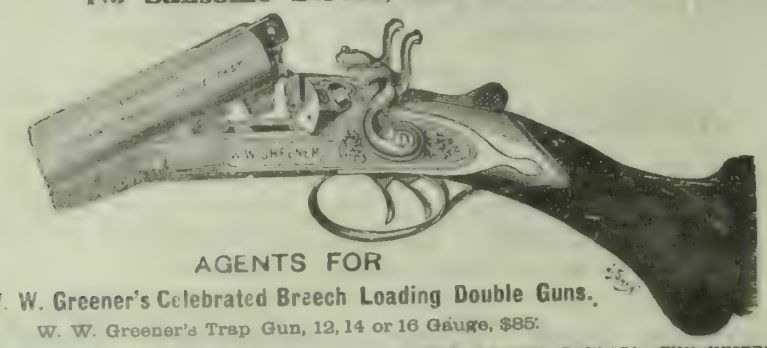
☞Round Trip Tickets to Lakeport and Return, $12.☜ Single Tickets $6.50.

Lakeport office at W. W. Green's Hotel.

JOHN CLARK, Agent. W. F. FISHER, Proprietor.

Nathaniel Curry & Bro..

113 Sansome Street, San Francisco.



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W. W. Greener's Celebrated Breech Loading Double Guns.

W. W. Greener's Trap Gun, 12, 14 or 16 Gauge, $85.

FULL STOCK OF COLTS, PARKER AND REMINGTON GUNS, SHARPS, BALLARD, WINCHESTER, KENNEDY, MARLIN, and REMINGTON SPORTING RIFLES; PISTOLS OF ALL KINDS.

Ammunition in quantities to suit. A liberal discount to the trade. Price List on Application

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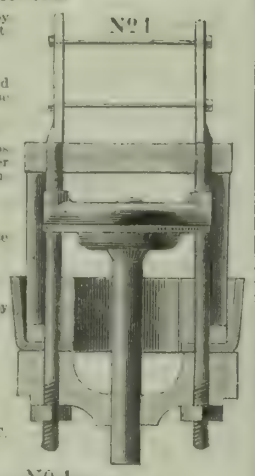
RUHL'S PATENT

LIFT AND SUCTION PUMP.

F. A. RUHL, Patentee.



These Pumps are manufactured exclusively by F. A. RUHL made of the best material and warranted by us to give entire satisfaction. Of

DEEP WELL PUMPS

We manufacture the following sizes: 3, 4, 5, 6 and 7 inches in diameter, and we guarantee them to raise water 200 feet and over.

HALF LIFT AND HALF SUCTION PUMPS

Sizes 3 and 4 inches in diameter. These Pumps are intended to go into narrow wells, and raise water about 50 feet, and they will do the work where a common Douglas Pump fails.

Suction or Irrigation Pumps.

Sizes 3, 4, 5, 6, 7, 8 and 10 in diameter. These Pumps are

Adapted for Shallow Wells,

Where water can be had from 15 to 25 feet. They are excellent to irrigate from 1 to 25 acres of land. They also make the finest

TANK PUMPS

To raise water to ANY DESIRED HIGHT.

And they are by far the best

Over force Pump,

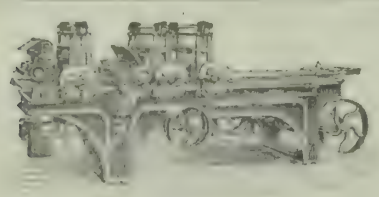
As there is no packing or priming required.

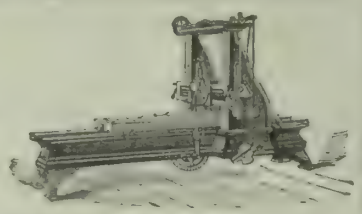
Jobbing and Roofing

Of every kind done satisfactorily, and at

Reasonable Rates

F. A. RUHL,
No. 183 Hunter St.,
Opposite Court House,
Stockton, Cal.





Berry & Place Machine Company,

PARKE & LACY, Proprietors

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Importers and Dealers in every Variety of

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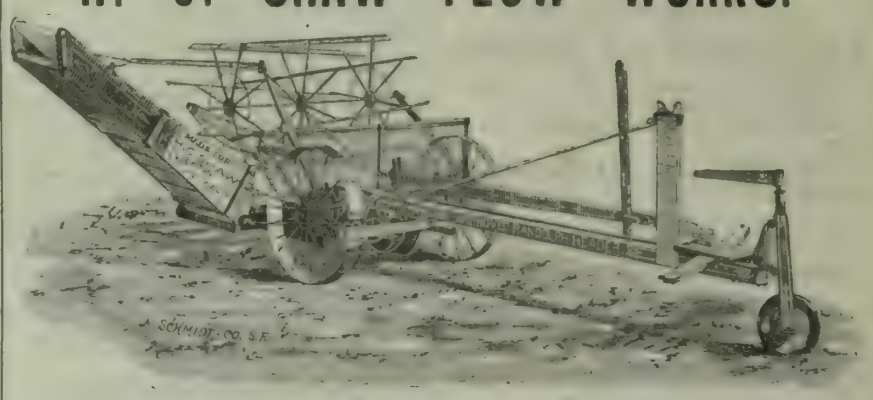

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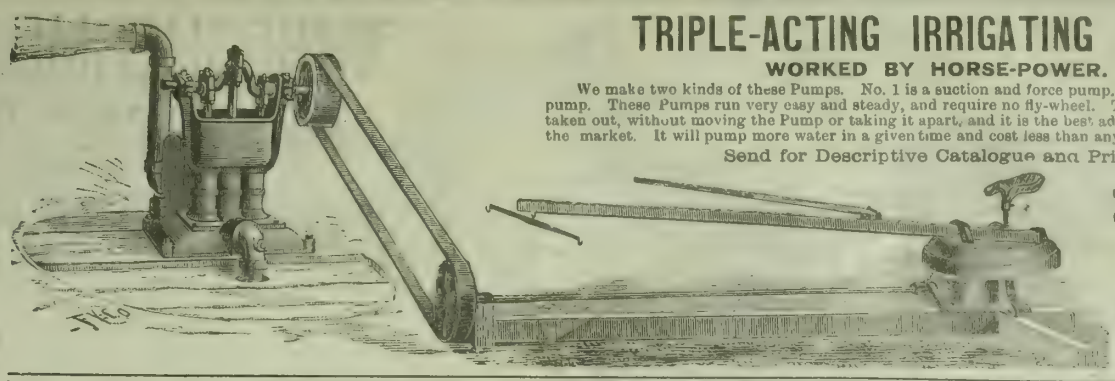

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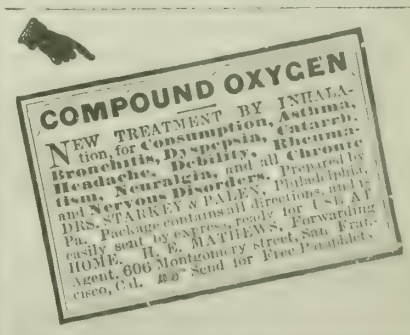

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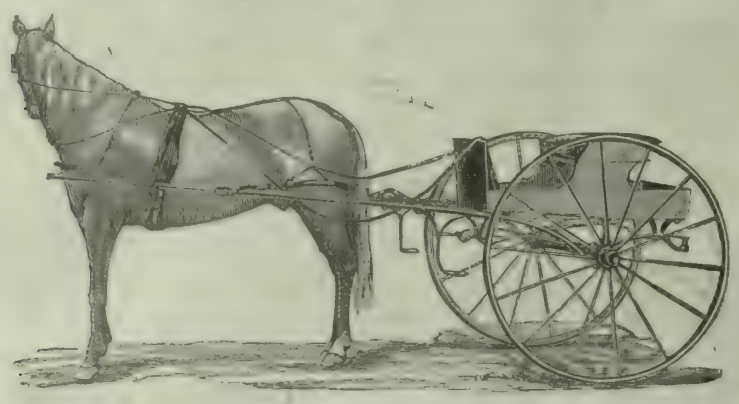

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The neatest thing yet for doing errands in town, carrying children to school and for breaking colts.

Points of Superiority Over Other Vehicles of its Class.

1 It has platform springs—the easiest and most perfect springs used.
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3 The body always remains level when moving up and down, and does not settle down behind when loaded, thus throwing it out of balance, as all other sulkies do.
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Made to order extra heavy for breaking colts.
With rear step and folding seat for three persons.
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With top for ladies and children, or with any desired peculiarity.

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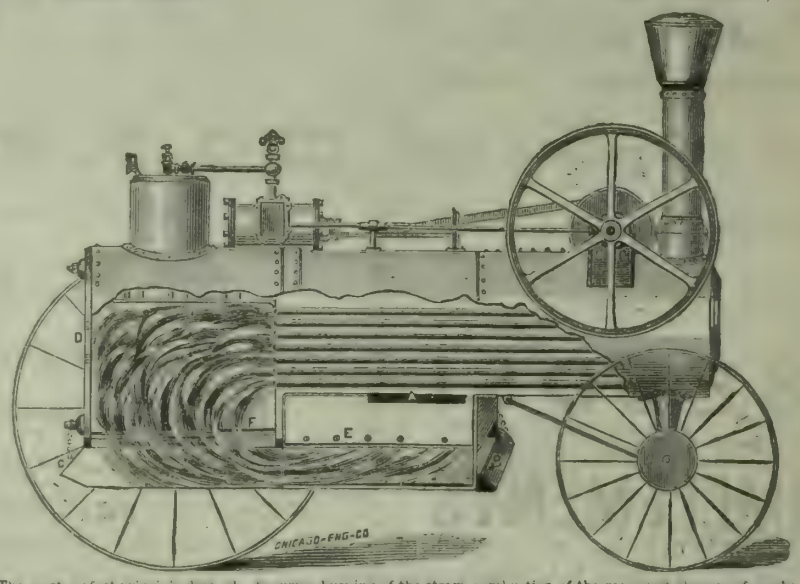

The most perfect principle developed. Securing burning of the straw, combustion of the gases and absence of sparks. A practical straw-burning engine, and at the same time equally economical with wood or coal. The question of using straw for fuel in sections of the country where wood and coal is scarce and costly has assumed much greater importance since steam is so generally utilized for threshing. A good, practical straw-burning engine has become a necessity. To this question the attention of the J. I. Case T. M. Co. has been directed for some time. They have studied the subject, examined these at home and in other countries, have experimented at considerable cost on several devices, and have seen these tested by other manufacturers, some of them with boilers specially constructed for straw burning, and which cannot be used for wood or coal, but have found none sufficiently perfect to warrant their adoption.

We are most happy to say now that their experimenting has resulted *in the most assured success*. They have succeeded beyond what a year since they had deemed possible in making a device, which, attached to their celebrated Portable Wood and Coal Burning Engines, excels anything of the kind for the practical use of straw for fuel. It does not prevent the use of Wood or Coal; in fact, where so desired, Wood can form part of the fuel without detriment, or either can be used single and alone. It being placed in the center of the engine, not resting on the ground, it need not be removed in going from place to place. The weight is nothing to speak of. It can be fed from either side of the engine. It forms in part a jacket to the boiler, converting the part covered into so much more of a Crown Sheet. It makes and holds Steam easier than any Engine we know of. It also utilizes and consumes straw and Smoke entirely, at the same time so distributing the heat that a uniform temperature is obtained, removing danger to Crown Sheets and flues from overheating or sudden cooling.

NO DANGER FROM FIRE.—In using this attachment consuming, both straw and smoke, it does away with all apprehension about sparks and fire therefrom.

The "Case" Engines are mounted on large iron wheels—8 inch tires, the hind wheels 5 ft., and forward, 3 ft., in diameter, making them easy of draft. A soft metal plug is put in the Crown Sheet of all these Engines, which, in case of carelessness in allowing water to get below Crown Sheet, melts and extinguishes the fire. The Boilers are of the best iron. The entire engine being first class in its construction. For further information write for catalogue or call at the salesroom of

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No matter how specious arguments of others may be, reflect and consult interests, not of the moment, but of the future, your own happiness and welfare, and that of your progeny, and promote and establish it by using nothing but HOME MANUFACTURES. In your painting wants use nothing but PIONEER WHITE LEAD.

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THE PACIFIC RUBBER PAINT

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DON'T TAKE ANY MIXED PAINT EXCEPTING THE PACIFIC RUBBER PAINT. SEE THAT THE WORD PACIFIC IS ON EVERY LABEL.

Any other so-called RUBBER PAINT is a Miserable and Contemptible Imitation.

If your Storekeeper don't keep it, send to us direct, and we will with pleasure give you color cards, prices and such other information as you may desire.

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PACIFIC RURAL PRESS

TWENTY-PAGE EDITION.

Volume XXIII.] SAN FRANCISCO, SATURDAY, JUNE 17, 1882. Number 24

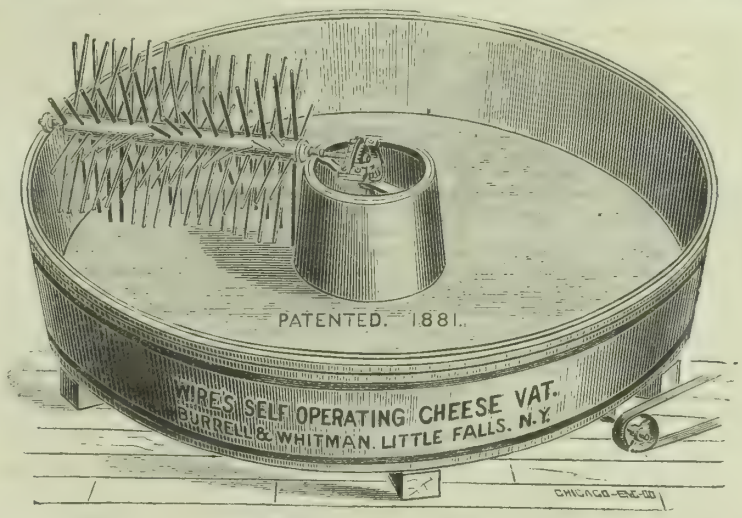
An Automatic Cheese Vat.

One of the latest inventions relating to dairy work is a self-cutting, self-stirring and self-salting cheese vat, known as "Wire's Circular cheese vat." It is of recent invention, and yet has been in use long enough to secure very favorable opinions from many of the large factory owners and managers of the East. We have secured from Burrell & Whitman, of Little Falls, New York, dairy implement dealers, engravings showing the style and method of the new vat, that our readers may be informed of the new things. We are not aware that any have yet been introduced in this State, but they may be expected if present Eastern favor is maintained.

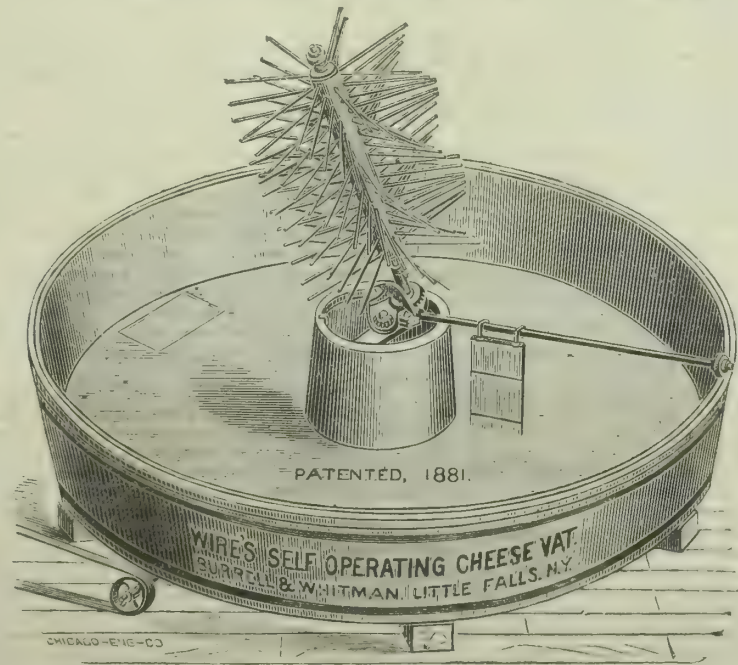
The vat consists of two parts, like an ordinary cheese vat, the outer of wood and the inner, or milk vat, of tin, with a space between the two in which are placed the pipes for heating. The wood vat is made in the shape of a tub 10 to 14 ft. in diameter, and 20 to 22 inches deep. A circular opening about 30 inches in diameter, is cut in the center of the bottom, within which staves are set up of the same hight as the outside. The tin is also tub-shaped, and made with a core to correspond with the wood. A shaft, upon which is fixed the agitator for stirring the curd, extends from the center of the vat horizontally across its top to the outer edge.

By means of the suitable machinery situated in the core, a radial motion about the center of the vat is given to this shaft, at the same time that it revolves on its own axis. The agitator is furnished with long teeth which reach to the bottom of the tin vat. Thus, in operation, while the agitator revolves upon its own axis, the shaft, by which it is carried, swings about the center of the vat, bringing it to every part of the vat and agitating the whole mass of curd perfectly and evenly. As soon as the agitator begins to work in the process of scalding and cooking the curd, a current is formed around the vat, which keeps every particle constantly in motion and removes all danger of uneven cooking. The motion of the agitator being uniform and steady, the curd is handled more carefully and with less loss in the whey than is usual with the hand stirring. When not in use the agitator is readily lifted out of the curd and tipped back until it stands vertically over the center of the vat. An arm is also provided, to which knives for cutting the curd are attached. What the inventors claim for these vats is: 1. That they perform nearly the entire work of stirring the curd during the process of cooking and salting by machinery, dispensing with the use of an extra curd drainer or sink, and doing the work as perfectly as it can be done, and much more perfectly than it is usually done, by hand. 2. That by their use one man will easily do the work of two or three men using the common vats. The provisions for heating and cooling the milk are essentially the same as in the ordinary vats. The construction of the vat is that most favorable to strength and durability. The machinery is simple and not liable to get out of order.

The two leading lights of Eastern dairying have declared themselves as well impressed with the circular vat. Prof. Arnold says it affords a remedy for many of the evils in cheese making, and is a labor-saving machine. Prof. Willard gave, in the *Country Gentleman* some time since, an account of a trial of the circular vat at Burrell & Whitman's cheese factory, in the course of which he says: "In the trial, about 6,000 pounds of milk were in the vat, and when the curds were ready to cut, a horizontal knife was attached to the iron arm, which moved slowly about the vat. Afterwards the perpendicular knife was attached, cutting the curd perpendicularly. The operation of cutting appeared to be satisfactorily performed. When it came to stirring the curd the advantage was very apparent, and elicited commendation from those present. The whey is drawn from the bottom of the vat at a point near the outer edge. The vat is then tilted, the agitator working equally well on the incline, and keeping the curds fine and in good condition for salting. Finally the salt was applied, and the agitator did the stirring, incorporating the salt evenly and leaving the curds in excellent shape for the press. The advantage of this machine for keeping all parts of the curds exposed to the atmosphere for any length of time desired, is a commendable feature which will be at once recognized by cheese makers. The agitator does the work of the curd mill and obviates its use."



AGITATOR IN POSITION FOR STIRRING THE CURD.



AGITATOR LIFTED OUT OF THE CURD. KNIFE IN POSITION FOR CUTTING.

THE NEW ROUTE TO THE NORTH.—Work has been commenced to connect the northern branch of the Central Pacific railroad, which now terminates at Willows, with Tehama and the Shasta line of the road. This will make a cut of 37 miles across Colusa county, and, when completed, will shorten considerably the time necessary to travel between San Francisco and the northern counties. Shasta and San Francisco will then be in a direct line of communication, by way of Tehama and Woodland.

RECENT soundings show that Tulare lake is only 20 ft. in depth at the deepest place, whereas in 1873 it was 31 ft. This fall of 10 ft. within nine years is quite remarkable.

ARGENTINE WHEAT.—On the occasion of the late Buenos Ayres exhibition, the official agricultural bulletin, of the Argentine Republic furnishes some very interesting statistics relating to the progress of wheat production in that country, and especially in the fine wheat-growing province of Santa Fe, which is so admirably situated for shipping the grain down the river to Buenos Ayres. According to the *Boletin* figures Santa Fe produced in 1862 only 9,000 fanegas of wheat of 6.26 bushels each, or, say, 56,250 bushels. In 1881 there were 473,581 fanegas or 2,959,945 bushels produced, which were sold at an average price of $1.44 gold per bushel, or a total of $4,262,319. The bulletin adds that Santa Fe wheat is, to some extent, now exported to Europe, where it is becoming quite popular, and that the fine provinces of Santa Fe, San Juan, Carriettntes, Salta and Turcuman alone harvest wheat enough to feed the Republic, besides having a small surplus to feed for export abroad. At Rosario, on the river of Parana, an immense granary of solid masonry and iron has been erected for the storage of wheat, bearing the name of *Graneros de Rosario*, and the *Boletin* remarks that the whole province of Santa Fe deserves to be called the granary of the Republic, because of its prominence and great future as a wheat producer.

Moisture and Fruit Preservation.

General J. H. Shields, of Los Angeles, sends us apples of the Pearmain and another variety, sound as on the day they left the tree in 1881, and promising to remain sound many days—probably till the first of July. The apples were raised in Shields canyon, in the Sierra Madre range, 12 miles, as the bird flies, north of the city of Los Angeles, California. They were kept in barrels in a tunnel through a side ridge of the canyon, cut to connect its reservoirs and zanjas with the zanjas of another and appurtenant canyon. Buckets of water were poured into the barrels every week or two for some months after the apples were gathered. The watering was discontinued some two months since, as the apples being nearly all marketed, the remnant was no longer an object of solicitude. The water flowed down through the apples and out through auger-holes in the bottoms of the barrels. The apples sent are of a neglected and almost forgotten remnant keeping into summer, and may properly be called chance survivors.

General Shields, it will be remembered, in his correspondence with the State Horticultural Society, published in the RURAL PRESS, mentioned the case of apples keeping far into the spring under the tree where they had fallen, and with no other protection than fallen leaves. This remarkable case is personally known to Judge R. Raney and other citizens of Florence, in whose vicinity the apples were discovered among the leaves under the tree. Here is a suggestive parallel: In the one case showers watered the apples at intervals; in the other, buckets. In the one case the apples were upon the damp earth among damp leaves; in the other, damp apples among damp apples, in damp barrels in a damp tunnel. The question now is, what more can our fruit growers tell us about humidity as promotive of the fresh life and long keeping of fruit. Let us have the light of every experience upon this very important subject.

While we are at it, let us have all experiences of all methods of keeping every kind of fruit that is susceptible of having its freshness prolonged. We call attention to the subject as one of revenue, health and pleasure. An object of one in giving valuable experiences to the public is to make himself a creditor of the public, fairly expecting payment in other published experiences. The columns of the PRESS, as heretofore, will continue to encourage, and, upon a large scale, to facilitate the settlement of these experience accounts among our contributors.

USELESS SETTLERS.—Col. Preston, Secretary of the California Immigration Association, has received a communication from a prominent citizen of Shasta county, explaining that he has received many visits from individuals who seemed to be hunting a land flowing with milk and honey, a place where they could sit down under their own vine and fig tree, without tickling the bosom of old Mother Earth with even so much as a hoe, and as there are no such places in Shasta county, they go off disgusted. An assurance is given, however, that those who are willing to rough it for a season, can find good homes. The settler who comes, expecting success without work, will be disappointed in every part of the State. There have been too many of this kind already. They are a curse to any neighborhood. They neither build up themselves nor the State.

A BIG impetus of Western immigration will result forthwith from the decision of the Secretary of the Interior, which opens up to entry and settlement 9,000,000 acres of valuable land in Dakota, heretofore claimed by the Chippewa Indians.

DISASTROUS floods have occurred at Verseley, Hungary. A number of houses and two bridges were destroyed. Twelve children and several adults were drowned.

HORTICULTURE.

Useful Plants.

The following paper was read at the last meeting of the State Horticultural Society, by W. G. Klee, of Berkeley:

There are a great many plants, which appear small and unimportant, when compared with our cereal crops or our standard fruits, but are, nevertheless, destined to become of considerable importance to California; not, perhaps, so much as something everybody can take hold of and turn into cash, but rather as something which requires the care of the specialist, who, once having thoroughly mastered the culture, would realize a fair recompense for his labor. I refer to the group of herbs which might be termed aromatics, on account of their strong scent, as well as some very useful and commonly used medicinal plants. I give here a few suggestions and results of experiments in a small way.

Perhaps the plant which just for the present has attracted most attention here in California, and already has engaged considerable capital, is the insect-powder plant, or the various species of Pyrethrum. The *P. parthenifolium* is an old acquaintance, but the other Caucasian species, *roseum*, *carneum* and *caucasicum*, as well as the Dalmatian species, *cinerariæfolium*, are still comparatively little known. They are all perennial herbs, with pretty flowers with colors ranging from white to the deepest crimson.

The *Pyrethrum roseum* and *carneum* resemble each other very closely—so closely that were I judge for myself, I should say they were the same species; all forms of transition easily can be found. The bright, dark green, dissected foliage, reminding one of the common feberfew, the large flowers of which there is generally only one on a stalk, appear in spring, continuing for a couple of months, and in this respect differ considerably from the rare white flower *caucasicum*, or what I believe to be the same, *cinerariæfolium*. This latter has a whitish foliage, reminding me somewhat of the *cineraria maritima*, sometimes called the "dusty miller." The four, or two pairs, as for convenience sake, we will consider *caucasicum* and *cinerariæfolium*, *roseum* and *carneum* grow to be quite large, especially the *cinerariæfolium*, which, when in bloom, stands three to four feet high.

It is the *cinerariæfolium* that is cultivated on a large scale in Merced county, its product being the so-called Buhach, manufactured in Stockton by Milco & Co. This species is probably the most promising for culture on a large scale, as it evidently possesses the advantage of blooming in a comparatively short time, and having the majority of flowers in bloom at once, thereby enabling the harvesting to be done by means of machinery and at once. As regards soil it is much more difficult to grow than the *roseum*, requiring a very porous, sandy soil, otherwise being much subject to dropping off when young; and in a very heavy soil, at least, also suffering from what, for want of a better name, I should call dry rot—a sudden collapsing and dying of part or the whole plant, when bearing, as it seems too dry. This is something I have failed to find in the *roseum*. This latter grows well even when young, in a more tenacious soil, and will resist drouth, only stopping growth and starting again when supplied with water.

As regards comparative yield, I have no concise data to go by; but, putting the larger flowers and continual blooming for some time of *roseum* against the shorter duration of flowering, but much more numerous of *cinerariæfolium*, I think the difference will not be much. The *P. roseum*, evidently, is more adapted to the small household and farm, where its continual blooming will make it much appreciated, especially as it does not need to be picked for powder before fading a little.

Raising the Plant.

The pyrethrums are most easily raised from seed, but especially the *roseum*, are readily increased by division of the plants in spring, before the flower stalks have commenced to appear. The *cinerariæfolium* is also capable of division, but is more difficult. Sown in February, in a frame protected from frost, fresh seeds germinate readily, and may be large enough to prick out in boxes in about four weeks. Here they may be left for six to seven weeks, when they are ready for setting out in the open ground. The bed should be well prepared, finely and deeply cultivated, possessing the quality of soil as stated above.

A few waterings during the summer will suffice to establish the young plants, which will continue to bush and root during the summer, remaining kind of dormant during the colder part of the season. Early in the spring they will show great vigor, and in March *roseum* will begin to bloom, while *cinerariæfolium* first commences in May, in this locality.

As regards distance for planting I think two by three feet is sufficient for *roseum*, while *cinerariæfolium*, perhaps, ought to have a little more room.

The flowers are ready for cutting, it is said, best when the flower commences to turn down. They are then dried and ground to dust—the finer the better.

I need not remind you that the little experience gathered in Berkeley would be greatly modified in hotter localities.

Chamomiles.

Closely allied to the pyrethrums, we have two most useful plants, the so-called "German chamomile" (*Matricaria chamomilla*) and the "Roman chamomile" (*Anthemis nobilis*).

The German "chamomile" grows with readiness in any good garden soil, and will produce a fine flower and mature seed with camparatively little irrigation. It will also seed itself on the same spot, but as the ground here, on account of our winter rains and dry summer, becomes too hard, if left without stirring a whole year, seed is better sown every year. The raising of chamomile, no doubt, would be profitable, the price paid for a rather inferior article being quite high.

The Roman chamomile is a perennial plant easily increased by divisions, cutting, etc., and will live without water all summer in this locality, but not develop to perfection. When watered sparingly, it flourishes and thrives, while too much water makes it too bushy.

Coriander.

Among umbelliferous plants the coriander thrives to perfection in this climate, but is, perhaps, a little tricky and difficult to manage, if not rightly understood. Coriander is an annual, and a native of Europe. It requires to be sown early enough to have the benefit of the winter rains, say in the last part of March. If planted too early the same effect as that of the drouth is caused by frost, viz., small, stunted plants, blooming at a hight of a few inches, with one umbel of flowers. Grown in the right time, a single plant will cover two feet and be four to five feet high, bending down under the weight of the seed.

Other Seeds and Plants.

Caraway seed is also produced by an umbelliferous plant, which, however, unlike the coriander, requires two years for its development; sown in March it grows all summer, but requires watering. In May, the following year, it blooms and ripens seed in course of a couple of months. It seems less adapted to the climate of California. Still it will no doubt pay, especially farther north; seed is paid well for in San Francisco.

Ainse and cumin seed are less sought for and used. They will grow with ease when once good seed is procured. Their treatment is like the coriander.

I need not mention the many different mints. They are as much at home here as their native relations; still, I think but few of them are turned into profit, which they no doubt could be, if properly managed.

The ginger-root grows well, even in the climate of Berkeley. Of its utilization we have heard from Fresno. It is a bulbous root, or rather a root-stock, like the *Canna indica*, easily increased by division. No doubt it requires more heat for becoming valuable than the coast climate offers.

The marshmallow is a near relation of our hollyhock, a perennial plant of easy cultivation, coming into perfection the second year, but continuing to grow from the old roots. It is, unfortunately, much loved by the gophers, which are always sure to find it.

Still another plant, perhaps the most profitable of all, if we were capable of becoming Chinamen, is the opium poppy. This pretty annual flourishes and seeds itself, if once planted, growing in a moist soil without irrigation, and producing fine large heads full of opium, as seen by the specimens I have brought with me.

My limited time does not allow me to enter further into this subject, which I hope somebody will take up and continue at some future day.

CONSUMPTION OF BOXES. It looks, says the Reno *Gazette*, as if the consumption of boxes on the Pacific coast would continue to increase and the manufacture of them become one of the greatest industries in the country. There is already a vast amount of packing going on, and it must increase rapidly for many years, for the resources of the coast are not one-tenth part developed. The whole East is open to the California producer of grapes, apples, pears and small fruits, while the whole world is drawing on her for salmon, canned goods, borax and other staples. Nevada, Utah, Colorado, Wyoming, Arizona, New Mexico and Texas send for greens and vegetables every day in the year nearly, and they all have to be boxed. All this time great vineyards are being planted to grapes, the foothills are being cleared and orchards set out, the rivers are being stocked with salmon and trout, borax beds are being opened up in Nevada, soda is being shipped to San Francisco by the car-load, to be refined and canned, the sugar trade is growing, manufactures are increasing, and they are all shipped in wood. The outlook is a grand one, and it should stimulate the manufacturers to make preparations for working cheaply and to advantage. The present way of turning out boxes is very extravagant.

A NEW FLOOR COVERING.—A Jersey City man has patented two improved floor coverings. One is a fabric coated with a mixture of ground leather and mineral fiber and a binding of hard varnish, and the other is a coating of ground wood, or some other vegetable fiber, mixed with mineral fiber and a binding of copal. These coverings are claimed to be remarkably cheap and durable.

ARBORICULTURE.

Shelter Belts.

Is a name given to rows of trees, generally planted in single rows, to protect against wind, dust and frost. In our country of "ocean level plains" they add very much to the beauty of farms, besides adding 100% to their value. Even for the production of small grain, a tall shelter belt of dense-foliaged trees prevents the drying action of the "northers" for many rods in fields south of them. In no other place in the world, probably, are these shelter belts of more value than here on our "Fresno plains." The question, then, of what kinds of trees best serve for this use is, to us, one of very great importance. I have experimented quite largely and feel that I have a right to speak on the subject, having now over 20 miles of rows of trees on my farm.

Don't raise almonds for this purpose. They do not grow tall enough; and besides, here in the hot, dry valley, they serve as breeding places for red spiders, one of the worst pests known here. Perhaps some RURAL reader will remember, four years ago, J. W. A. Wright spoke in the RURAL of my experiments in seedling almond trees. I had over 10,000 of them. I found them most valuable to dig up for roots on which to propagate prunes, plums, peaches, etc., and less than 100 have been saved from that way of destruction.

Don't raise eucalypti unless you have 40 ft. of land to spare to their voracious absorption of all nutriment from the soil each side of the row. Besides they are difficult to raise. The average man fails to make them grow with sufficient vitality the first summer to withstand the freezing of the first winter. Something over four years ago I gave the readers of the RURAL my method of summer transplanting of eucalypti, using a piece of wet cloth laid over the little newly-set tree, as a shade, till the tree starts to grow. It will be remembered from the criticism it received from one living away near the ocean, where they have neither our burning sun of summer or frosts of winter to contend with. Well: now we have the net result. I have hundreds of those eucalypti growing 30 ft. to 50 ft. in hight, and up to over a foot in diameter; while, of the thousands set by other methods within a radius of 15 miles, the whole country hasn't as many of them as I alone have.

Don't set Lombardy poplars. They throw up a growth from their roots that completely destroys land adjoining on either side after a few years. Don't set cottonwoods for same reason. If you use any of the poplar family, set what is popularly known as the Carolina poplar. Their wood is valuable; and, here on my farm, they have grown 13 ft. in hight in a single year, which is some compensation for the nuisance of their sprouts, in which they are but little better than the Lombardy poplar and cottonwood.

If you wish deciduous trees, the black walnut, mulberry and chestnut I have found to be most desirable. Any of them grow from three feet to six feet per year and all are very thrifty, require but little care, and when of mature age will produce considerable value in fruit and nuts. The dark-fruited mulberry trees, as a shelter belt around orchards, serve the valuable purpose of protecting cherries and other early fruits ripening at same time their berries ripen. By their greater attractiveness to depredating birds, all of which, where they're plentifully provided with them, prefer black mulberries to even the most luscious of cherries. Black walnuts, here, bear in five years from the seed, and chestnuts in seven years.

Of fruit trees, I believe the apricot is the most valuable for a shelter belt. I have faith enough in it that I am trying a quarter of a mile shelter belt, newly planted. Will report results.

But the most valuable tree for this purpose of which I have any knowledge, and I have been observing and experimenting for 20 years, is one of our native evergreens, the *Libocedrus decurrens*. The following that appeared, some time ago, in the Fresno *Republican* is as good as anything I could say, and paste is more easily handled than ink:

"Tall evergreens are much needed for planting on the plains and in towns where space is limited. Trees that form dense, beautiful tops up out of the way of our view of the surrounding landscape, and under whose over-shadowing branches the air can freely circulate. Trees that shall give to our homes the charm and beauty that the oaks and elms do to the "ancestral homes of England," that shall show for many centuries our taste and skill in adorning our homes; and that when 20 generations shall have passed away, shall still, as proud monuments, commemorate our lives. We find these qualities in the most eminent degree in the *Libocedrus*. In the northwest forests of our Coast range it sometimes reaches the enormous hight of 250 ft. No other tree equals it in ability to stand heat or drouth, while it has also stood the frost perfectly in the East as far north as the Ohio river.

"Its top is very dense, and of a most beautiful brilliant green color. It can be pruned to any shape, or will grow most symmetrically without any pruning. It will grow on poor soil, and with very little moisture. Its roots run deep, so that plants can be grown in its shade, up to the very roots of the tree. This last property makes it most desirable for tall hedges or "shelter belts" around orange groves and inclosures of semi-tropical plants and trees. By means of such inclosures, that can be very easily made by the growing of this charming evergreen, and further by piling stable manure within among the tender semi-tropical plants and letting it rot and heat during frosty weather, all the most tender of fruits may be raised anywhere in the valley region of our county, without other trouble or expense than raising the surrounding shelter belt, and, every summer, hauling the manure that will be valuable to enrich the ground the coming year. Sometimes, when the change of soil or climate on removing it from the nursery is very great, this, like other evergreens, makes but a slow growth the first year. But, generally, it is but little retarded by removal, and in all cases makes a splendid growth the second year, and continues to do so, not by a long leading branch, and an open straggling top, but by a rounded beautiful top, sometimes increasing in hight six feet per year."

I would add that the young trees are as easily grown from seed as broomcorn, and that in the severe weather of last winter, where Monterey pine and cypress and Italian cypress were frost-killed, the *Libocedrus* was wholly uninjured.

Sanders, Cal. W. A. SANDERS.

Value of Eucalyptus Timber.

EDITORS PRESS:—I wish to build what is usually termed a barrack over a stack of hay. I have any amount of eucalyptus or blue gum of eight years' growth, straight as a candle, and I would like to know if they will answer for posts, plates, ties, etc.

Will some one, who has had experience in using the timber for posts or building purposes, inform me through your columns how it will do and how to prepare it. I have only used it for firewood, stakes, etc., and my experience is that the small timber, placed in the ground while green, will decay sooner than any wood I know of, and it warps badly when seasoned in the sun. I have thought, perhaps, the latter might be remedied by seasoning in the shade, and the former by taking off the bark and giving a coat of asphaltum. If some one who has used it for building purposes will give me the information I seek through your columns I shall consider it a favor. GEO. E. SEWELL.

Santa Paula, Ventura Co., Cal.

[Let all give their experience in using eucalyptus timber.—EDS. PRESS.]

POULTRY YARD.

Notes on Eggs.

Mr. W. B. Tegetmeier recently delivered a lecture before the Royal Horticultural Society on poultry management. The lecturer, with the help of diagrams, and the carcass of a hen, lucidly described the process by which the egg is formed, explaining that the ovum, or yolk, containing the germ, was generated in the ovary, whence it passed down the oviduct into the intestinal canal; the successive layers of white, the chalazæ (or cords holding the yolk in proper position), the skin (separated at one end so as to allow the air to get to the chick), and finally the shell being secreted during the passage. A common result of poultry-keeping, he proceeded, was to throw this delicate mechanism out of gear. Eggs were produced from what might be called surplus food, *i. e.*, food which was not needed for the general sustenance of the fowl; and some people, knowing this, over-fed their birds, while others kept them barely alive, and then wondered that they got no eggs. The consequence of the excess of animal food was that the ova were produced too rapidly. In the ordinary course of things, only one ovum should be generated in 24 hours, and the fowl ought not to lay more than five or six times a week. If two ova were produced in one day of 24 hours, various kinds of eccentricities resulted. Sometimes the two ova passed into the oviduct together, and then a double-yelked egg was formed. Some poultry-keepers were very proud of this, but it was by no means a consummation to be desired. Occasionally two perfect chickens were hatched, but usually only ovum developed fully, the result being that the chicken had two legs sticking out of its back, and belonging by right to another chicken, of which they were the only evidences. Another irregularity created by over feeding was the production of one perfect egg within another. The oviduct was irritated, and contracting in front of the perfectly-formed egg instead of behind it, as it traveled towards the intestinal canal, forced it back until it met another yolk, when the two joined company, and went down the oviduct together.

Soft eggs resulted from too much fattening and too little exercise, the ovum passing down the oviduct too rapidly for the secretions to be properly made. None of these irregularities were ever met with in wild birds; they were found only in birds which were over-fed, and kept in more or less confinement; and it should be known that there were no functions which suffered so much from confinement as those connected with the production of eggs. It was not

generally understood that a hen which began to lay would go on until the whole clutch had been completed, even though the conditions of existence were changed while the process was in operation. This was how it was that hens kept in back gardens in London and other large places laid during the first season and then ceased to produce. As showing how undesirable it was to keep poultry in such environments, he might mention that he had met with persons who admitted that every egg their hens laid cost them half a crown.

Fowls for the Table.

When a hen had laid its first clutch, it could not be regarded as a first, or even a second-class table bird; it was no longer delicate or luxurious food. Birds intended for the table should be those which were accustomed to fly. The movement of the wings was caused entirely by the muscles (in common parlance, the flesh of the breast), and if a bird never used its wings, these muscles wasted away, both the bone and the flesh of the breast becoming smaller in the course of a few generations. Game fowls fought more with their wings than their legs. They thrust their spurred legs inwards by flapping their wings against them; and that the process was performed to some purpose, he had good reason to know, seeing that once a spur was driven clean through his hand. Fowls whose habit it was to walk, developed large legs instead of large breasts, and the lower part of the leg especially became strong and coarse. The folly of feeding such varieties for the table was evident when it was remembered that all this hard, inedible muscle—it might even be called offal—was formed from food which, in the case of other varieties, would have gone to produce the delicate flesh of the breast.

Speaking of the chalazæ, or cords which keep the yelk in its place, the lecturer remarked that some people were so very careful in packing

Eggs for Hatching,

That they rolled each egg up in a separate piece of paper, turning it round several times in the process. Now this happened to be a most effective way of rendering the egg unfertile. It mattered little, if anything, how violently it was agitated, but the effect of rapid rotation was that the chalazæ became twisted. Eggs should be packed in a receptacle more or less elastic. A basket should be used in preference to a box, because the eggs needed air; and they should be tightly packed in layers, with just a little hay between each stratum. Many persons used bran instead of hay, forgetting that by the constant jogging the former was shaken into a solid mass, the consequence being that the eggs were either broken or injured by the constant contact with each other.

The egg shell is a wonderful beautiful structure. It was built up very much like the brickwork of a dome or of a tunnel. There were really two shells, and between them were a number of many-sided blocks, so arranged as to resist pressure, while between them were spaces for the passage of air. To illustrate the power of resistence to pressure, the lecturer placed an egg endways between his two hands, all the force he was able to exert being insufficient to crush it. He added that he had even stood upon an egg which was protected with india-rubber without breaking it, and that it might be thrown a considerable distance along a lawn without being injured. He went on to say that as the process of hatching proceeded, the beautiful structure of which he had been speaking gradually broke up, the little blocks tumbled down, the brick work of the arch was ruined, and the shell became so fragile that it was easily broken by the the picking of the young chick. Many persons believed that the eggs of some varieties were superior to those of others. He, however, was convinced that the quality of eggs depended in no sense upon breed, but simply upon the condition of the individual fowl. Having pointed out that the flavor of eggs was materially affected by the air in which they are kept, Mr. Tegetmeier said that the yelks of all eggs were generally of the same size, the difference between the dimensions of large and small eggs depending upon the amount of albumen, or white. From time to time he had received most extraordinary accounts of eccentricities and irregularities. As many as 20 examples of the presence in eggs of what were supposed to be beans had come under his notice. Sometimes a coin was found, and in one case a wedding ring. When the ova were produced too rapidly it sometimes happened that the blood-vessel burst, and a little clot of blood was the result. This passed down the oviduct with the yelk, and was surrounded with the layers of white, and when the egg was cooked, the blood was firmly coagulated, and contracted into a hard mass, which looked very much like a pea or bean. As to the presence of coins, wedding-rings, etc., that was simply the result of trickery. The shell was broken by some larkish individual, and the ring or the coin was slipped in, the fracture in the shell being covered with a little plaster of Paris, or something of that kind. He had convinced a person who had refused to accept this explanation by treating him to an egg in which he had previously inserted a long horse-hair. That there was no other explanation possible was evident from the simple fact that the digestive organs of the fowl had no connection whatever with the egg-producing organs. If, say, a ring was swallowed, it passed into the crop, and thence into the gizzard, where it would be gradually ground up, even though it were as hard as a diamond. Reverting to the

Importance of Fresh Air.

The lecturer said he remembered attending an incubator contest which had since become famous. On entering the room he remarked to Mr. Matthews, "How many eggs do you think you will hatch here?" To which Mr. Matthews replied, "I should never think of making the experiment." The contest was held upon the premises of the gas company. In the next room there was a furnace, and the fumes of the gas were surrounding the eggs. No one who knew anything about the matter could ever have expected that eggs would be hatched under such conditions as those, and it was very unfair to the incubators to put them to such a test. When over in Paris a month ago, one of the most successful incubators he met with consisted of half a barrel, adapted to its new use in the most rough-and-ready fashion, and the great merit claimed for it by the manufacturer was that it allowed the eggs to be exposed to the air instead of their being shut up in boxes. These boxes formed the weak point of most incubators, and the machine which he had occasion to commend in his first lecture was no exception to the rule. At first the chickens breathed not by means of lungs, for these, as yet, were not formed, but through the membrane which developed from it. The chipping noise which was heard as the process of hatching was nearing completion was not produced, as was generally supposed, by the efforts of the chick to break through its shell, but by the action of either the heart or the lungs, as was discovered by his late friend Dr. Horner, of Hull. Eggs ought to be tested on the sixth or seventh day after sitting. He had tried all sorts of more or less complicated devices, but the best method was, after all, the very simplest. It was just this—to take the cover of an old book, cut a hole in it not quite large enough for the egg to go through, to darken the room, and then hold the egg in front of a paraffine lamp or other tolerably strong light. If the egg was unfertile, it looked very much as though it was filled with melted wax (he might mention, by the way, that they could judge most accurately from the size of the air vesicle whether the egg was fresh or stale, for the vesicle expanded with the lapse of time); but if it was fertile, the membrane of which he had already spoken would have extended all over the interior of the shell, so that the egg was perfectly opaque.

SHEEP AND WOOL.

The Mohair Industry.

"Let not ambition mock their useful toil,
Their homely joys and destiny obscure."—GRAY.

EDITORS PRESS:—An unexpected and drenching rain having driven myself and my little handful of Angoras under shelter, I accept the auspicious time to proceed with the investigation of our subject, laden as it is with importance to the individual, to the State, and to the nation.

Before entering into details, I would apologize for the indistinctness of my last manuscript, for I see that the word that was written "perversion" was printed "persuasion"—"after so long a perversion," etc. Where the same hand has to grasp the sheep-shears and dispense the writing fluid, occasional remissness is inevitable.

It was in October, 1873, that I and Mr. W. G. Grove, now of Healdsburg, Sonoma county, entered on the occupation of breeding goats for their fleece. Mr. Grove was at that time superintendent of the celebrated Hite gold-quartz mine, so the conduct of the concern devolved upon me. No man could hold the worthless common goat in more abhorrence than I did, so I resolved to have nothing whatever to do with it. The policy I adopted is the same as that delineated in the pamphlet of the Virginia Angora Co, viz., to breed on the side of the sire only from the thoroughbred, and on the side of the female from high grade or full blood.

Accordingly, in due time and at an expense of $160, which covered everything, I found myself the owner of a buck, guaranteed by Shirland & Thomas to be an imported thoroughbred. The females were procured from Mr. John Dunlap, of Fresno county, at $20 a head. Mr. Dunlap had not attempted to breed them for profit, but had obtained them in some sort of a business transaction from the elder Mr. Landrum. Mr. Dunlap did not conceal or prevaricate the fact that fleece goats did not increase as fast as might be expected; everything appeared to destroy them. As, at the time, I had neither sheds nor corrals, I did not immediately remove the flock, and I asked Mr. Dunlap, if possible, to dispose of the two grade bucks that were with the flock, and by which the females were pregnant. He was fortunate enough to exchange them to a neighbor who had formerly used them. I got 10 low-grade females for the two.

In the course of time a small quantity of mohair was sheared and forwarded East to an indefinite market, and was sold as second quality for 60 cents a lb. Not wishing to breed the Shirland buck on his own kids, I purchased another from Major Beck, of Sacramento, which cost me, delivered at my home, $117.50. A guaranty and pedigree accompanied the animal. These documents bear the date of March 12, 1875. The buck that I received proved to be the Gilmore Sweepstakes, forwarded through a mistake. The dissimilarity between him and the Shirland buck, was remarkable, though both were guaranteed as thoroughbred. The Shirland buck had a reddish fleece, about five inches long, and sheared four pounds. The Gilmore buck had evidently seen a heavy season's service, yet his fleece was 12 inches long, and weighed 7 lbs. The mistake cost the Major, besides a few postage stamps, several dollars in money, for he cheerfully paid the expenses both ways. While the buck was in my possession there was only one of my nannies came into season, which afterwards bore twins, male and female. The latter is still alive, and, although a low-grade, is honored with the name of "Sweepstakes."

Through the influence of my associates I was enabled to supply the Hite's Cove market with mutton. So I felt safe in adding to the number of my females, and as a Princeton band, within a few miles from me, was offered at a bargain, I did not hesitate to secure it. This flock, which numbered about 200 head of both sexes and all sizes, had been bred to fleece bucks for five years, but only the last season to the thoroughbred, for which the owner assured me he paid $100 each. As I did not require the bucks, they were not included in my purchase.

In the progress of events, the exchange was completed between myself and the Major, and along came another thoroughbred buck, who figures on my records as imported "Croppy." He turned out to be of the same importation as the Shirland buck, but, although they might have been shipmates on the voyage, it was evident that the source of their pedigree was different.

In the course of time, I made a temporary exchange for the "Croppy" with a friend. The buck of my friend was a lineal descendant of the Israel Diehl importation, and had cost him $150 in gold. The weight of his fleece was six pounds, though under favorable conditions it was in excess of it. Upon the arrival of this last phenomenon, my associate remarked that there was an indefinable something about the animal that he did not like. So, at his suggestion I rolled the fleece separately, and forwarded it, along with a small lot of mohair, to the Farr Alpaca company, requesting them to pronounce upon its merits. The concise and emphatic response of Mr. Farr, that I herewith enclose, is not a transcript, but the original document:

MARTIN KIRBY, ESQ., Angora Downs, Mariposa, Cal.—*Dear Sir:* Your letter of the 26th of April is before me, and the mohair has just arrived. You say there is about 150 lbs., but we find the actual weight to be 117 lbs. gross, four lbs. tare, and 113 lbs. tret. We have graded it as follows:

9 lbs. at 85c, very good, long and fine, and not much kemp.
55 lbs. at 65c, some fair length, some short and kempy.
49 lbs. at 30c, some very short and kempy, and some long — but very coarse
113 lbs.

There were two or three fleeces included in the 49 lbs, that are almost clear kemp, worth 12½ cents, but there is so little of it that I put it into the 30 cent grade. I examined the "touck" fleece very carefully. The hair of the fleece is very long and free from kemp, but very coarse indeed. I should say that any buck growing such coarse hair as this would be unfit for breeding purposes. A great deal depends upon the fineness of the hair; this is next to length in importance. For breeding I should have a pure blood buck if I could get it. There is considerable irregularity in your lot. In order to grade it strictly according to value there would be at least six different grades. I have only one advice to give to all mohair raisers, and that is *breed up.*—H. M. FARR, Holyoke, Mass., June 4, 1877.

While you are pondering on its contents, and, as the rain has cleared off, I must go and let my kids have a play. More anon.

MARTIN KIRBY (73).

Darrah, Mariposa Co., Cal., May 24, 1882.

FORESTRY.

Timber on Mineral Lands.

A very important decision, of great interest to the mining community, has just been rendered by H. M. Teller, Secretary of the Interior, on the question of timber on mineral land. In view of its importance we print it in full:

My attention has been called to a number of cases, reported by special agent Hardin, of the so-called trespassers in cutting timber on mineral land in the Territory of Dakota. Notably, in the cases of Frank P. Hardin, who is charged with cutting 72 cords of wood; Peter T. Bye, charged with cutting 25 cords; Henry Bressert, charged with cutting 60 cords; J. H. Damon, charged with cutting a like amount; Frank Keller charged with cutting 47 cords, and Albert Holman, charged with cutting 100 cords. All of this wood appears to have been cut off of mineral lands of the United States. It also appears by the report of the special agent that the persons charged with the trespass have, in cutting this wood, conformed to the rules of the department as to size of the timber to be cut, etc. It is now proposed to compromise with these persons by allowing them to pay for the wood, at the rate of 50 cents per cord. I do not think, on the statement of facts made by the special agent in the cases of Hardin and Peter B. Bye, that they have been guilty of a trespass in cutting such. I understand that the facts are substantially the same in all the cases mentioned.

The Acts of Congress.

The Act of Congress, approved June 3, 1878, entitled "An Act authorizing the citizens of Colorado, Nevada and Oregon, to fell and remove timber from the public domain for mining and domestic purposes," clearly authorizes the cutting of timber on mineral lands of the United States for domestic uses. It does not appear that Peter Bye, or any other of the parties complained of, cut wood for transportation from the Territory, and if cut to be used in Dakota, it is clearly for domestic use. It has been alleged that the Act of June 3, 1878, does not apply to persons cutting timber on mineral lands for sale, and that to enable any person to have the benefit of that Act, he must cut timber for his personal use, and not for sale. Such a construction defeats the very intent of the Act which was to allow the settler on mineral lands to have the benefit of the timber thereon growing for use, within the Territory or State where it grew. It cannot be supposed that Congress intended to say by that Act to the inhabitants of the mineral regions, that while they might go on the lands of the United States and cut timber for their use, yet they could not employ others to cut timber for them, or purchase it of those who had cut and prepared it for use. Large and prosperous communities had settled on the mineral lands of the United States, by and with the consent of Congress.

The Occupation Lawful.

A statute had been passed declaring such occupation lawful, and provisions were made for securing a title to the mines that should be discovered and improved on such lands, yet no provisions had been made by which a title could be secured to the timber growing on such lands, until a mine had been discovered thereon. To have restricted the inhabitants to the use of such timber as should be found on mineral claims alone, would have been folly, for in many instances the mineral claims are destitute of timber. Whole mining districts are frequently compelled to procure their supply outside of their districts, either because the timber in such districts had been carted off and used, or because the district was without timber when first settled.

A Precept by Custom.

The area of the territory occupied by actually located mineral claims is entirely too small to supply the communities with timber from such claims alone, and so it became a necessity to appropriate timber on Government lands. In the absence of a law authorizing the purchase of either the timber or the land on which it grew, from the first settlement of mineral regions to 1876, such had been the custom of the miners in all mineral regions. Cities and towns, with churches and schoolhouses, had been built with timber so taken from the public land. Appeals had been made to Congress, from time to time, to provide by law for the securing of the title to timber on mineral lands. Congress, with the wise policy of keeping the mineral lands of the United States open to further exploration and occupation, had declined to pass any law by which timber on such lands could be monopolized by speculators and capitalists. Woodchoppers and lumbermen had, from the first settlement of the mineral regions, cut from the mineral lands wood, mining timbers and lumber for buildings, and sold the same to those who could not or did not wish to cut such timber for their own use. It was practically impossible for millmen, miners, and other inhabitants of the country, to go out and fell trees that were to be used to build their mills, timber their mines or supply their families with fuel. About the time of the passage of the Act of 1878 it was alleged that such cutting was in violation of the law, and ought not to be allowed.

A Prevention Worse than a Cure.

To have prevented such cutting would have compelled the abandonment of nearly, if not quite all, the mineral regions of the States and Territories named in the Act. The Act was passed to establish by positive enactment a right claim and exercised without interference on the part of the Government for a period of about 30 years. The construction heretofore given to it by this department has defeated the purposes of the Act, and has not been of any advantage, either to the Government or the people residing on such mineral lands. In most of the regions included in the Act referred to, the timber is of but little value for use outside of the neighborhood in which it grows. A comparatively small amount would bear transportation out of the State or Territory, and it cannot be used more advantageously to the people and the Government than in the product of precious metals. If the timber is cut having reference to the rule established by the department as to size, etc., no complaint ought to be made. It has been suggested that the use of wood in the quartz mills and reduction works in the mineral regions is not a use for mining purposes.

Indispensable Mills and Works.

I do not think there is anything in that suggestion. Quarts mills and reduction mills are indispensable to a mining community, and such use is clearly within the provisions of the law, and the consumer as fully protected by it as if he had consumed it in his own dwelling. You will, therefore, instruct the special agents now in the States and Territories named in the Act of June 3, 1878, to conform to the suggestions herein. The great object of a Governmental supervision of cutting timber in those States and Territories ought not to be to compel the payment for timber so cut, but to prevent an unnecessary waste by cutting the small trees under the size prescribed by the department, and to prevent a waste by fires and other means.

Patrons of Husbandry.

Communications on Grange principles and work and reports of meetings of subordinate Granges are respectfully solicited for this department.

Grange Leaflets.—No. 2.

Written for Rural Press by Clara Deming.

"Flora"

Beautiful goddess! we hardly dare, with limited space and powers, to tell the quarter of the beauty and vastness of thy immense kingdom. You claim as your subjects all in the vegetable kingdom, from the tiniest floweret to the most gigantic oak. If we speak of the "flora" of a country we include all the flowers, plants and trees growing within its borders. In no State or country does this goddess hold more perfect sway than in our own El Dorado. We have, growing side by side, plants belonging in two or three different zones.

The beauties and varieties of these plants are simply amazing to us when we begin to study their habits; and we find the more we study the less we know. We stare with open-eyed wonder at the measureless domain of this, one of the most beautiful deities handed down to us from Grecian antiquity. We marvel not that the ancients saw fit to worship at a shrine representing the lovely flowers that round their pathway bloomed and withered. It demonstrates to us that they had fine, sensitive natures. Show us the man who does not love flowers, and we will show you that he is hard-hearted and cruel, or else demented. Scarcely a heart that pulsates with warm life blood but delights, in some way, in these delicate representatives of Flora's court that constantly surround us.

Those who established the Order of Patrons of Husbandry were not behind their ancestors in recognizing the beautiful in life when they placed Flora, Pomona and Ceres in such responsible places in the Order. And we, as members, bow to their superiority.

The aborigines of the floral kingdom are the wild flowers that bloom in great profusion in the spring time. In other seasons we find an occasional blossom, but the spring is their season, and it is then that they come forth in all their beauty and grandeur, and, in truth, "Solomon, in all his glory, was not arrayed like one of these."

We find them in shady nooks, in "pastures brown and bare," in wooded dell, on the mountain-top, on high and rugged promontories, along the beaten highway, and even upon other plants subsisting. Many bloom in the seclusion of places unhaunted by human steps, and, as Gray has so aptly said:

> "Full many a flower is born to blush unseen
> And waste its sweetness on the desert air."

What can appear more lovely than the fine texture and coloring of these dainty little blessings vouchsafed to favored man? The rare blues reflecting heaven's own azure tints, the yellows shading from the deep orange of the eschecholtzia and esthetic sunflower through those of the quaint little margurettes, to the soft, creamy tints found in many of these children of nature. The flaming scarlet and shadings of red found in the lobelia, cardinalis, Indian pink, graceful columbine, and many others too numerous to mention; the delicate pink tints and royal purples. Nature's paint-box has been dipped into with a lavish hand.

In texture, silks, satins and velvets are no comparison to the loveliness of these petals. The artist's pencil can fashion no outlines so graceful and perfect. The learned chemist, with all his knowledge, cannot form perfumes so rare and sweet as those exhaled by the flowers.

Have these lovely things no mission? Don't they seem to say to us that there is a kind Father over us, who places them here for us to enjoy, and to teach us that there is a something beyond worth striving for? Is it not right for us to bring as much of this loveliness about us and our homes as is possible? Hence the reason why so many cultivate flowers and bring them to the highest state of perfection, placing them where they may be a constant source of delight to us.

Some people think them a trouble, and time spent in their care wasted. Oh, how mistaken they are! What repays more fully careful watchfulness than plants! One takes great pleasure in watching the gradual growth and unfolding of the leaves, and the appearance of the first bud is welcomed with ecstatic joy, and the perfect flower is considered with awe, wonder and admiration, until the soul expands and reaches out beyond the petty trials of life, and revels in mystery.

We look upon the apple blossom and think how strange it is that this little pink beauty, shading into white, with its center full of yellow anthers upon slender stamens, and a pistil, should hold within its dainty cup the power of becoming, in autumn, a large juicy apple.

It is our privilege, endorsed by Grange teachings, to beautify our homes with trees and plants so far as we may see fit. Where we find a home without these necessary adornments, we will probably find discontent and unhappiness, and it is no wonder, for life in such a home has been robbed of the pleasures and joys that make home beautiful. Where shrubbery and flowers abound, the inmates are happy, industrious and contented. If you have ever so little ground to spare, cultivate it—plant vines, roses, violets, pansies, mignonette, carnations, and others that may be your favorites. If landlords would induce tenants to improve the places they rent, the result would be, more contented tenants and more valuable places. The land owner who does not begrudge a few dollars spent in plants and trees, will find himself, as well as others, greatly benefited by the transaction.

Window gardening is very charming and effective, but must have unremitting care, because the scarcity of soil becomes dry and exhausted. Every one should have some flowers that they can cut and place in the house. No matter how faded the carpet, or how shabby the room, a few blossoms will brighten the whole. And let me whisper a secret, visitors will be so pleased with the bright flowers, they will not think to notice the carpet.

Cultivating flowers in the open air will bring health, if you do not allow yourself to overwork. The fresh air and exercise are good for any one whose duties are in-doors. You cannot give more pleasure to a sick friend than by sending him some pretty blossoms from your garden. We once saw some good advice, and that was, whenever you send a nice dish to a sick person to tempt the feeble appetite, make it more inviting by placing a dainty flower about it, somewhere.

How gladly the poor, and those who never have flowers, welcome any that may be placed in their hands. We show our appreciation of these inhabitants of Flora's realm, when we use them to convey our best wishes to the bride and the young-girl friend who graduates from school life into young ladyhood; they speak for us better than any language of ours. When placed over the bier, they tell of our love and sorrow for the one who has gone before. Goddess Flora! May man ever pay tribute to the reign of thy beauty and sweetness.

Grange Reunion in Oakland.

As noted last week, Temescal and Eden Granges will have a reunion on June 17th, which promises to be an occasion of interest and enjoyment. We trust all Grangers within reach will heed the announcement. The place will be Odd Fellows' hall, Oakland, on Saturday, June 17th, at 10 o'clock A. M. The harvest feast will be given at one o'clock. A public meeting, in which all farmers and others interested are invited to participate, will be held at two o'clock. The Worthy Master and all officers of the State Grange, members of Vallejo Grange, and all Granges in Contra Costa and Alameda counties especially, with all Patrons generally, are invited to be present throughout the day. Able addresses and a pleasant and profitable season are expected. There is "an eternal fitness" in the time—Bunker Hill day—for an inspiring Grange gathering.

Wheatland Grange Social.—At 11 A. M. we drove into town and at once repaired to the magnificent new hall, where we met Bro. Chandler, who had preceded us on the railroad. Also Bro. Daniel Flint, W. M. of the S. G., and many friends and acquaintances from the town and vicinity. The Grange was called to order by Dan Fraser, W. M. The doors being closed, Worthy Master Flint exemplified the work of the Order and gave valuable instructions. This being concluded, the doors were thrown open and all invited to the feast which was spread in their large banquet hall adjoining. We cannot do justice to our worthy brothers and fair sisters for their labor and ingenuity in preparing one of the grandest feasts it has ever been our good fortune to witness and participate in. Wheatlanders are proverbial for their liberality and sociability, but on this occasion they excelled all their former efforts. After the feast we again repaired to the hall, where, from the hours of two to six in the evening we were entertained with music and speaking, and a general social good time was had. Before the close, Miss Bradner read the poem, "Fiat Justitia," in a clear and impressive manner.—*Sutter County Farmer.*

Contra Costa Grangers' Association.—At the adjourned meeting of the stockholders of the Grangers' Warehousing and Business Association, held last Monday for the purpose of authorizing a transfer of its property and completing the organization under the new articles of incorporation, two-thirds of the stock was represented. But, as it was found necessary to make a required formal addition to corporation articles for filing in the office of the Secretary of State, and it would be some days before they could be certified back, the meeting adjourned, without transaction of any other business, to Monday, the 19th inst.—*Gazette*, June 10.

A Triumph.—The number of the Pacific Rural Press for June 3d is a triumph for its publishers. Its frontispiece is a view on Bear river, Cal., a masterpiece of wood engraving and a beautiful scene. There are several other views, and a good map of the State, which we stuck on the wall. This is a splendid number to send friends in the Atlantic States.—*Santa Rosa Republican.*

Agricultural Notes.

CALIFORNIA.

BUTTE.

Cherry Shipments.—Chico *Record*, June 10: By yesterday morning's express, General Bidwell shipped from his Rancho Chico orchards nearly two tons of cherries for Sacramento. This was the largest cherry shipment ever made from this place at one time, and many more equally large shipments are yet to follow for points below. Fruit of all kinds is abundant, and Chico will undertake to furnish any market. Last year an agent from Chicago bought several carloads of Rancho Chico plums, and the same man is expected again this season.

TULARE

Fair.—*Delta*, June 9: At a meeting of the directors of the Tulare Valley Agricultural Association, held in Visalia, Monday, June 5, 1882, the Secretary was authorized to procure plans and specifications for the track, grand stand, fence and all necessary buildings, and to advertise for bids for the track, erection of buildings and fence. Bids to be in by the 15th of June. Plans and specifications to be found with Treasurer R. E. Hyde, at Visalia bank. The board of directors have also decided to call in the entire subscription list.

CALAVERAS.

Crops.—*Citizen*, June 10: The crops between Jenny Lind and Camanche have not been so badly injured by the north wind as was at first reported. The cool weather of the last few days is having a salutary effect, and the heads are filling finely.

COLUSA.

The Crops.—*Sun*, June 10. The past week has been favorable to the crops—that is, such as had not already matured. Thursday night and Friday morning .65 of an inch of rain fell. As it was not accompanied by wind, we hope the damage, in the way of throwing down the large wheat, will be small. It could do no good. Most of the wheat that had come to maturity during the last week will be of a good quality. The county will have in the neighborhood of one-third as much as it had in 1880, but not over one-fourth of a full crop for the land put in this season.

Fine Wheat.—John Koon brought us, this week, some fine specimens of wheat from J. J. Hicok's farm on Grand island. The heads of White Tucson were about eight inches long. Mr. Koon says that Uncle Johnny has about 1,100 acres of wheat, the yield of which is estimated at 40 bushels to the acre. We are glad that Mr. Hicok has such flattering prospects, for, between fire and water, he has had pretty hard luck for the past few years.

Advantages of Having Fruit.—We were at Alfred Newland's place the other day, and went out in his almond orchard. He has 10 acres in full bearing. Last year he cleared $30 per acre, and the orchard is increasing in value all the while. Mr. Newland has a small orchard containing a variety of fruit—less than an acre in extent. He sold, last year, off this little patch, over $25 worth of fruit, besides supplying two families. Some kinds of trees will grow on almost every farm in Colusa county, and when a dry season comes, and wheat fails, an orchard that will bring in a few dollars, is a good thing to have.

KERN.

Tehachipa.—Bakersfield *Californian*, June 10: Dr. Brink informs us that the season at Tehachipa has been unusually unfavorable and disagreeable. In anticipation of railroad connection with the Calico mining district, and other rich mines in the vicinity of the Colorado river, the farmers had made an unusual effort, and a larger area had been sown to grain than ever before. For a time the appearance of the crops was one of great promise. But the north winds, which have been so destructive in other parts of the State, came and destroyed, or greatly damaged, everything except in a few sheltered situations. The supply of grain and hay is not likely to exceed the wants of home consumption. There will be little fruit and no acorn crop. Altogether the outlook is not good.

The Poso Creek Grain Crops.—The grain crops at the sinks of Poso creek are said to be coming out finely, although no water was had for irrigable purposes till April. The soil there is a fine, rich alluvium, and circumstances must be decidedly adverse when good crops cannot be produced. Messrs. Neal and Hays, two of the largest farmers there, inform us that their crops will be good, although at one time the delay in obtaining water had almost caused them to despair.

LOS ANGELES.

Santa Ana Fruit Growers.—*Mirror*, June 10: The meeting of fruit growers was held in Orange last Saturday. The meeting was called to order by Dr. J. G. Bailey, who, after briefly stating the object of the meeting, read and submitted a code of by-laws to govern that organization to be known as the "Santa Ana Valley Horticultural Club." Its object being to obtain all possible knowledge pertaining to fruit growing, packing, shipping, selling, etc., and the best means of exterminating the insect pests. Those desirous of joining them, signed the roll, paid one dollar, and proceeded to elect officers for the ensuing year, with the following result: President, D. Halliday; Vice-President, Joel Parker; Secretary, I. S. Collins; Treasurer, S. W. Preble. The meetings are to be held monthly on the first Saturday in each month, at two P. M., alternately in Santa Ana, Orange and Tustin, and it is hoped that much good will result from their deliberations.

Crops.—*Commercial*, June 7: The late rain and recent heavy mists, which have excited the fears of many that they would prove an injury to the country, have turned out to a great advantage to the country after all. It has given the newly-planted vineyards a new force and vigor, given corn and potatoes a lively growth, and brought to perfection a large amount of late-sown grain that without them would have been almost worthless.

Walnuts.—Walnut buyers are in the country buying up crops already. This is much earlier in the season than they ever came here before to bid on crops, and we understand they open out by offering seven and a half cents, which is very good for a starter. The walnut crop will be a heavy one this year.

LASSEN.

Sheep Range Purchased.—Chico *Record*: L. H. McIntosh, of Colusa county, has purchased the famous Parker sheep range, in Mountain Meadows, near Susanville. He also bought a band of 5,000 head of sheep on the range, and will, in the future, engage extensively in stock raising and wool growing. Mr. McIntosh is one of Colusa county's most prominent ranchers. He also talks some of renting his land to responsible parties, and resting awhile from farm life, which, after years of toil, becomes monotonous. A short time since he purchased 3,000 acres of foot-hill land on Deer creek, where he will keep his sheep in the winter, driving them to the mountain range in the summer.

MENDOCINO.

Wool.—*Dispatch*, June 9: The wool now coming into market is of the best quality, showing conclusively that our sheep are determined to maintain the good name they have established throughout the civilized world. The yield will not be any greater than that of last spring, the loss of sheep in some portions of the county having been quite large during the past winter. Sonoma, Humboldt and Mendocino wool in demand at from 26 to 28 cents.

Wool Association.—Ukiah *Press*, June 9: The local market is unaltered. We hear of no transactions, though receipts have been free. For the week ending Thursday, 157 bales, or 45,000 pounds, has been received here, and is stored. Two loads of Round valley fleeces have also been taken to Cloverdale. The present situation is an anomalous one. The Eastern and English markets continue active, at good figures. But the San Francisco market does not respond to these conditions, though receipts are free, and the grades are generally good of their kind. The exodus of Eastern buyers to Texas flattened prices, and though there have been moderate receipts, no quotations are given for Mendocino clip. The return of the Eastern purchaser from Texas, with the possibility of an uninviting quality of wool being offered there, are looked for to revive the market and strengthen prices. The present situation is very favorable for the business of the Wool Association. Unless the market should strengthen, they will certainly ship the clip of some of our largest producers. F. O. Townsend is now in San Francisco, upon business connected with the Association, and will bring up a competent grader, whose work is indispensible before the labor of baling is undertaken. If the quotations reach 30 cents, the association will have little to do; otherwise, the experiment of shipping will be tried, under circumstances that promise to show the advantages and disadvantages of direct dealing. It is uncertain when wool day will come, but not for a fortnight at least.

MERCED.

Crops.—*Valley Argus*, June 10: The favorable weather since the fall of the late showers has done a great deal for grain crops, and as the season progresses crops improve, though in many places wheat and barley crops are a total failure, and on strictly adobe soils they are universally light. Along Bear creek and between Bear and Mariposa creeks there are some fields of good grain; and on the sand lands north of Bear creek, on the Merced river bottom, and the country north of the Merced river, extending west to the sand-blows along the line of the railroad, the grain crops are fully up to the average for good seasons. On the West Side the grass crops and grain crops on irrigated land—some 25,000 or 30,000 acres—are reported excellent; but above the canal, except in the mountains, there is a total failure. On the whole, there will be considerable surplus of wheat for export after supplying local demands.

NAPA.

Cherries.—*Reporter*, June 9: The cherry crop will be larger than was feared at the time of the late frosts. As a result our box manufacturers, who had made up considerable quantities of boxes, and who feared they would not be enabled to dispose of them, have not only got rid of those on hand, but have orders for a good many more. Shipments to San Francisco so far have been unimportant.

SANTA BARBARA

Squash Statistics.—St. Helena *Star*, June 9: Philander Kellogg, an old resident of this vicinity, now of Goleta, Santa Barbara county, is spending the summer here for his health, accompanied by his daughter Jennie. We mentioned last fall a large squash raised by him, and which is so remarkable that we think the following account, written by himself, will be of interest: Following is a true statement con-

cerning a number of squashes raised by me in Santa Barbara county, near the town of Goleta: I planted my squashes in May, and harvested them in October. Finding that they were unusually large, I weighed 10 of the largest and found that their aggregate weight was one ton and 50 odd pounds, the largest one weighing 225 lbs. This squash was exhibited at the county fair and received the first prize. On the 15th of of November, which was my boy's 16th birthday, I cut open one of the other squashes, that weighed 210 lbs., and took out the seeds; my boy then got into it and I put the piece together and completely closed him in, the parts coming tight together. I then persuaded my 18-year-old daughter to get into it and I closed her in, in the same manner. My daughter's weight was 110 lbs. I then put two seven-year-old boys in at once. I then put my three little girls in at once; they were aged respectively six, four and two years, their united weight being 116 lbs. I placed the largest child in the bottom and the little one on the top and then put on the lid, the squash was cut so that the top could be easily put on or removed. The squash was three feet four or five inches in length.

SANTA CRUZ.

PAJARO BERRIES.—*Pajaronian*, June 7: Strawberry shipments from this valley are large. The average daily freight shipment at the present time is about two tons of berries. The principal shippers are Thurber, Short, Waters and Ceschi. Prices are good, and the berry men feel happy.

STANISLAUS.

EDITORS PRESS:—We are on the eve of another wheat harvest. In a few days headers will be busy gathering the scanty crops. Three causes for partial failure may be assigned: A dry winter, desiccating north winds and finally a spell of unusually hot weather. Seldom has the difference between winter's sowing and summer-fallow been so marked as during the present season, and the difference in the yield, in favor of summer-fallow, is probably in the ratio of four or five to one. In our immediate vicinity, three miles north of Modesto, the estimated yield on summer-fallow is 20 bushels to the acre. The rainfall for the season, about seven inches, is sufficient to insure a much better yield with favorable weather.—VITAL E. BANGS, Modesto.

SAN LUIS OBISPO.

CROPS.—*Tribune*, June 10: A large amount of hay of good quality is being cut. Grain is filled in a very gratifying manner with the late favorable weather, and the flax looks good.

SHASTA.

SPRING NOTES.—*Democrat*, June 7: A correspondent writing from Happy Valley says that grapevines, fig trees, apricot, plum and almond sprouts from the pits are looking well, and thus far without a drop of water. Growth on some of the grape cuttings as much as three inches long and those planted quite late, too. Fig trees nearly as large as one's hand. This shows how fruit trees and vines thrive on red and foot-hill lands, of this county, without irrigation.

SONOMA.

OLIVES.—Petaluma *Argus*, June 9: We visited the orchard of Mr. Giovinnini, on the ranch formerly owned by Messrs Hill & Lougee, in Analy township, on the west side of the Laguna. Having heard so much of the wonderful productiveness of his olive trees, we made a personal examination, and found that the half had not been told. Upon inquiry it was ascertained that the trees were very full last year, and that the fruit was gathered while green and made into pickles. At present the trees are literally loaded, and if not relieved of about one-half of their burden, certainly 100 will soon break down with the weight of fruit. We brought away a few twigs not over a foot in length, on some of which more than 100 olives could be counted. These trees had not suffered from frost, though in the vineyard adjoining fully one-half the vines were badly damaged. This fruit finds ready sale for pickles, but some day it will be used for making oil in this vicinity.

VENTURA.

EDITORS PRESS:—It is so seldom you are troubled with a communication from our county, that I will give some items concerning the general prosperity of our farming community, which may interest friends—readers of the PRESS—in other parts of the State. The lack of a sufficiency of rain, together with an unusual amount of cold, drying winds during the months of March and April, have made the season a disastrous one to many of our farmers. In our own immediate neighborhood, the wheat crop is an entire failure, while a portion of the barley sown above the irrigating ditches will make a fair crop. Corn and beans look well as yet, and if we have our usual amount of fogs and moist weather, will probably come out well. Of course, all crops on grounds that can be irrigated, are very heavy, and I am told that wheat in the Conejo valley, south, also in the Ojai valley, north of us, will be a splendid crop, and, considering the present remunerative prices of our products, with the prospective outlook for the coming crop, the people of Ventura county, as a whole, have but little cause for complaint.—GEO. G. SEWELL, Santa Paula.

INTERESTING AND ATTRACTIVE.—The PACIFIC RURAL PRESS of June 3d is an interesting and attractive number. Besides the usual amount of reading it has a description of the various places of resort for pleasure and health seekers. *Walnut Creek Independent.*

Viticultural Commission.

The regular semi-annual meeting of the Board of State Viticultural Commissioners was called to order at the offices of the board, at 11:15 A. M., President Haraszthy presiding. Present, Commissioners Wetmore, Krug, De Turk, Blowers; West, Chief Executive Horticultural Officer, Matthew Cooke, and the Secretary, John H. Wheeler. Absent: Commissioners Rose, Blanchard and Shorb.

Reading of minutes was dispensed with on call for reports of committees. In the absence of Mr. Shorb, Chairman of the Committee on "Distillation, Counterfeits and Adulterations," Mr. Krug, one of the same committee, submitted the communication which the committee had prepared, in accordance with instructions of the commission, and had duly transmitted it to our Senators and Representatives at Washington. This report has already been published in circular form. The following resolution was offered by Commissioner Blowers, and unanimously adopted:

Resolved, That the report of the Committee on Distillations, Counterfeits and Adulterations, relating to their action concerning the Clardy bill, be approved and that the press of this State be requested to make the same public for the information of all producers throughout the country, this commission, desiring it to be understood that its action has been taken in this respect in order to assist in protecting producers of pure wines from ruinous competition with adulterated clarets white wines, sweet wines, ports, sherries, champagnes, etc., which are imposed upon consumers under false representations and labels, all of which the Clardy bill covers.

Commissioner Wetmore offered the following, which was unanimously adopted after being seconded by Commissioner Blowers:

Resolved, That the Committee on Distillations, Counterfeits and Adulterations be instructed to communicate with the U. S. Commission of Internal Revenue and ascertain whether, under existing laws, the addition of imported cherry juice in the preparation of so-called wines does not subject the same to taxation; also, whether sugar, glucose or other saccharine matter can be used in fermentation of grape juice when the same produces an increase of spirit other than that produced from the natural saccharine matter contained in the grape, without subjecting the so-called wines, so produced, to a tax, as on spirits, for the amount of spirit produced from the cane sugar, glucose, etc; also, whether, under existing laws, interpreted in the spirit of the Constitution, pure grape spirits cannot be added to sweet wines to the extent necessary to preserve them, without taxation

Insect Quarantine.

The chief executive horticultural officer, Matthew Cooke, has stated that, inasmuch as there seemed to be danger of spreading diseases of fruit and fruit trees by the use of grape boxes for fruit, he desires to know the will of the Board as to enforcing the dipping or disinfection of said packages, to which the Board responded by instructing Mr. Cooke to enforce, for grape packages, the quarantine rules applicable to packages designed for other fruits, whenever necessary for the protection of horticultural interests.

Mechanics' Fair.

The subject of a viticultural exhibit at the next Mechanics' fair was brought before the Board, and the list of prizes offered by the Mechanics' Institute for exhibit in this department was approved. The list of premiums can be obtained from J. H. Culver, Secretary Mechanics' Institute, 27 Post St., S. F., or J. H. Wheeler, Secretary of Viticultural Commission, 111 Leidesdorf St., S. F.

The meeting adjourned to Monday, July 10th, at which meeting officers will be elected for the ensuing term.

THE GEOGRAPHICAL SOCIETY AND THE ISTHMUS ROUTES.—The Geographical Society of the Pacific held a meeting Tuesday evening. At a previous meeting of the society, in accordance with a request from the Board of Trade, a committee was appointed to consider the merits of the Nicaragua Inter Oceanic Canal route, and the matter came up on majority and minority reports. The majority report was signed by Wm. Aldrich, B. B. Redding and Thomas E. Slevin, and favored the Nicaragua route. A. McF. Davis signed the minority, which was against the Nicaragua route, inasmuch as it was to be subsidized and to contain locks, but Mr. Davis said that his preference for the Panama route does not lead him into any feeling of hostility to the Nicaragua route. The question was discussed by Captain W. L. Merry, Mr. Apponyl, A. A. Briggs, Prof. Slevin, Mr. Davis, E. P. Murphy and W. A. Aldrich, and the majority report finally adopted.

THE CALIFORNIAN.—The June number of the illustrated *Californian* is a very attractive one. The opening article is entitled "The Two Redwoods," and gives a spirited description of the coast redwoods and the big trees. A number of fine pictures accompany this article, showing the Mendocino and Guernville trees, a view at Calaveras, and several cuts exhibiting different growths. Mrs. Victor continues her studies of the California Missions, and engravings are given of the Mission Santa Barbara, two of the Mission Dolores, Mission San Luis Rey, and Mission San Fernando. These two beautifully illustrated papers on the redwoods and the Missions should be read by everyone. The magazine contains, also, a good selection of essays and poems, and is a good thing to put in your satchel when off for a summer trip.

A SPLENDID NUMBER.—Last week's issue of the PACIFIC RURAL PRESS was a splendid number, brim full of items of interest to pleasure seekers. It contains a full description of all the summer resorts in the State, and a map showing the several routes of travel.—*Antioch Ledger.*

How to Make Brick Walls Water-Tight.

The Sylvester process was successfully applied to the interior walls of the gate-houses of the Croton reservoir in the Central park in this city, in 1866, on the advice of the late William Dearborn, C. E., and under the immediate supervision of George S. Greene, Jr., C. E., now the engineer-in-chief of the department of docks.

The process and its results in this case are described fully by Mr. Dearborn in a paper read by him before the American Society of Civil Engineers, May 4, 1870.

The process consists in using two washes or solutions. The first composed of three-quarters of a pound of castile soap dissolved in one gallon of water, laid on at boiling heat with a flat brush. When this has dried, 24 hours later apply in like manner the second wash of half a pound of alum dissolved in four gallons of water. The temperature of this when applied should be 60° to 70° Fahr. After 24 hours apply another soap wash, and so on alternately until four coats of each have been put on. Experiments showed that this was sufficient to make the wall water-tight under 40 ft. head of water.

At the time of application the walls had been saturated and the weather was cold. The gate chambers were covered over and heated thoroughly with large stoves. The drying, cleaning the walls with wire brushes, and applying the mixture, took 96 days. Twenty-seven tons of coal were used for the drying, and one ton for heating the soap solution. Eighteen thousand eight hundred and thirty square ft. of wall were washed with four coats. The drying and cleaning of the walls cost six and a half cents per square ft., and the plant, materials, and labor of applying the wash cost three and three-eights cents per square ft.

OBSERVATIONS IN THE CLOUDS.—The French Society of Ærial Navigation recently entrusted M. De Poitevin with a series of baloon observations, among which was the study of the formation of clouds, taking into account the vapor tension in neighboring strata of air, but of different temperature, and also the study of the release of the latent heat of vaporization at the moment of precipitation. One set of three observations was made on an opaque cloud which covered the region of Paris for several days. The cloud was hardly 300 meters thick. The upper part of the guide rope was covered with hoar-frost. The mean temperature of the cloud was five degrees. The various observations yielded the following results: 1. The clouds are formed in the zone of mixture of two layers of air saturated with moisture. 2. The clouds originate in the warm layer and dissolve in the colder layer. 3. They move in the direction of the belt of air which has the highest temperature. 4. The winds which are observed at the surface of the ground, which are only effects of the reaction of the principal wind, may have a hight of several hundred yards, and may have different directions in neighboring localities, while the upper current has a great regularity of direction and intensity.

INDIAN WHEAT.—According to the *Commercial News*, last year $25,000,000 worth of wheat was exported from northern India, and during March last $5,000,000 was sent to Europe by way of Suez canal. This export would not have been made, perhaps, but for the high prices prevailing in the United States. But the significance of European importations of grain grown by the "cheap labor" of India is easily perceived. Russia has hitherto been the chief competitor of the United States in the grain markets of Europe, but the American farmer is threatened with new opposition when European capital and intelligence shall have learned to give directions to the energies of the crowded populations of India.

ANTI-DEBRIS COMMITTEE.—We had an interesting visit on Thursday of last week, from the Committee of Supervisors appointed by the Executive Committee of the Anti-Debris Association of the Sacramento valley. The committee comprised P. R. Beckley, of Sacramento, E. R. Graham, of Colusa, S. D. Wood, of Yuba, and I. N. Brock, of Sutter. We had the pleasure of assuring the Committee that the RURAL PRESS was in full sympathy with the effort now making to free the valley for all time from the ruin impending.

THE original source of power obtained from a water-wheel is the heat of the sun. In fact, nearly all the power made use of on this globe, whether animal, steam, water or wind power, has its origin in the same great light-giving, life-sustaining source. The amount of power thus given out daily by the sun in the form of radiant heat must be enormous, and far beyond our comprehension. But a very small fraction of it reaches our globe, and yet when the attempt is made to estimate the amount of even that small fraction, our arithmetic is too limited.

THERE are employed in the salmon fisheries between San Francisco and Sacramento about 800 boats and 1,600 men. There are 250 boats in the Straits of Carquinez alone. There are nine canneries along the river and Suisun bay, employing, on an average, from 60 to 80 men to each establishment.

News in Brief.

A ST. LOUIS syndicate is said to have expended $1,500,000 in the purchase of mines and railroads in the coal regions of southern Illinois, with the intention of creating a new steel manufacturing city.

A CORRESPONDENT of the New York *Times* says that in the safe of the late Moses Taylor were 25,000 railroad bonds of $1,000 each ($25,000,000), piled up open, sheet upon sheet, in great stacks. These formed but one item of Mr. Taylor's wealth.

SENATOR MILLER, of California, has introduced a bill similar in its provisions to the Rosecrans bill, granting the right of way through the Presidio military reservation to the San Francisco and Ocean Shore railway company.

COMMANDER PARSON, commanding the *Wachusett*, reports to the Navy Department, under date of Fort Wrangel, Alaska, May 19th, that perfect quiet and good order exists in all parts of the Territory.

THE Buckeye flour mills, at Marysville, which have been using about 2,000 cords of wood annually, will on the 15th instant abandon the use of wood, and thereafter use Lincoln, Placer county, coal exclusively.

THE Grand Trunk railroad has had a passenger blockade. There were 4,000 immigrants at Quebec waiting for transportation to Toronto, and detained several days while additional cars were being prepared for their use.

THE western end of the Denver & Rio Grande railroad is nearly completed to Salt Lake. It is said that all the force possible will be put on the Colorado and Utah division, so as to have the trains running from Denver to Salt Lake by January 1st.

IN the suit of Hill & Hill vs. Eureka Lake and Yuba Canal Con. company, Judge Caldwell yesterday, at Nevada City, rendered a decision in favor of the plaintiffs, granting them judgment for one-tenth of the entire ditch and mining property owned by defendants, which will amount to about $40,000.

GEN. IGNATIEFF, at his own request, has been relieved from the post of Minister of the Interior, on the ground of ill-health, and has been appointed President of the Academy and a member of the Senate. He retains his membership of the Council of the Empire and his Adjutancy.

THE Executive Committee of the Anti-debris Association met at Sacramento yesterday, Sacramento, Colusa, Yuba, Sutter, Yolo and Butte counties being represented. A resolution that the area of the country damaged and liable to be damaged by slickens be definitely ascertained and the information given to the people was adopted.

SAYS the Salt Lake *Tribune:* The Mormon church has sent a new colony from southern Utah into Arizona. Their places in this Territory will be supplied by a fresh importation from Europe. The colonists have been in America long enough to become citizens, and they are sent over the line in order to help the brethren hold the balance of power.

IN regard to the Northern Pacific Railroad Company, the committee that has been studying the matter has arrived at the conclusion that, under the law granting the land the latter cannot be forfeited to the Government to be returned to the public domain. The Government can only take such steps as it deems best to procure the completion of the road.

THE Indians southwest of Ashley Fork military post, Utah, are reported troublesome. A gentleman recently from there reports that they are making a good deal of trouble with the cattle; that they run off the horses of white men and hold them for a reward. They also openly robbed a party of food, and when one of the whites was lost and four days without eating, they refused him food.

ANOTHER Boston railroad in Mexico, the "Bee Line," both ends of which are in the United States, is the latest project. It begins at National City, three miles from San Diego, Cal., at the present terminus of the California Southern railroad, and runs southeast through northern Mexico, 470 miles to Calabazas, A. T., running 12 miles in the United States at the west end.

SENATOR JONES introduced in the Senate yesterday a bill, now before the Judicial Committee of the House, by which he proposes to allow the Mexican-Pacific Railroad company of New Mexico and Arizona, the Los Angeles and San Diego Railroad company of California, and the Southern Pacific Railroad company of California to consolidate under the name and style of the Southern Pacific Railroad company.

ARTESIAN water was struck on the ranch of J. M. Creighton, about seven miles southwest of Tulare City, last Saturday evening, at a depth of 306 ft. The flow is strong, and it is thought it will equal that of J. M. Russell's, one mile this side, which flows 1,250,000 gallons in 24 hours. Mr. Creighton commenced another well near his dwelling yesterday afternoon. These wells are all seven inches in diameter.

THE *Herald's* Fort Keogh (M. T.) special says: Among the good results of Villard's visit to the West is an order that hereafter there shall be sold to no person more than 160 acres of the Northern Pacific lands. For months past the West, and especially the Yellowstone valley, has been swarming with Eastern speculators buying up large tracts of land to be held for a rise. Villard's order completely checkmates these speculators.

The King of the Plow.

The sword is re-sheathed in its scabbard,
The rifle hangs safe on the wall,
[illegible]
Hot rush of the ravenous ball—
The war-cloud has hurled its last lightning,
Its last awful thunders are still,
While the Demon of Conflict in Hades
Lies fettered in force as in will;
Above the broad fields that he ravaged,
What monarch rules blissfully now?
Oh! crown him with bays that are bloodless—
The King, the brave King of the Plow!

Through the shadow and shine of past ages
(While tyrants were blinded with blood,)
He reared the pure ensign of Ceres
By meadow, and mountain, and flood—
And the long, leafy gold of his harvests
The earth-sprites and air-sprites had spun,
Grew rhythmic when swept by the breezes,
Grew royal when kissed by the sun;
Before the stern charm of his patience
What rock-rooted forces must bow!
Come! crown him with corn-leaf and wheat-leaf
The King, the bold King of the Plow!

Through valleys of balm-dropping myrtles,
By banks of Arcadian streams;
Where the wind songs are set to the mystic
Mild murmur of passionless dreams;
On the storm-haunted uplands of Thule.
By ice-girdled floods and floes,
Alike speeds the spell of his godhood,
The bloom of his heritage glows;
A monarch! yea, *more* than a monarch—
All climes to his prowess must bow;
Come! crown him with bays that are stainless—
The King, the brave King of the Plow.

Far, far in earth's uttermost future,
As boundless of splendor as scope,
I see the fair Angel -Fruition,
Outspread his high heralds of Hope;
The roses of joy rain around him,
The lilies of sweetness and calm,
For the sword has been changed to the plowshare,
The lion lies down with the lamb!
O angel majestic! We know thee,
Though raised and transfigured art thou—
This lord of life's grand consummation
Was once the swart King of the Plow!

Paul Hayne.

Tom's Wife.

We had just finished breakfast. Tom laid down the egg spoon he had been playing with, and looked across at mother.

"Aunt Anne, I think I'll take a wife," he said, exactly as he might have said, "I think I'll take another cup of coffee."

"Take a wife?" repeated mother, by no means receiving the information as tranquilly as it had been given. "What for?"

"Well, I don't know," answered Tom, thoughtfully. "It's a notion I've got in my head, somehow."

"All nonsense!" said mother, sharply.

"Do you think so?" said Tom, apparently doubtful, but not in the least put out.

"Think so? I know it. What in the world can you want of a wife? After all these years we have lived so comfortably together, to bring home somebody to turn the house upside down! And, then, what's to become of that poor child?"

The "poor child"—that was I—reddening at being brought into the argument in this way, was about to speak for herself, when Tom interposed, warmly:

"I'm sure May knows I would never have any wife who would make it less a home for her—don't you, May?"

"Of course," said I.

"And I'm sure she knows nothing of the sort," persisted mother, "nor you either, Tom Dean. How can you answer for what a wife may take it into her head to do, once you get her fixed here? You can't expect her to forget, as you do, that May has no real claim on you."

"That I have no real claim on her, I suppose you mean, ma'am," Tom put in for the second time, just as I was getting thoroughly uncomfortable. "But, for all that, I intend to keep her—that is," added Tom, with one of his short-sighted blinks sideways at me, "as long as she'll stay with me, eh, May? And whoever has anything to say against that arrangement will have to go out of my house to say it—not that I'm afraid of any such result in this case—and, on the whole, Aunt Annie, I should like to try the experiment."

Mother smiled grimly, but Tom was so evidently bent on his "experiment," as he called it, that she gave up the argument.

"You can dance, if you're ready to pay the piper," she said, shortly. "And, pray, how soon do you mean to be married?"

Tom's face fell a little at this question.

"Well," said he, "I can't say exactly; I suppose we shall have to be engaged first."

"What!" said mother, opening her eyes; "why, you never mean to say, Tom, you haven't spoken to her yet?"

"Not yet," answered Tom, cheerfully. "Time enough far that, you know, after I had spoken to you."

Mother, as a minister's widow, was not much given to the idle mirth that is as the crackling of thorns under a pot, but now she leaned back and laughed till the tears stood in her eyes.

"Well," she said, "if it was anybody else, I should say he was cracked; but you never were like other people, and you never will be, Tom Dean. But, at least, you have fixed on the lady?"

"Oh, yes," answered Tom; "but if you will excuse me, Aunt Anne, I would rather not say anything about her just yet; for, if—if anything should happen, it wouldn't be pleasant for either party, you know." With which veiled allusion to his possible rejection, Tom took his hat, and left the room.

Our household was rather queerly put together. There was no particular reason why I should have been of it at all; for I was not really related to Tom, nor even to "mother," as I called her, though I am sure we were as dear to each other as any mother and daughter could be. She was the second wife of my father, who, like most ministers, had been richer in grace than in goods, and left us at his death with very little to live on. Then it was that Tom Dean had come forward and insisted on giving a home to his aunt and to me, whom he had scarcely seen a dozen times in his life before. That was exactly like Tom—"queer Tom Dean," as his friends were fond of saying, "who never did anything like anybody else." I suppose, in spite of his clear head for business, there is no denying that he was whimsical; but I am sure, when I think of his unfailing generosity and delicacy, I can't help wishing there were a few more such whimsical people in the world. Naturally, at the time I am speaking of, my opinion had not been asked; all I had to do was to go where mother went, and, while she gave her energies to the housekeeping, gave mine to growing up, which, by this time, I had pretty well accomplished. But, perhaps, for that very reason—for one sees with different eyes at 12 and 18—my position in the house had already begun to seem unsatisfactory to me; and the morning's words put it in a clearer light, since it had been used as an argument against Tom's marrying. I knew that mother had spoken honestly, believing that such a step would not be for his happiness; but was not he the best judge of that? I knew him, if reflection should bring him round to her opinion, to be perfectly capable of quietly sacrificing his own wishes for my sake, who had not the shadow of a claim on him; so it must be my part to prevent his own kindness being turned against him now. Still, it was not so easy to see how I was to provide for myself, in case it should become advisable. What could I do? Draw and sing and play tolerably, but not in a manner to compete with the hosts that would be in the field against me. Literature? I had read so many stories whose heroines, with a turn of the pen, dashed into wealth and fame. That would be very nice, only—I was not the least little bit literary; I had not even kept a journal, which is saying a great deal for a girl out in her teens. The "fine arts," then, being out of the question for me, what remained? There was some clerkship, or a place in some family, and—and there was Will Broomley!

That may seem like going away from the point, but it was not. I was matter-of-fact, but I could see well enough what was going on right under my eyes, and I had a pretty clear idea of what was bringing Will to the house so often as he had taken to coming lately. There was a "situation," then, that would give me the home life I liked best and felt myself best suited for; but—would it answer in other respects? I overcast the long seam I was sewing twice over, I was so busy trying to make up my mind whether I liked Will Broomley well enough to pass my whole life with him; and even then I had not come to any decision, when I was called down stairs to see Letty Walters.

Letty was the prettiest, I think, of all my friends, and certainly the liveliest. Tom called her "the tonic," and used to laugh heartily at her bright speeches. I suppose it was this that made mother fix on Letty as his choice. When I came into the sitting-room I found a kind of cross-examination going on. It was amusing to anybody in the secret as I was, to watch mother's artful way of continually bringing the conversation round, as if by chance, to bear on what she wanted to know. But it all amounted to nothing, either because Letty was too good a fencer, or because she had nothing to betray. But when Tom came home, mother took care to mention that Letty had called.

"What, the tonic?" said Tom. "Too bad I missed her."

"But for your choice being already made," said mother, with a covert scrutiny of his face, "I dare say you might have as much of the tonic as you liked."

"But I go on the homœopathic principle, you know," answered Tom, with a twinkle in his eye.

After that, mother's belief in Letty's guiltiness wavered. Her suspicions were transferred from one to another of our acquaintance, but always with the same unsatisfactory result.

"It passes my comprehension," she said to me, despairingly, one day. "I am positive I could tell the right one by Tom's face in a minute, and yet I have mentioned everybody we know."

"Perhaps it is somebody we don't know," I suggested; "some friend of his we have never seen."

"What! a perfect stranger?" said mother, sharply. "Never talk to me, child; Tom's not capable of that!"

I was silent, for I did not want to worry her; but that was my opinion all the same.

The same evening—it was rather more than a week since Tom had hurled that thunderbolt of his at us—mother began about it openly.

"When are you going to introduce your wife to us, Tom? I suppose you have come to an understanding by this time?"

"Oh, there's no hurry," Tom said, as he had said before; but this time he did not speak quite so cheerfully. "The fact is," he continued, with a little hesitation, "there—there's a rival in the case."

"A rival," repeated mother, with unfeeling briskness.

"Yes, a young fellow—younger by a good deal than I am," and Tom's face assumed an absurdly doleful look. "He is always there now. I confess I don't see my way clear; I'm waiting for her to make up her mind."

"And she's waiting, most likely, for you to make up yours," said mother, forgetting, in her propensity to right matters, that she was playing the enemy's game.

"There's something in that that never occurred to me," said Tom, his face brightening. Mother saw her mistake, and made a countermove at once.

"But the ways of my time are old-fashioned now; young ladies, nowadays, take matters into their own hands. If she cared for you, you may be pretty sure she wouldn't have waited till this time to let you know it; that is, I judge by the girls I am in the habit of seeing; but if this one is a stranger to me—" (here mother riveted her eyes on Tom's face; oh, dear, my unfortunate words!) "if she is an entire stranger, I cannot pretend to form any opinion of her, of course."

"Of course," repeated Tom, absently.

"Not that I have any such idea," resumed mother, growing warmer; "I have said, and I say again, that to bring a perfect stranger under this roof, is not my opinion of you, Tom."

I felt mother's words like so many pins and needles; for Tom was looking meditatively across at me, and though that was just a way of his, it seemed now just as if he were reading in my face that the opinion was mine and that I had been meddling in what did not concern me. I felt myself, for very vexation, getting redder every moment, till it grew intolerable.

"It is so warm here," I said, for an excuse, turning toward the French window. "I am going to get a breath of air."

I went out into our little strip of garden ground; Tom followed. I thought I should never have a better opportunity to say what I had it in my mind to say, so I waited for him by the bench under the old pear tree. "Sit down here, Tom," I said, "I've something to say to you."

"Have you?" said Tom; "that's odd, for I—well, never mind that, just yet. What is it, May?"

"Tom," I said, still surer now he had misjudged me, and more resolved to set him right, "I want a place."

"A place?" repeated Tom, puzzled, as well he might be by this sudden and indefinite announcement; "what kind of a place?"

"I don't know," I said, for, indeed, my ideas were of the vaguest. "I thought you might, being in the way of those things. Now, pray, Tom," I went on, quickly, "don't fancy I am discontented, or—or anything of that sort; the truth is, ever since I left off school I have wanted something to do, and had it in my mind to speak to you about it."

With this I looked at Tom, fearing he might be vexed; but he did not look vexed, only preoccupied.

"I do know of a place, as it happens," he said, after a while, "only I'm not sure how it would suit you."

"That's soon seen," said I. "What is it like?"

"Well, it's a sort of—of general usefulness—"

"Why, it must be to run errands," said I, laughing. "And where is it, Tom?"

"Well," said Tom, hesitating again, "it's with me."

"How very nice!" I exclaimed. "How soon can I have it?"

"The sooner the better, so far as I am concerned," said Tom, and with that he turned round and looked at me, and directly I met his eyes I knew somehow, all in a moment, what it was he meant; and I knew, too, both that I could not have passed all my life with Will Broomley, and why I could not.

I am sure Letty Walters, who interrupted us just then, must have thought my wits were wandering that evening, and, indeed, they were; for I was completely dazed with this sudden turn things had taken. But Tom, who had the advantage of me there, took it quite coolly, and laughed and talked with Letty just the same as ever till she went away.

It was pretty late when we went in. Mother sat where we had left her, knitting in the twilight.

"Wasn't that Letty Walters with you a while ago?" she said, as we came up.

"Yes," said I, with a confused feeling of an explanation of something being necessary; "she just came to bring the new crochet pattern she promised me."

"H'm!" said mother, as much as to say she had her own ideas as to what Letty came for.

Tom had been wandering about the room in an absent sort of fashion, taking up and putting down in the wrong places all the small objects that fell in his way. He came up and took a seat by mother. I became of a sudden very busy with the plants in the window; for I knew he was going to tell her.

"Wish me joy, Aunt Anne," said he, "it's all settled."

"Settled, is it?" said mother in anything but a joyful tone. "So it's as I suspected all along. Well, you have my best wishes, Tom; perhaps you may be happy together after all; I'm sure I hope so."

This wasn't a very encouraging sort of congratulation, and Tom seemed rather taken aback by it.

"I'm sorry you're not pleased," he said after a pause; "I had an idea somehow you would be."

"I don't know from what you judged. But, there, it's no use crying over spilt milk. You'll be married directly I presume; I must be looking out for a house," and mother stroked her nose reflectively with a knitting needle.

"What for?" said Tom; "I thought of keeping on here all the time."

"I never supposed otherwise," said mother. "Of course I did not expect to turn you out of your own house."

"But what is the need of looking out for another, then?"

"Why, for myself."

"For yourself!" repeated Tom, in a tone of utter amazement. "Going to leave us—just now? Why, Aunt Anne, I never heard of such a thing!"

"Now, Tom," said mother, speaking very fast, and making her needles fly in concert, "we might as well come to an understanding at once on this subject. I am fullly sensible of your past kindness—now just let me finish—I say I appreciate it, and have tried to do my duty by you in return, as I hope I should always be ready to do. I wish all good to you and your wife, and shall be glad to help her if ever I can, but to live in the same house with her is what would turn out pleasantly for neither of us, and, once for all, I can't do it."

"Aunt Anne!" said Tom, pushing back his chair, and staring in mother's excited face, "either you or I must be out of our wits."

"It's not me, then, at any rate," retorted mother, getting nettled.

Amusement and a certain embarrassment had kept me a silent listener so far, but there was no standing this; I tried to speak, but could not, for laughing.

"I think you are all out of your wits together," said mother, turning sharply. "What ails the child? It's no laughing matter."

"You don't understand each other," I gasped; "Oh, dear!—it's not Letty—oh—oh, dear!" and relapsed again.

"Not Letty?" repeated mother, turning to Tom. "Then why did you tell me so?"

I never told you so," said Tom.

"Why, yes you did," persisted mother.

"You came in and told me you were going be married."

"Yes, so I am," said Tom, still at cross purposes.

"Now, Tom Dean," said mother, rising and confronting him, "what do you mean? who is going to be your wife?"

"Why, May, of course," answered Tom.

"May!" and then, after a pause of inexpressible astonishment, it was mother's turn to laugh. "Do you mean to say, Tom, it was that child you were thinking of all the while?"

"Why, who else could it be?" said Tom, simply.

"Well," said mother, "I ought to have remembered that you never did do anything like anybody else. But still, why in the world did you go to work in such a roundabout way?"

"I wanted to see how you took to my idea," said Tom.

"And how do you suppose we were to guess your idea meant May?" mother asked.

"Who else could it be?" repeated Tom, falling back on what he evidently found an unanswerable argument. It was no use talking to him. Mother gave it up with a shake of the head.

"And you won't want another house then, Aunt Anne?" said Tom, suddenly. That set mother off again. Tom joined with her, and, altogether, I don't think we ever passed a merrier evening than the one that made us acquainted with Tom's wife.—*Kate Putnam Osgood.*

THE TELEPHONE is an invention of such recent origin that it has scarcely yet lost its novelty, but already the telephone service has attained astonishing proportions. The American Bell Telephone company has now no less than 189,374 instruments in use by customers. It has 592 exchanges in operation, 70,525 subscribers and 49,168 miles of wire. These figures show an enormous increase during the past year. The chief difficulty of extending the service in great cities appears to be that of conveying the innumerable wires through the streets. The company is still experimenting in regard to the use of underground wires, and if successful in this direction will be able to greatly increase the extent and efficiency of its service. It should, then, also largely decrease the charge for the use of instruments, which at present is excessive.

MARRIAGE IN HIGH LIFE.—An occurrence which Mrs. Ramsbotham usually calls a most suspicious event.

Education of Girls.

[Written for RURAL PRESS by MRS E. J. S.]

In raising the standard of female education, there has been, and still is, the same apathy and opposition to contend with. Although, generations ago, Plato asks, "Should not this sex, which we condemn to obscure duties, be destined to functions the most noble and elevated?" yet both men and women have exhibited a striking indifference in fitting the sex for such functions. And our legislative bodies, so munificent to male colleges, have heretofore set a brazen front of denial in the face of every application for female institutions. From their very singular and persistent course, one would suppose our law makers believed that the common weal would be best promoted by the ignorance of women; that they shared the impression so humorously set forth by Sydney Smith. There seems to be a general notion that the moment you put the education of women upon a better footing, at that moment there will be an end to all domestic economy, and that, if you once suffer woman to eat of the tree of knowledge, the rest of the family will very soon be reduced to the same kind of aeriel and unsatisfactory diet.

Can anything be more perfectly absurd than to suppose that the care and perpetual solicitude which a mother feels for her children, depends upon her ignorance of Greek and mathematics, and that she would desert an infant for a quadratic equation? I had supposed it to be sufficiently proven that darning stockings and consulting lexicons were not necessarily inconsistent. The poor old Pope Pius IX. was in genuine distress about the French government, at one time, for trying to elevate the education of girls. But His Holiness did not prevent the "woman movement" from a rapid advance. The property bill that passed the New York Legislature in 1860, and of Illinois the following year, redeemed thousands of women from pauperism, and saved multitudes from what is worse. And during the last ten or twelve years the property laws respecting women have been greatly modified in no less than 20 States. We cannot, therefore, withhold our acknowledgement that womankind owes a large debt of gratitude to these unpopular reformers, as well as many who, not working with the conventions as such, have been equally earnest and untiring in their efforts.

All women do not want to marry for a living. Some of them prefer to marry for love, and doubtless many of them would remain unmarried a lifetime, which would certainly be much more advisable than to be compelled to seek a husband because they are helpless or powerless to support themselves. If they had been educated and trained as we would train and educate a boy—to go out well fortified with self-reliance, strength, endurance and good principles, just as we would expect a young man to do. And how often are women left widows, with little ones to care for, alone and destitute. What can she do if her education has been neglected, if she has been taught dependence upon father, brother, or husband? I have heard of the charm of female helplessness; that men do not want self-reliant women. But I think all women will agree with me, that a fatherless, houseful of hungry mouths, little bare-footed, chubby-handed urchins, not only dispells that charm, but calls for earnest, laborious efforts, attended with sleepless nights of care, worry and anxiety.

Let us, then, never neglect to give the girls just exactly the same opportunities for education, culture, knowledge, improvement and a good physical constitution as we give the boys. Let us divide the money we give for college expenses equally among the boys and girls. Let us just as soon send the boys to "Worth" to be dress-makers and the girls to stay at home and work the farm as vice versa. And above all, let the girls row the boat, ride the horse, swim for a wager, rake hay, etc., to cultivate a fine physical system and be prepared to assist or put in the crops if father, husband or brother meets with accident, disability, sickness or death. Girls are human beings, born in a world of sin, sorrow and suffering. Let us be careful to prepare them for every emergency that can by any chance happen to them. There is large room for improvement in the manner and way boys and girls should be educated to best serve them for living this life themselves, and to benefit the coming generation.

Santa Cruz.

Chaff.

JOSH BILLINGS says that a good doctor is a gentleman to whom we pay three dollars a visit for advising us to eat less and exercise more.

"I HOPE this is not counterfeit," said a lover, as he toyed with his sweetheart's hand.—"The best way to find out is to ring it," was the quick reply.

IT is a time-honored custom in Quincy, Florida, to salute a newly-married couple by firing a cannon. This is to remind them that the battle of life has fairly begun.

A YOUNG dramatist shows an acquaintance through his gallery of family portraits. "Lucky dogs, those ancestors of mine!" he observes, thoughtfully. "I've made a name for them!"

Young Folks' Column.

Our Puzzle Box.

Numerical Enigma.

I am composed of twelve letters:
My 12, 2, 10 is a personal pronoun;
My 1, 3, 11, 11 is filled to the limit of capacity;
My 6, 7, 5 is a trifle;
My 6, 3, 4, 5 is to injure;
My 8 is in perpetuity;
My whole is the gala day of a great nation—a day of national rejoicing.

MELANCTHON.

Syncopations.

1. Syncopate a portion of a wagon and obtain a bever-edge.
2. Syncopate to apprise of danger and obtain pallid.
3. Syncopate principal and obtain the human race.
4. Syncopate to supplicate and obtain a recompense.
5. Syncopate to reduce by friction and obtain a contest.
6. Syncopate to weave and obtain a small nail.

A. B. C.

Word Square.

1. The smallest portion.
2. Plain and frank.
3. A proof.
4. A species of small insects

JENNIE.

Decapitations.

1. Behead tidy and leave to consume.
2. Behead combustion and leave anger.
3. Behead to be aware and leave the present time.

HELEN J. C.

Towns.

1. A preposition and fowls.
2. A conjunction, an interjection and a negation.
3. An article and a relative.
4. Recent and a kind of wine.
5. Angry, a pronoun and a relative.
6. A performance and upon.

HENRY.

Answers to Last Puzzles.

CROSS-WORD ENIGMA.—Yellowstone.

A FLORAL BOUQUET.—1. Anemone (an-knee-money). 2. Bachelor's button (butt-ton). 3. Cam-o-mile. 4. Cow-slip. 5. Fox-glove. 6. Li(e)lac(k).

PYRAMID.—

G
O R
I D A
N E S T
G R A C E

CURTAILMENTS.—1. Sink, sin. 2. Pent, pen. 3. Huge, hug. 4. Site, sit. 5. Band, ban. 6. Oft, of.

PROBLEM.—Three sheep are placed in each of three pens, all being enclosed in a large pen.

Stories About Pets.

Jocko.

Jocko was a cunning little black monkey. His mistress had more pets than she knew what to do with before she bought Jocko. She bought him because she had a kind heart, and pitied the poor boy who wished to sell him to her.

She was traveling when she bought Jocko. She took him with her from place to place. She went out one day and left him chained in her room at the hotel.

Jocko did not like to be chained. He wanted to go all over that room. He wondered if the chain was strong. He pulled at it; yes, it was strong. He pulled again; it was not strong enough—the second pull broke it.

Jocko was free to go where he pleased. He went to the bureau and tried the drawers; one of them was not locked. He pulled it open and examined the contents; he did not put things back just as he found them; he did not even shut the drawer.

Jocko next found the coal scuttle. It was full of coal. "Oh, what fun!" thought the naughty monkey.

He picked the coal out, a few pieces at a time, and spread it about the room. He put coal all over the clean white bed; he covered the carpet and rugs with it; he put some in the bureau drawers.

He jumped up on the bureau and saw another monkey in the glass. He thought to himself, "One monkey is enough around here; I'm going to kill that other one."

He had a piece of coal in his hand. He hammered away at that other monkey until there was nothing left of the looking-glass but the cracks.

What mischief could Jocko do next? He opened the toilet bottles on the bureau and emptied them. He found his mistress's powder jar and covered his ugly black face with the white powder. While he was doing this, his mistress came in.

How do you suppose she felt when she opened the door and saw the white monkey, the black bed and the broken glass? Do you think she scolded or laughed?

Poor Jocko! He did not know any better. His mistress paid for all the mischief he had done; then she bought a stronger chain for her amusing but troublesome pet.

OUR BUN.—Our Bun is not a rabbit. He is a gray squirrel, with a beautiful bushy tail. Bun has a fine new house to live in. It has a dining-room, a play-room and a bed-room. It is made of tin, and some people call it a cage. The play-room is a wheel which turns round and round, whenever Bun gets into it and tries to climb up the wires. The bed-room is the top of the cage; it has three little round windows. Bun goes upstairs through a trap-door, but he does not use a stepladder; he goes all the way up with one jump. Bun does not like to stay in his cage. He would rather run up our arms and down our backs than turn his wheel. He would rather sleep in a dark coat-pocket than in his bed-room with three windows. The other morning Bun was lost. We searched "upstairs and downstairs and in my lady's chamber;" again we called "Bun! Bun! Bunny!" in every nook and corner. While we were calling, one of the young men came in. We greeted him with the sad news that our pet was lost. He laughed at us. "Bun lost. Oh, no, he isn't. He's fast asleep in my coat-pocket."—*Tribune.*

Good Health.

Meat a Cause of Nervous Disease.

A writer in the *London Lancet* has recently discovered the fact that flesh food is stimulating in character—a discovery made at least half a century ago by a large number of thinkers, and advocated for nearly that length of time by the members of the Vegetarian Society of England, and by numerous writers in this country, as well as in Germany and in many other European countries. We quote the remarks referred to as follows:

"Nervous diseases and weaknesses increase in a country as the population comes to live on the flesh of the warm-blooded animals. This is a point to which attention has not been adequately directed. 'Meat'—using that term in its popular sense—is highly stimulating, and supplies proportionally more exciting than actually nourishing pabulum to the nervous system. The meat-eater lives at high-pressure, and is, or ought to be, a peculiarly active organism, like a predatory animal, always on the alert, walking rapidly, and consuming large quantities of oxygen. In practice we find that the meat-eater does not live up to the level of his food, and as a consequence he cannot or does not take in enough oxygen to satisfy the exigencies of his mode of life. Thereupon follow many, if not most, of the ills to which highly civilized and luxurious meat-eating classes are liable."

We cannot strengthen the above statement in any way, unless it be by indorsing it, as it presents the facts in their strongest light, and so unequivocally that there is no room for cavil. There is no doubt but that the free use of flesh food is an evil against which the public should be thoroughly warned.

HOW TO PREVENT SPRING BILIOUSNESS.—Several correspondents who are afflicted with what is termed "spring biliousness" are interested to know how it may be prevented. Biliousness is not, as many people suppose, a disease of the liver, but pertains almost altogether to the stomach. It is chiefly the result of over-eating, eating too freely of sweets, pastry, fats and highly seasoned dishes. The cold, tonic air of the winter months antidotes the bad influence of these digressions in diet in some degree; but as the warm, relaxing weather of spring comes on, the stomach begins to fail more perceptibly in its efforts to accomplish the unnecessary and injurious labor imposed upon it. Indigestion is the result. By-and-by the poor stomach gets so far behind in its work that it is altogether overwhelmed and disabled, and the difficulty culminates in a bilious attack, which is nothing more nor less than a cessation of work on the part of the stomach. The overworked organ needs rest. A bilious attack can always be prevented by giving the stomach rest by fasting for a meal or two before the final crash comes. No organ in the body will endure more abuse and still patiently continue its work than the stomach. But finally, forbearance ceases to be a virtue, and the faithful servant rebels against abuse. Correct and properly regulate the diet, and there will be no more trouble with bilious attacks at any season of the year.—*Good Health.*

THE BEST GYMNASIUM FOR GIRLS.—The exercise that is best adapted to develop all parts of the body in a natural, healthy manner is domestic labor. It is always at hand; it can be taken regularly every day, and there is such variety that almost every muscle can be exercised. Housework should never be considered menial or degrading; it is nature's laboratory, in which the girl may obtain, not only the best physical development, but most valuable knowledge that will fit her for the practical duties of life. This training may be supplemented by other kinds of exercise, such as walking and out-door sports. The very general introduction of foreign help into domestic service has proved most unfortunate for the health of American women. Closely connected with this neglect of physical training at home is an evil of great magnitude—that is, supreme devotion to brain work. The practice, pursued very generally at the present day, of confining girls in schools or seminaries for a series of years consecutively, is attended with the most serious evils. In the language of a popular writer, "it is educating our girls to death." While we would not discard education in all its various departments, extending to the highest culture, we maintain that it is no advantage or blessing if it is to be obtained at the expense of the physical system. There are other parts of the body besides the brain that need faithful training. The highest accomplishments and mental acquisitions will not compensate for impaired constitution and poor health.—*Our Continent.*

Domestic Economy.

SALT-RISING BREAD.—We quote the following recipe for salt-rising bread from the "Farm and Fireside Cook Book:" Pour half a pint of boiling water on two tablespoonfuls of corn meal, and a pinch of salt. Let it stand 10 minutes; then stir in two tablespoonfuls of flour and set it in a warm place to rise over night. In the morning add one-half pint of fresh, sweet milk, or warm water, and flour enough to make the yeast smooth. Then put it in a kettle of water hot enough to bear your hands in, and be careful to keep it the same temperature. When this rises, pour it in the batter, made of two quarts of morning's milk scalded, when cooled, and flour enough to make a batter. Be careful not to scald the flour by mixing when the milk is too warm. Beat this well, and set it to rise again in a warm place, which it will do in 25 or 30 minutes if managed right. Be careful that the place is not too hot. Now stir in flour to make a stiff batter, that cannot be stirred with a spoon; then pour it out on the molding-board, which has been well covered with sifted flour, and add a piece of lard the size of a large apple, and mix it well with the dough. Work it well, and after dividing it up in small loves, put them in well-greased pans, and set them in a warm place to rise again. When risen sufficiently, bake as quickly as possible. The bread will be whiter and nicer. This bread is considered the best kind for invalids. When done have a small brush or cloth to dip in butter to wash over the top crust. It prevents it from hardening.

TEA BISCUIT.—Sift four pounds of flour into a large wooden bowl; make a cavity in the center of the flour, and stir in slowly one pint of lukewarm milk, with half a pint of good yeast, using just enough flour to make the yeast and milk into a batter of the consistency of rich cream. Cover this over and let it stand for two hours; then cut up one pound of good butter into one pint of warm milk, with a little salt; now mix all the ingredients together, work well, dust the top with flour and let it stand one hour, after which make the dough out into biscuits, about the size of an egg; butter the baking tins and lay the biscuits in rows about three inches apart; place in a warm situation to rise, and as soon as light bake them to a nice brown in a hot oven; as soon as they are taken from the oven wash over the tops with a soft brush dipped in milk.

LEMON CAKE.—Two cups of flour, two of sugar, six eggs, six tablespoonfuls of butter, four of milk, two teaspoonfuls of cream tartar sifted with the flour, and one teaspoonful of soda. Beat all well together, and bake in two loaves. For the jelly to use with it, take three-fourths of a pound of sugar, one-fourth of a pound of butter, six eggs, the rind of three lemons grated, and the juice. Beat the sugar, butter, and eggs thoroughly together, and set in a dish of hot water until heated, then add the grated lemon and juice; stir until thick enough and quite smooth, then split the cake and put this jelly in while warm. It is very delicious.

YORKSHIRE PUDDING.—This is to be eaten with roast beef, as one would eat a vegetable, and is made in this way: Stir three tablespoonfuls of flour into one pint of milk, add three eggs and a little salt; pour into a shallow tin baking pan; put it into the oven an hour before dinner time. After it has baked for about 10 minutes, put it under the roasting beef. When the meat is taken up leave the pudding in the oven for five minutes, then pour off the fat. Serve with the meat.

SWEET RUSKS.—One quart of sweet milk, three tablespoonfuls of yeast, and flour to make a thick batter; let it rise over night, and in the morning add one cupful of lard or butter (if the former, salt must be used), rubbed to a paste with one cupful of white sugar, and three eggs, reserving the white of one egg to beat to a froth with a little sugar, and brush over the tops of the rusks when done. Mix with flour to make a stiff dough; make it into small balls; let it rise very light and bake.

BOILED CORNED BEEF.—This is much improved if cooked in plenty of water, and when thoroughly done, left until cold in the same water that it was boiled in. Lift the pot off the fire, and let pot, water and meat grow cold together. This will make it much more moist and juicy, besides tender and sweet, than if taken out and all the moisture in it dried out by standing and steaming until it grows cold. Hams, tongues, etc., should be cooked in the same way.

CARAWAY CAKE.—One cup of sugar, two cups of flour, half a cup of butter, half a cup of sweet milk, one tablespoonful of caraway seed, two teaspoonfuls of baking powder. Beat the eggs till very light, whites and yelks separately. If eaten when fresh it is nice, and helps to make that variety for which the troubled housewife is always seeking..

LEMON PIES.—The juice and grated rind of one lemon, one cup water, one tablespoonful corn starch, one cup sugar, one egg, a piece of butter the size of an egg. Boil the water, wet the corn starch with a little water and stir it in the boiling water, and when it boils pour it on the sugar and butter. After it cools add the egg and lemon. Bake with upper and under crust.

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TABLE OF CONTENTS.

EDITORIALS.—An Automatic Cheese Vat; Moisture and Fruit Preservation, 481. Passing Events; Viticultural Commission, 485. Farm Wages, 488.

ILLUSTRATIONS.—Agitator in Position for Stirring the Curd; Agitator Lifted Out of the Curd, Knife in Position for Cutting, 481.

HORTICULTURE.—Useful Plants, 482.

ARBORICULTURE.—Shelter Belts; Value of Eucalyptus Timber, 482.

POULTRY YARD.—Notes on Eggs, 482.

SHEEP AND WOOL.—The Mohair Industry, 483.

FORESTRY.—Timber on Mineral Lands, 483.

PATRONS OF HUSBANDRY.—Grange Leaflets—No. 2, Wheatland Grange Social; Grange Re-union at Oakland; Contra Costa Grangers' Association, 484.

AGRICULTURAL NOTES, from the various counties of California, 484-5.

HOME CIRCLE.—The King of the Plow, (Poetry); Tom's Wife, 486. Education of Girls; Chaff, 487.

YOUNG FOLKS' COLUMN.—Stories about Pets; Our Bun, 487.

GOOD HEALTH.—Meat a Cause of Nervous Disease; How to Prevent Spring Billiousness; The Best Gymnasium for Girls, 487.

DOMESTIC ECONOMY.—Salt-Rising Bread; Tea Biscuit; Lemon Cake; Yorkshire Pudding; Sweet Russks; Boiled Corned Beef; Caraway Cake; Lemon Pies, 487.

ENTOMOLOGICAL.—Lady-Birds; Box Disinfection; A Devourer of Scale Insects; That Great Moth Trap; Crickets and Grain, 488.

QUERIES AND REPLIES.—Orchard and Vineyard Rights; Bermuda Grass, 488.

MISCELLANEOUS.—Victory for the Valley, 489-93. Oakland Manufactures; Academy of Sciences, 493.

NEWS IN BRIEF on page 485 and other pages.

Business Announcements.

Physician, C. E. Case, M. D., Oakland, Cal.

Parker Shot Gun, E. T. Allen, S. F.

The Liverpool and London and Globe Insurance Company of London.

Valuable Farm for Sale, Albert E. Crane, S. F.

Farms for Sale, Wm. C. Prince, Martinez, Cal.

Hay Presses, Jacob Price, San Leandro, Cal.

The Week.

The most stirring event of the week in agricultural circles has been the decision of the debris case in favor of the land owners of the valley. It was perfectly natural that the bells should ring, and guns should fire, to celebrate the prospect of release from the destruction and ruin which threatened the valley farms, the valley towns, the water-courses and the harbor. It is true, of course, that there are courts beyond, to which, perhaps, the issue will go; but it is well for the farmers that the advantage is now upon their side, to encourage and to cheer them. It is fairly wonderful what they have accomplished in the way of securing a recognition of their rights during the last year or two, and now the weight of public opinion is evidently in full accord with what the learned judge has declared to be the law in the case. All that now remains to be done is to hold the place which has been gained, and see that the law is enforced.

The days have been cool and the air moderately moist. Grain cutting has been prosecuted with vigor, and the finishing touches put upon haying in some districts. The mid-summer fruit season is beginning with the arrival of the early peaches. The flight of tourists and campers from the city has proceeded, and the summer resorts are reaping their harvest.

Farm Wages Here and Elsewhere.

The arrest of Chinese immigration may prove a matter of some concern to the agricultural producers. Few, if any, will regret the prospect of fewer Mongols, providing the incoming of a better population is assured. Just in what way the new regulation will operate, cannot be fully foreseen. It is quite certain that there is a possibility that there may be some difficulty and loss to our agriculturists before the new order of things has time to arrange itself. It is usually the case in such matters, and if the hardship is not too great and the loss too severe, the farmers will be patient, hoping for the abundance of reasonable and efficient white laborers, which agriculture enjoys in other parts of the world.

What is the prospect in the wage rate? This is a question which cannot yield as satisfactory answer as some people are expecting. The popular idea is that if the Chinamen are excluded there must of necessity be more room for white laborers, and consequently there will be better wages paid. The idea seems to be that farmers can afford to pay anything which they are obliged to, and no account is taken of the fact that there are some agricultural operations which must be abandoned whenever the wage rate reaches a certain figure. If there should come an immigration of steady, faithful white laborers, who would be content to labor for anything like the price they gained in the countries or States whence they came, there would be no occasion for anxiety and no doubt as to the future course of producing interests. But the idea which has been too prevalent heretofore that a laborer in California is to do little work for big pay—will not do as a basis for calculations in the present emergency, and those who are expecting to increase their opportunity for such service by the exclusion of Chinese, will find that they have made a sad mistake. The margin of profit on farm and orchard products is too narrow to allow the farmer any indulgence in this sort of labor.

It may not be known to all that the rate of wages now paid for farm work in this State is too high, according to comparative labor values elsewhere. The Department of Agriculture at Washington has recently completed an investigation of the rates of farm wages in all the States, from which it clearly appears that California is still out of proportion in this regard. The following table gives the rate of wages by the month for hands hired by the year, with and without board:

Average Monthly Wages, by the Year.

STATES.	1882. Without Board.	1882. With Board.	1879. Without Board.	1879. With Board.
Maine	$24.75	$16.15	$18.25	$11.05
New Hampshire	25.25	16.72	19.75	12.37
Vermont	23.37	16.00	19.00	11.50
Massachusetts	30.66	18.25	25.00	15.33
Rhode Island	27.75	17.00	23.00	13.25
Connecticut	27.90	17.37	23.25	14.23
New York	23.03	15.36	20.61	13.19
New Jersey	24.25	14.20	20.25	11.93
Pennsylvania	22.88	14.21	19.92	11.45
Delaware	18.20	12.50	17.00	9.50
Maryland	16.31	9.89	14.00	8.95
Virginia	13.06	9.17	11.00	7.00
North Carolina	12.86	8.86	11.13	7.66
South Carolina	12.10	8.10	10.25	6.66
Georgia	12.86	8.70	10.75	7.38
Florida	16.64	10.26	13.86	8.73
Alabama	13.15	9.09	12.20	8.30
Mississippi	15.10	10.09	13.31	9.28
Louisiana	18.20	12.69	16.40	11.27
Texas	20.20	14.03	18.27	11.49
Arkansas	18.00	12.25	17.13	11.31
Tennessee	13.75	9.19	12.75	8.69
West Virginia	19.16	12.46	16.98	10.94
Kentucky	18.20	11.75	15.17	10.00
Ohio	24.35	16.30	20.72	13.34
Michigan	25.76	17.27	22.88	14.64
Indiana	23.14	15.65	20.20	12.76
Illinois	23.21	17.14	20.61	13.01
Wisconsin	29.21	17.99	21.67	13.81
Minnesota	26.36	17.75	24.55	15.62
Iowa	26.21	17.95	22.09	13.90
Missouri	22.30	13.95	17.50	11.54
Kansas	23.85	15.87	20.67	13.28
Nebraska	24.45	16.20	23.04	14.86
California	38.25	23.45	41.00	26.27
Oregon	33.50	24.75	35.45	23.86
Colorado	36.50	27.08	35.00	20.00
Utah	.....	.....	28.87	21.50
New Mexico	.....	.....	22.10	13.80
Dakota	.....	.....	28.50	16.57

Perhaps a still better idea of the comparative amount of wages here and in other States may be had in the following table of averages for the different Eastern and Western districts, as compared with California, of wages by the month without board:

	1882	1879
Eastern States	26.61	20.21
Middle States	22.24	19.09
Southern States	15.39	13.31
Western States	23.63	20.35
California	38.25	41.00

The wage rate here has been gravitating toward the average for several years, but is still altogether too high, and it is a well-known fact to farmers that much of their production would be unprofitable, if it had to be undertaken with this sort of labor. These matters should be well considered at the present time. The new regulations will soon begin to show their effects, although there is now arriving a surplus of the objectionable material, which will postpone the sudden appreciation of the change. A discussion of the wages question will no doubt show to some who now have unlimited ideas of the farmer's ability to pay, that he is governed by economic considerations which he cannot escape, and will lead all to understand that it is quite possible to cripple and retard our agriculture by attempts to force wages too far out of ratio with other regions with which we are competing in the produce markets.

ENTOMOLOGICAL.

Lady-Birds.

EDITORS PRESS:—I have forwarded by mail to-day a box containing some bugs taken off of Apricot trees. What are they?—J. HOBART, Nordhoff, Cal.

The insects are lady-birds, which are friends of the orchardist and gardener. In his treatise on injurious and beneficial insects, Matthew Cooke gives the following review of this class: Lady-birds, or Lady-bugs (*Coccinellidæ*) are better known, perhaps, than any other family of beetles. They are small, round, and hemispherical, usually red, yellow or black, with spots of one or the other of these colors. All are carnivorous, except *Epilachna*. The eggs are usually long, yellow, and oval, and are laid in patches, often in the midst of a group of plant-lice, which the newly-hatch larvæ greedily devour. The larvæ are long, soft-bodied, rather pointed toward the end, and are quite active. The jaws are small and inconspicuous. They are often quite gaily colored, and covered with scattered tubercles, spines, or tufts of hair. They attain their full growth in three or four weeks. When about to transform to pupæ they attach themselves by the end of the body to a leaf or twig, and either throw off the old larvæ skin, which remains around the tail, or retain it around the pupa for protection. The pupæ is small and rounded, simulating the true beetle. The perfect insect comes forth in about a week. The larvæ feed upon plant-lice and other small insects, of which they destroy immense numbers. The adult beetle also destroy other insects, although in lesser numbers than the larvæ. Quite a number of species of the lady-birds are found in orchards doing good work, a few of the most common of which we figure and briefly describe.

Coccinella novemnotata, Herbst is light yellowish red in color, and may at once be distinguished by the nine black spots upon its wing-covers, aranged as shown in the figures, four upon each wing-cover, the two hind ones being the larger, and one in front on the middle line. *Coccinella munda* is a smaller species of precisely the same color, but without any spots upon the wing-cover. Its thorax in black, with two small light spots. *Hippodamia convergens* resembles the preceding in general ground color. It is larger and more elongated. On the wing-covers are thirteen small black spots. The thorax is black, with a light yellow margin, and two lines of the same color approaching a V in shape. *Hippodamia maculata* is pink in color, with ten large black spots, on the wing-covers, of which two are upon the middle line. The thorax is pink, with two large black spots, and the head is pink, with black eyes. It is smaller than the last named species. *Coccinella venusta* is larger and broader. It is pink in color, with ten large black spots upon the wing-covers, of which the hind two blend into each other across the middle line. The inner middle spots are shaped like inverted commas. The thorax is pink, with four black spots, of which the two hinder ones meet across the middle line to form a V. *Chilocorus bivulnerus*, Muls, (the twice stabbed lady-bird), is hemispherical in form, and shiny black in color. A little in front of the middle of each wing-cover is an irregular bright red spot. The thorax is black, with a whitish border, and the head is whitish, with black eyes.

We describe the only vegetable-feeding lady-bird in order that those interested may know what it is, and not consider it a beneficial species. It is known as *Epilachna borealis*, Thunberg. It is much larger than any before mentioned, is of a light reddish yellow color, with seven large black spots upon each wing-cover. The thorax is of the same color, and has four small black spots. The head is concolorous with the thorax, and the eyes are black. Both the larvæ and perfect insects feed upon the leaves of cucumbers, melons, squashes and pumpkins—eat unsightly holes in them, and, when numerous, completely destroy the plant.

That Great Moth Trap.

Mr. Cooke, who visited the De Long orchard last week, gives the *Record-Union* some further information on the colossal moth trap, to which we alluded last week. Since this trap was completed over 6,000 codling moths have been killed on the openings of the second and third floors, especially on the those of the upper floor. One man examines and destroys the moths three times each day. In the mornings the number captured is small; the greatest numbers are captured in the afternoon. The average number captured each day is about 275. It may be mentioned that the closing up of the openings to capture the moths has also imprisoned myriads of bats that infest the roof of the building. As the moth is a night-flyer, the bats may capture a large number of them. This may account for the small number captured in the mornings. At the present writing the larvæ can only be noticed in fruit on trees in the immediate vicinity of the apple-house. Men are kept picking off all fruit showing signs of larvæ, which are immediately destroyed. It is hardly possible that such a large building could be so secured as to be perfectly closed. However, if the 6,000 moths captured, up to the 7th instant, had reached the orchard, it would have cost Mr. De Long a large quantity of fruit, in addition to the expense of picking it off and destroying the pest.

A Devourer of Scale Insects.

Prof. Riley also gives a note on an insect sent him from California, which may do much good as a scale bug eater. Prof. Riley says: In the summer of 1881 we received from Dr. J. H. Mellichamp, of Bluffton, S. C., several twigs of *Pinus elliottii*, the leaves of which are covered with a coccid, *Chionaspis pinifoliæ*, Fitch. We kept these twigs in a jar, in the hope of obtaining chalcid parasites from the scale, and were rewarded by the appearance of several specimens of *Cybocephalus nigritulus*, Lec. We had then every reason to suspect that this little beetle, either as larva or imago, or in both states, was feeding upon the scales. Our presumption has been lately corroborated by receiving numerous specimens of *C. californicus*, Horn, sent by Mrs. A. E. Bush from San Jose, California, with the remark that they were found on an apple twig badly infested by a scale insect.

Box Disinfection.

This important matter will come speedily to a legal test. It is necessary that all doubts as to the potency of the quarantine law should be removed. The issue is in this shape: Albert Lusk, John Kleinhans and Wm. Jacobs, composing the firm of A. Lusk & Co., fruit dealers, were arrested on Tuesday, on a warrant sworn out by E. Haven, charging them with a misdemeanor. It is alleged that on the 12th of May the firm received 217 boxes of apricots from Vacaville, and that the boxes were returned without being disinfected. The three gave bonds for their appearance in the Police Court. It is said that this is to be a test case, to decide the powers of the Viticultural Commission in enforcing the disinfection of fruit boxes. It is claimed, as the orchardists themselves disinfect their boxes, there is no necessity for the operation in this city. The whole subject will, no doubt, be reviewed at the coming trial.

Crickets and Grain.

According to a letter from an Illinois observer, in Prof. Riley's department of the *American Naturalist*, the crickets may play peculiar pranks with the grain grower. He states that he has found crickets eating grain which had been softened by lying on moist ground; also eating the crowns of corn ears from stalks which had blown down. The same insect has annoyed farmers considerably in another manner. Much of the harvesting is done with self-binding harvesting machines, using cord for binding. Judge of the surprise and chagrin of the farmer when, on drawing in his stacks of grain, to find, instead of compact bound sheaves, only a mass of unbound grain, the bands of cord having been cut in many places by the crickets.

QUERIES AND REPLIES.

Orchard and Vineyard Rights.

EDITORS PRESS:—Please answer for general information the following: Has the owner of an orchard or vineyard any rights which the general public is bound to respect, and how may he enforce them?—V. N., Solano County.

The fruit grower has the same right of property in his fruit as he has in his horse or cow. If the public enter his premises and take his fruit, two offences are committed: First, larceny (Penal Code, Secs. 484 and 495). Second, trespass (Common Law).

The first offense is punishable criminally either as grand or petit larceny, according to the value of the property stolen. The manner of enforcing this right is by application for a warrant of arrest for the offender to the Justice of the Peace, or to the prosecuting or District Attorney, as the case may be.

The second right is a civil one and is enforced by civil suit for damages. Such means as setting out mean traps, automatic guns, or poison are illegal, and will subject the offender to prosecution for murder or an attempt to murder, or to do serious bodily injury.

The best plan is to post a placard warning off intruders and threatening the penalty of the law.

Bermuda Grass.

EDITORS PRESS:—I send you a sample of grass that is being quite extensively planted here for Bermuda. I want to know if it is Bermuda or what it is. Also, I would like to know, through your valuable paper, where I could get Bermuda enough to plant five acres; also, the best method of planting, by some of your patrons who have had experience in raising it.—R. M. DUNGAN, Santa Ana, Los Angeles Co., Cal.

The plant is Bermuda grass (*Cyrodon dactylon*). We should like to hear from our readers about planting. We believe the easiest way to plant is to divide the roots, and if cut in short pieces and sown broadcast and harrowed in, when the ground is moist and the weather warm, there is no difficulty in making a catch. No doubt some of our readers will write to Mr. Dungan about furnishing the roots he needs.

IT is reported that 30,000 acres of railroad land, situated in the south part of Wilkin county, D. T., has been sold to a syndicate composed of James G. Blaine, Eugene Hale, J. P. Farley, and others, who propose to break 10,000 acres this season and erect comfortable houses on each quarter section, with a view to placing practical tenants on the farms.

Victory for the Valley.

Decision of the Debris Case in Favor of the Farmers.

We give below the full text of the decision rendered on Monday, June 12, in the famous Gold Run case, in which suit was brought against the miners for pollution of the rivers with debris from hydraulic workings. We insert extra pages this week to accommodate this decision, because we regard it as of the greatest importance to our agricultural population and to the State at large. The tireless men who have labored so wisely and zealously to protect their homes from debris ruin have won a great victory—a victory which is the stronger and will be enduring, because it is a triumph of right and justice. The following is the decision:

The Findings of Fact

In the Superior Court, Sacramento county, California. The people of the State of California, plaintiff, vs. the Gold Run Ditch and Mining Company, defendant.

This cause was tried by the court, a jury having been waived. Having fully considered the evidence, I now find the facts as follows:

First.—The Sacramento and American rivers are wholly within the State of California; the latter is a tributary of the former, flowing into it about one mile north of the city of Sacramento.

Second.—The Sacramento is navigable, and has been continuously navigated by steamers, barges, schooners and smaller craft, and up to 1862 was navigated as far as the city of Sacramento without difficulty by steamers of deep draft, to wit, by boats drawing nine or 10 ft. of water. That said river has been declared navigable by law to the mouth of Middle creek, which is above the confluence of the American and the Sacramento. That since 1862 the navigation of said river has been seriously impaired by deposits of mud and sand therein, which have in part come from hydraulic mines; so that now the city of Sacramento can be reached by boats of deep draft during the high stages of the water only, instead of at all times, as formerly.

Third.—That hydraulic mining, as that term is generally understood, consists in washing and removing from their natural positions into the water-courses and rivers, by means of water, high banks of earth and gravel containing gold, and thereby separating the gold from the earth, sending the residue, consisting of bowlders, cobble-stones, gravel, sand and clay, into the water-courses, the larger portion of which finds its way into the principal confluents of the Sacramento river, and is deposited along said streams from the place of discharge or dump to San Pablo and San Francisco bays, the heavier material being first deposited.

Fourth.—Hydraulic mining has been practiced for 20 years to some extent in the mountains of the Sacramento basin. It attained great magnitude as an industry before 1875, and is still extensively carried on, principally in the counties of Butte, Yuba, Sierra Nevada and Placer.

Fifth.—The tailings from some of the hydraulic mines are deposited in the North Fork of the American river, and large quantities thereof have been deposited in the channel of said North Fork and of the American river, throughout its entire course, and a large portion thereof has been washed and carried down into the Sacramento river. That the tailings from other hydraulic mines are washed and carried into the Middle and South Forks of said river, and in the Yuba, Bear and Feather rivers, which are tributaries of the Sacramento.

Sixth.—That the tailings and deposits from said hydraulic mines, with other matter carried by the waters of said rivers, has filled up and raised the bed and channels of said Sacramento river to a great extent below the mouth of the American river, to wit, from 6 to 12 ft., and has filled up and raised the American river below Alder creek from 10 to 20 ft., and in places even more. Such filling has been materially increased by the tailings from the hydraulic mines.

Such fillings have shallowed the channels of the Sacramento river, and materially impaired the navigation thereof, and has materially increased the liability of the Sacramento river and of the American river below Alder creek to overflow their banks, and has caused the frequent floods in said rivers to be more destructive than they otherwise would have been.

That the debris from mines, including the mine of the defendant, has materially contributed to such filling of the river channel, and thereby has interfered with and obstructed the free and comfortable use and enjoyment of large portions of the land upon the American and Sacramento rivers.

The American river is, however, obstructed by the levees and the levee system on the Sacramento, which cause the water to be dammed up and made to flow back into the American river and over the banks thereof, during the stages of high water in the Sacramento, and thereby large tracts of land are submerged and heavy deposits made thereon, which would not exist but for such levee system, or the defects in the same. That one of the principal sources of damage by the overflow of lands on the Sacramento river is from the erosion of the bank nearly opposite the mouth of the American river and the break in the levee at that point. That the more immediate cause of this erosion and break was the change in the course of the American river, which manifestly would have produced the break and much consequent damage although all mining operations had been suspended.

That during the highest stages of the water of the Sacramento the channel of said river is insufficient, and even if it had not been filled up would have been insufficient to carry one-half of the volume of water sent down by its various confluents, and at such times would break the present levees, even though no mining were carried on.

Still the mining debris does increase and aggravate all these evils, and renders the problem of controlling the streams and the protection of the valleys more difficult and expensive, and causes more land to be injured and the free enjoyment thereof to be interfered with than would have been interfered with or injured but for such mining debris.

Seventh.—That defendant is, and since August, 1870, has been, a corporation under the laws of the State of California, for the purpose of mining by the hydraulic process and selling water to miners and others. That it is now, and for several years last past, it and its predecessors have been in possession of certain mines and mineral land situated adjacent to the North Fork of the American river, on the north side thereof, near the town of Gold Run, in Placer county, and consisting of about 500 acres of land. The surface of said land is about 1,000 ft. above said North Fork of the American river. All the material of said mine is capable of being worked off into said American river, and consists of about 20,000,000 cubic yards of material, composed mostly of sand, gravel, small stones, cobbles and bowlders, mixed with small particles of gold.

Eighth.—Defendant, by means of ditches and iron pipes, has conducted to its aforesaid mines a large quantity of water, which it is using and will continue to use under a vertical pressure of several hundred ft., to mine its said tracts of mining land by the hydraulic process, discharging water through Little Giants and Monitors, and dumping all the tailings from such mines into the North Fork of the American river.

Ninth.—Said defendant has been mining its aid tracts of land for about eight years past in the mode and process aforesaid, and up to the time of commencing this action, and during about five months of each year of said period, has been daily discharging into the said North Fork between 4,000 and 5,000 cubic yards of solid material from its said mine—to wit: of bowlders, cobbles, gravel and sand, making a yearly discharge of at least 600,000 cubic yards, and will continue to discharge that quantity annually, if the working of said mine is permitted to continue, and at such a rate, it will require some 30 years to mine out and exhaust said mineral land.

Tenth.—That a large portion of the material so dumped by the defendant into the North Fork of the American river has been washed down said river by the water and commingled with tailings from other hydraulic mines, and still other material, which is the product of natural erosion, has been deposited in the beds and channels of the Sacramento and American rivers, but mostly in the American river, and upon the lands adjacent to said rivers; and by said mining of the defendant and other mines the filling up, raising and shallowing of said rivers has been materially increased, to the impairment of the navigation of the Sacramento river, and to the excessive overflow of the lands adjacent to said rivers, to the great injury of said land, and damage, discomfort and annoyance of a great number of citizens of the State, owners of said land and residents of said valley.

Eleventh.—That the power of water to preserve its channels and to clear out and to carry off deposits in the same is proportioned—other conditions remaining the same—to the depth of the stream and the freedom of said water from earthy matters.

That the beds of said rivers have already become so widened and filled that the depth of the water therein has been greatly lessened; that said water, at all times, is heavily laden with earthy matters, chiefly from mines; therefore, said rivers are likely to fill more rapidly in the future, in proportion to the quantity of hydraulic tailings, than in the past.

That thousands of acres of good land in Sacramento valley have already been covered by such debris, and, if some preventive is not applied, much further and greater injury is likely to ensue in the future, and large tracts of land will probably be rendered, within a few years, unfit for cultivation and inhabitancy.

Twelfth.—That the discharge from the defendant's and other mines so fouls the water of the American river at all points below, as to render said water unfit for any domestic use by the inhabitants.

Thirteenth.—That the filling of the beds of said rivers has, to some extent, obstructed the natural and artificial drainage of the valleys of said rivers, and has interfered with the percolation and flow of the water through the soil, and has raised the soil water to such an extent as would naturally increase the tendency to malarial diseases; but I do not find that heretofore, it has had any effect on such diseases, and the material carried down by the rivers is singularly free from matter which could ferment and induce malaria

Fourteenth.—That if the said acts of defendants and others, mining as aforesaid, are allowed to continue, there is imminent danger that the beds and channels of the lower portion of the American river, and of the Sacramento river below the mouth of the American, will be so filled and choked up by tailings and other deposits that said rivers will be turned from their channels, cutting new waterways, injuring or destroying immense tracts of land, and probably will result in greatly imparing the navigability of the Sacramento river.

Fifteenth.—That the filling in of said rivers below Alder creek has been accumulating from year to year. The largest deposits were made by the floods of 1861 and 1862, since which time there has been a steady increase in deposit and a slow but constant working down in the channels of the rivers of the heavier material; that it is not possible to determine the proportions of such deposits which come from mines now working in other sources, but it is quite probable—in fact, almost certain—that very much the larger part of that which injuriously fills the rivers is composed of material dumped into the river from mines within 10 years previous to the fill in the river.

Sixteenth.—That the waters of the American river and its tributaries, during the recurrence of high water in each year, move and transport portions of the debris then in the river further down the stream, and most of such matter finds its way ultimately below Alder creek, which is a point in the American river near where said stream emerges from the foothills, about 27 miles above the mouth of said river.

Seventeenth.—The grade of the American river above Alder creek to Canyon creek is about 30 ft. per mile, and below Alder creek is not more than three ft. per mile.

The mine of defendant is about 83 miles, by the river, above Sacramento, and is a blue-gravel mine, and constitutes a portion of the ancient river channels which cross the present river system diagonally.

Eighteenth.—That the Gold Run mine, in 1854, was within the mining district known as the Gold Run district.

That mining rules and regulations were in force in that district, as in all other districts in this State, which prescribed the size of the mining claims, the manner of locating and recording them, and the amount of work to be performed to enable the locators to hold their claims.

Miners' rules and regulations had no force beyond the district.

Claims in the Gold Run district were in small parcels, about 100,000 square feet, and were taken, held and worked by a large number of persons, commencing such work in some of the claims as early as 1852, and were so held until sold to defendant, which has since acquired title to said lands by means of patents from the United States.

That between the years 1854 and 1874, the upper levels of the Gold Run mines were practically all worked off, leaving the lower portions thereof next to the bed-rock to be worked off. Such lower portions now constitute the mines of the defendant, and yield in gold from 5 to 20 cents per cubic yard.

The mining and ditch property cost the present company $253,000, including tunnels and all improvements in the same.

Nineteenth.—The rules and regulations of miners did not purport to regulate the manner in which mining claims should be worked, nor the manner or places in which the mining debris should be dumped; but the universal practice was to discharge the tailings into the most convenient stream or gulch, even though it should interfere with claims located in the streams or ravines below.

It has been a custom, almost universally acquiesced in, in the mining communities of this State, to regard the streams as common ways or the discharge of mining detritus. The exceptions being where such stream has been previously occupied by some works, such as a ditch to convey water. Such right on the part of the mine-owners is, in most cases, essential to the economical working of the mine.

Such practice is necessarily confined to the mining localities and has not been recognized or acquiesced in elsewhere, except that the waters of the streams throughout their entire course have been rendered turbid and foul without complaint until within the past few years.

Twentieth.—That neither this State nor the United States has licensed the defendant or any mine to dump his tailings into the streams so as to be transported into any navigable river, stream or bay, nor has this State legalized the same.

Nor have the Sacramento or American rivers been dedicated to the use of miners as a place of deposit, or for a way to transport mining material, nor is either cause of action set forth in the complaint barred by the provisions of Secs. 315, 338 or 343 of the Code of Civil Procedure of this State, or of either or any of said sections.

Twenty-first.—That the acts threatened to be performed by the defendant in continuing to prosecute its mining industry in the manner set out in these findings, as it will do, unless restrained, if allowed to be done, will, in connection with like acts by others, obstruct the navigation of the Sacramento river, and fill up, to some extent, Suisun bay, destroy or injure large amounts of land, and constitute an obstruction to the free use and enjoyment of the property of a large number of citizens of this State.

Twenty-second.—Ancient gravel channels exist, at least 200 miles in extent, from Mariposa county to Siskiyou, crossing the present river system diagonally and at higher altitudes. These channels are from 200 to 2,000 ft. wide, and contain gravel sometimes several hundred ft. deep. Gold is distributed quite uniformerly throughout the length of the channels. The first mining was generally in the present rivers below where they had washed out the old channels.

Competent persons estimate the entire product of gold from California mines at $1,154,689,036 up to June, 1881, $900,000,000 being from the ancient channels. The present yield varies between $15,000,000 and $20,000,000 per annum, and there is no doubt much more gold still remains in these ancient channels than has been washed out.

Present investments in California mines are estimated at $150,000,000, $100,000,000 of which is in hydraulic mines. Some portion of this is, no doubt, in mines which cannot be profitably worked.

Mining for gold is the principal industry in 15 counties of the State, and the population of the mining counties is over 100,000.

In the past eight years the amount of material washed from hydraulic mines has diminished, owing to change from washing light surface gravel with few bowlders to heavy bottom gravel, and from steep grades in the sluices to light grades.

The amount washed from a mine will depend upon the amount of water used, the character of material and grade and size of sluices.

Late improvements in hydraulic mining do not increase the amount of material mined.

The various mines in the drainage area of the Sacramento river have reservoirs in which they store about 7,600,000,000 cubic ft. of water, which is gradually drawn off in the five months after the middle of July, and to that extent increases the flow in the Sacramento river.

General Finding.

To the foregoing findings of fact I desire to add a general finding, explaining, amplifying and perhaps to some extent qualifying them.

The case involves the consideration of the operation of natural forces on a large scale, and many conclusions are necessarily to some extent matters of theory or opinion. Conclusions upon such matters when expressed in legal findings often seem to imply a certitude which does by no means exist.

The field of observation is so vast that the full case cannot be presented in the findings; much must be left unexpressed, being presumed to be within the judicial knowledge of the Court; as, for instance, the geography and generally the geology of the country over which our inquiries have extended; the nature of the ancient river channels and the different forms and methods of mining which have prevailed, as well as the general history of the country—matters which everyone is presumed to know.

THE AMERICAN RIVER.

The drainage area of the American river is 1,889 square miles, mostly on the western slope of the Sierra Nevada mountains. This slope is composed of numerous deep canyons and ravines, high and steep ridges and lofty mountains. The formation is mostly granitic, is largely covered with deep soil, generally of decomposed granite.

Originally, there were very extensive forests of immense pine trees. Since the settlemet of the country there has been a continuous destruction of these trees for the lumber, although large forests still remain. Numerous roads have been cut and trails made within this area Considerable industries in fruit raising are carried on in some places, and every summer thousands of sheep are driven from the valleys into the mountains to be pastured.

As early as 1852 there were mining in the American river, in Placer county, 20,000 men, and in El Dorado county, 40,000. The earlier mining was in the bars and beds of the river or its tributaries, or in the dry diggings, which were probably older bars made in former geologic periods. The work was chiefly in mining the gravel and sand composing the river bars into the river, generally leaving the heavier cobbles in the claims.

The so-called dry diggings were worked during high water. Much of the material being light soil, was sent down the stream, leaving innumerable small pits and piles of debris on the slopes of the mountains.

In the winters of 1852 and 1853 there was

A LARGE FLOOD,

But from that time until the winter of 1861 and 1862—the memorable flood year—there was no flood of moment.

Of course, at this time, an enormous amount of material would naturally be exposed to the transporting power of such deluge, and, accordingly, we find that for the first time the inhabitants of the valleys become aware that the water was filled with sediment which menaced the navigability of the rivers, and which left large deposits of sand upon their margins. It is probable that more sediment was brought down by the river during that year than any year since.

It is contended by the defendent that most of the sediment in the river is from other sources than mining. Perhaps this is not so important an inquiry as it is deemed. What proportion of sediment is from mining, and what from other sources it is impossible to determine; but it probably may be safely claimed that the greater portion is from mining deposits made within the periods of the recurring high floods, which are from 8 to 10 years apart.

The Sacramento might be expected to bear 19,000,000 cubic yards of sediment, independently of mining debris, per annum. The drainage area of the American river is about one-

twelfth of the Sacramento basin. The erosion upon the American river would, however, naturally be much above the average. Let it be placed at twice the average, and then natural erosion cannot be held responsible for half the material which is carried in suspension to the Sacramento, and which is rolled along the bottom of the river, at least below Alder creek. Again the character of the material is

AN IMPORTANT CONSIDERATION,

Generally the wash from other sources than mining is the very lightest material; the exceptions are land slides and sudden cutting of gullies on the hill sides. The wash from such sources, therefore, would be easily managed by the great volume of the lower rivers, and would be carried in suspension to Suisun bay, which is the great settling reservoir of the basin. The damage to the rivers or the adjacent land would be slight.

Mining debris, however, is of all degrees of fineness. The question as to what will be carried down will depend upon the size of the rocks which the water has sufficient force to roll along. In other words, it will furnish the heaviest material which can be transported. This is just the material which naturally fills the rivers below the foothills more or less permanently while slowly but constantly creeping further down the stream.

It is probably from this source mostly, rather than from causes other than mining, that the material has come which has filled the channels of the Yuba, and the Bear, near their confluence with the Feather.

It is contended by the defendant that all the debris which it puts into the American river (save a small per cent), remains permanently above Rice's bridge—a point about nine miles below Canyon creek—and no question in the case has been more minutely examined. This portion of the river is through a rocky gorge with banks sloping at an angle of from 30 to 40 degrees.

According to a profile furnished by the defendant, the grade of the original bed from canyon creek for about two miles, was over 70 ft. per mile; then for a distance of over four miles the average grade was a little less than 40 ft. per mile, with occasional spaces of several hundred feet each, in which the grade was ascending. The remaining distance the grade was about 21¼ ft. per mile. There is a large fill now in the river, commencing about one-half mile below Canyon creek.

THE SURFACE GRADE

Of the present bed for this portion of the first section which contains any fill one and one-fourth miles is 46 ft. per mile. The grade of the next four miles is 40 ft., and the remainder over 36 ft. per mile—the last quarter of a mile being 25 ft. per mile.

Prior to the commencement of the work in the present pit, or lower portion of the mine, it is estimated that there had been washed from the upper, or old washings, 67,000,000 cubic yards of material, which also come into the American river through Canyon creek. Also large quantities of material were placed in the same sections of the rivers from the Iowa Hill mines.

The surface of the old washings was principally light red earth, with sand and pipe clay. In the channel, however, the old washing was chiefly composed of gravel, sand and cobble stones.

The old mines ceased to be operated because, as the miners say, they ran out of grade, and not because of a change in the character of the material. The banks are of a mixed character of sand, gravel and cobbles, from the top to the bottom. In the present pit, however, there is no pipe clay in the ribbon or channel which will be worked, and none of the red earth, and there is a constant increase in the average size of material as we approach the red rock. There was no clear line of distinction between the present and old washing. The great proportion of material in the lower pit, therefore, cannot reasonably be heavier than 10 of largest material in the old washing. It seems that, prior to 1875, this portion of the river was filled with this debris to a much greater depth than at present. All this material was washed out and went down stream, as also vast quantities of material put in from the Iowa Hill mines.

The material in the river is naturally graded as to size down stream; the heavier being first lodged, and then the next in size, and so on.

THE HEAVIER MATERIAL,

Therefore, cannot hold back the lighter debris which has been separated by the water, and is constantly washed lower down. If all the detritus from the top washing has gone down over the lower grades of the original bed, certainly that portion of the material in the present pit, which is not heavier than the largest cobbles in the old washing, will pass over the present increased grades of the river, if we suppose that the hill now there is so impact that it will remain.

But I think it altogether probable that the profile is incorrect. The surveyer who made it is evidently competent and apparently candid, but he did not measure the depth of the fill. The estimate must be very much in excess or considerable of the old fill must still be there. In either event the case must be taken as established against the defendant—that a considerable portion of the material will and does come down the river.

It may be added that at high water the current of the river at this point must have a velocity of at least from six to eight miles per hour. There are few cobbles or bowlders which will exceed 10 inches in diameter. Theoretically they would all come down.

THE CONDITIONS IN THE AMERICAN RIVER

Differ widely from those at the Polar Star dump in Bear river, aside from the fact that the material at the Polar Star is heavier and the stream of less force. At the Polar Star, if I have rightly understood the evidence, the fill is immediately at the dump, some of the material rolling up stream above the point of discharge.

The larger bowlders, therefore, do hold back the lighter material. At Canyon creek the material, after it reaches the river, is transported by the water from half a mile to six and eight miles before it finds lodgment, and is, of course, completely graded by the action of the water. It settles on a steep incline and is so distributed as to build up the bed of the river to a uniform grade. It forms nothing like a dam, but at the upper end rests against the steep grade so as to form a continuous incline, over which most of the material passes, even at ordinary stages of the water while the mine is working. I think it may be assumed that the new grade at Pickering's Bar—46 ft. to the mile—is just the grade over which the very heaviest material of the mine will not pass at ordinary winter stages of the river. It certainly all passes over the grade from Canyon creek to Pickering's Bar, and will continue to be completely sorted by the water, and therefore, as it seems to me, a large portion of it must inevitably come down.

THE COARSER MATERIAL

Will travel very slowly, probably requiring many years before it reaches Alder creek—10, 20 or more, according to the size. No doubt much which was thrown into the river many years ago is still slowly moving down and, though all mining should cease, will continue to come for many years. This is important, as showing to what extent stopping the work at the mines will afford a remedy. It appears that this part of the injury is easily remedied, and at comparatively little expense, by the erection of dams to impound the debris. If the experts are correct in their conclusions—and I am bound to so conclude—all that is very greatly injurious could be so impounded.

Of course during its slow journey the detritus is very greatly comminuted; much of it will be carried off as clay in suspension; the proportion cannot be determined.

On the American river, and its tributaries, a vast amount of mining was done in early times, and up to this time a great deal is being done beside that by the defendant. No other mine contributes annually more detritus to the river than the defendant; still I am unable to say that defendant's mine alone, without reference to the debris from other mines, materially contributes to the evils mentioned; or, in other words, if there were no mining operations save those of the defendant, I am not prepared to say that it would materially injure the valley lands or the navigation of the river. It is the aggregate of debris from all the mines which produces the injuries mentioned in these findings.

The lower portion of the American river is very much filled with debris, and has been, in places, much widened. As yet, however, no such state of things exist there as is seen in the Bear and Yuba near their confluence with the Feather. Perhaps if it were not for that instructive lesson we should not be justified in anticipating all the evils which may yet flow from these constant accumulations.

ABOUT ONE THOUSAND ACRES

Of valuable farming land have already been covered with heavy sand along the margin of the American river, and the adjacent lands are subject to frequent overflow.

The overflows would probably occur to a considerable extent, although there were no mining. Very much of the trouble from this source comes from back-water from the Sacramento.

In flood times, if the rains have been general, the American is the first to rise. The Sacramento then being at its low state, the flood rushes out loaded with sand and mud, and, with very great velocity, is precipitated on the Yolo shore, and there covers large tracts of land with its sediment. At such times the current is much greater than at any other time, and, of course, a great deal of sediment which has accumulated in the river during slack or low water is carried out.

About 15 hours after the rise of the American, the flood from the Feather, also surcharged with mud, reaches Sacramento, and 36 hours later the floods of the upper Sacramento. By this the current of the American is checked, and considerable land sometimes remains submerged by back water. At such times, of course, sediment is left both on the lands and in the channel of the river, which otherwise would have gone off in suspension.

SACRAMENTO RIVER.

The plane of low water has been raised about six and one-half feet since 1849 in the Sacramento. The rise in the low-water plane has been continuous since 1868, when the low-water mark was about two feet above the low-water plane of 1849, although in some years, probably for special reasons, it has been higher than in the succeeding year.

This indicates that the bed of the river at the shoals has been filled at least six and one-half feet, and probably much more. The consequence is that the influence of the tide is not felt above Haycock shoals—nine miles below the city—it formerly being about two feet at Sacramento.

As we go down the river there is a less elevation of the low-water level, indicating an increase in the grade of the river, from which will follow additional force to carry off the sediment.

The levees of the river are insufficient to carry one-half the water during the periods of the higher floods. Breaks are, therefore, inevitable, and perhaps have caused, in some localities, greater damage than would have occurred had there been no levees. The levees, to some extent, increase the scouring force of the water, but not so much as would be the case if the water were not at its high stages already surcharged with sediment. The levees, also, somewhat prevent the river from wasting its material along the banks and building up the valley as it builds its own bed, and causes it to carry to its mouth more material than it otherwise would do.

As to the islands below Grand island, I conclude from the evidence in this case, that at present they cannot be reclaimed by any practical means. Of course, the quantity of sediment in the river makes the problem more difficult and the means more expensive if they are to be reclaimed; but it would seem evident that this cannot be done at any reasonable cost until they are still further built up by the operation of natural causes.

SACRAMENTO CITY.

I am compelled, by the weight of the evidence in the case, to find against the plaintiff in the charge that the prosecution of its industry by the defendant, with similar operations by others, has impaired, or to a material extent is likely to impair, the sewerage of Sacramento, or injuriously affect the sanitary condition of the city.

The sewers of the city are about seven feet above tide water. The drainage was never into the Sacramento river, and perhaps could not rightfully be there. It does not appear that the city has been deprived of any outlets for its sewerage by debris, nor do I see that the drainage has been interfered with, except during the very highest floods, which may be expected about once in eight years. The interference, at all events, is quite inconsiderable.

It is said that the soil-water is raised in the city by sipage, so that cesspools are emptied of their contents. It is natural to think that raising the water level in the river will necessarily raise the level of soil-water in the vicinity. That it does so, to some extent, I cannot doubt.

The drainage canal from Sacramento to Snodgrass slough, a distance of 25 miles, has a fall of about six ft. There can be no good drainage under such circumstances without pumping, and I do not see how the debris has made matters worse in this respect.

The health of the city has been steadily improving for the last 25 years and during all that time the city has ranked very high in regard to healthfulness with cities of equal population and similarly situated.

There has been manifested during late years, however, some tendency to a change in the character of the disease, from those of a purely malarial character to those of typho malarial character. This seems to be the usual course of disease in all newly settled countries, and, according to the testimony in the case, could not have been otherwise. The slight indication of a typhoid epidemic during one year is nothing more than is to be expected in any city.

I am entirely satisfied that the question whether the deposits of debris in the vicinity of Sacramento has affected or will injuriously affect the health of the city is altogether too much a matter of theory to be the foundation of a judgment which shall deprive the defendant of the use of its property.

FOULING THE STREAMS.

The first mining in the river bars and channels discolored the waters to some extent as early as 1853, and the rivers have become more and more discolored by sediment since. The early mining was in well-washed sand and gravel, which contained none of the red earth which has since so highly colored the water. The dry diggings were in red earth, but were prospected only during high water, and therefore during the summer the rivers become reasonably clear.

As ditches were constructed, and mining in what are called surface diggings, as contra-distinguished from deep gravel mines, commenced, the water began to be colored as at present, red or yellow. This color is from sesquioxide of iron, which is not found in the deep gravel mines. The cementing material, however, contains protoxide salts of iron. Peroxidation of this commences upon its exposure to the air and water. This ferruginous clay is readily transported by the water, and probably is not so peroxidized as to discolor the water while being transported.

Washing in the red gravel has greatly diminished since 1875; but probably the water still receives its deep color principally from surface washings.

There is evidence of considerable

FILLING IN SAN PABLO BAY,

Principally along the channels through the bays. Practically there is yet no impairment of navigation in this bay, and is not likely to be for many years to come. Suisun bay is rapidly filling with sediment, but I conclude from the evidence that the volume of water passing through will always maintain channels sufficient for the purposes of navigation.

Conclusions of Law.

First.—That the plaintiff's cause of action and its right to the relief in this section demanded, is not barred by all or either of the statutes of limitation pleaded by the defendant in this case or otherwise.

Second.—That defendant has not acquired any right to the use of the bed of the American river, or of the Sacramento river, as places of deposit for its mining tailings, nor to choke or fill with such tailings the channels of said rivers in the valleys thereof, nor to flow or overflow the said lands situate along the bank thereof.

Third.—That the said acts of defendant constitute a public nuisance, in that they are an obstruction of the free use by a considerable number of the citizens of this State of their said lands, situate along the banks of said rivers as aforesaid, so as to interfere with the comfortable enjoyment thereof, and in that they unlawfully obstruct the free passage and use in the customary manner of the said Sacramento river.

Fourth.—The mining customs, usages and regulations authorized by the statutes of this State, or recognized by the decisions of its courts, are local in their operation, and have not and are not intended to have any effect beyond a mining bar, diggings or district in which they have been adopted or recognized.

Fifth.—That the mining laws and mining customs or practices of the said Gold Run mining district, in which said defendant's mines are located, mentioned and referred to in the findings of fact herein, were not intended to and did not and cannot protect the defendant in the doing of the acts, matters and things complained of in this action.

Sixth.—That the plaintiff is entitled to a decree of this court restraining and enjoining the defendant, its superintendent, agents and employees, from discharging or dumping into said North Fork of the American river, or into Canyon creek, and also from suffering or causing to flow into said river any tailings, bowlders, cobblestones, gravel, sand, clay, debris or refuse matter perpetually, or until it shall be first shown, upon application made to this court for a modification of such decree, that dams shall have been built in said American river, which will prevent the heavier portion of said material, including the coarser sands, from coming below Alder creek, or until some other means equally efficacious shall be adopted to impound said debris, and which, in the opinion of the court, upon such application, will certainly prevent sand, and all heavier material than sand, from being carried by the water below Alder creek.

J. TEMPLE,
Superior Judge, presiding.

June 12, 1882.

The Opinion.

The People of the State of California, plaintiff, vs. The Gold Run Ditch and Mining Company, defendant.

This action is brought to restrain the defendant from dumping his tailings into the North Fork of the American river. It is charged that these tailings, being washed down by the current, are deposited in and fill up the channel of the American river below Alder creek, as well as the Sacramento, impairing the navigation, increasing the liability of both to overflow, and making each overflow more destructive, causing deposits upon the farming lands, thereby rendering them unproductive, raising the soil water, which also tends to unproductiveness, and producing malarial and other diseases among the inhabitants of the valley. It is substantially found that much of the tailings come down the streams, filling up the rivers, and producing most of the evils charged. Navigation has been obstructed, much valuable land covered with sand, and that the continuation of the practice will probably be productive of still greater damage.

The finding may be considered for the defendant, however, upon the charge that the debris adds materially to the malarial influences, or have obstructed, or will obstruct, the sewers of Sacramento, or have injuriously affected the sanitary condition of that city. It is found that mining pollutes the water of the rivers with mud, rendering them less suitable for domestic purposes. And that numerous other persons engaged in the same pursuit contribute debris to the same streams, but for which contributions the river would be able to maintain their channels without serious obstruction, notwithstanding the detritus from the mine of defendant.

The case is quite unusual in some respects, and I have departed from the customary findings by adding a general finding in which are stated some conclusions in a mode less formal, and some deductions from the evidence, hoping that the special findings will be sufficient to sustain the judgment, and that the general conclusions may aid the appellate court in a review of the case.

The decision has been more or less delayed by other official work, and somewhat by failure to receive in time the promised briefs, and I especially regret that counsel for the defense have not complied with my repeated request that each party would suggest the points upon which special findings were required. There is no possible utility in an elaborate argument on my part in support of the conclusions to which I have arrived; but, in fairness to counsel, I will briefly state some of the conclusions,

(CONTINUED ON PAGE 493.)

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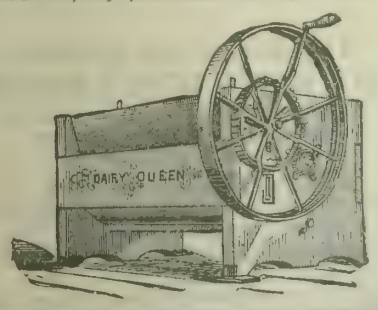

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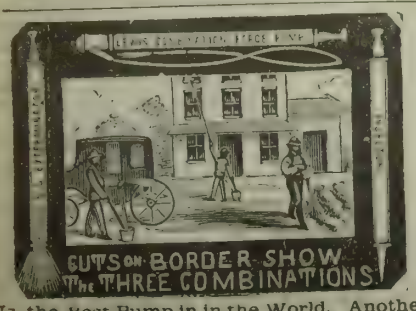

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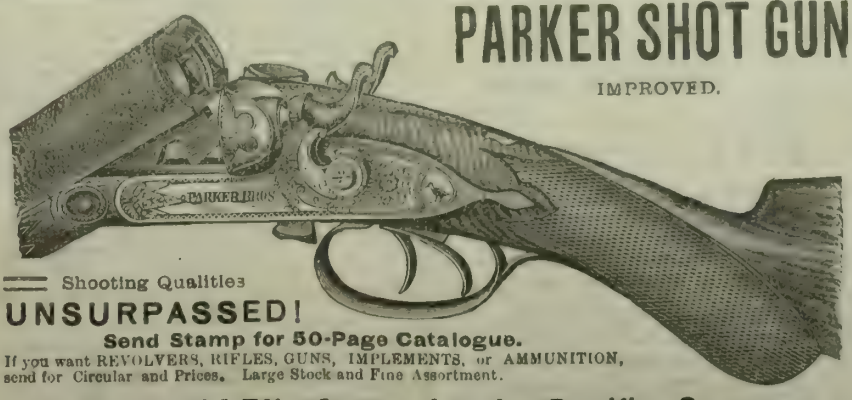

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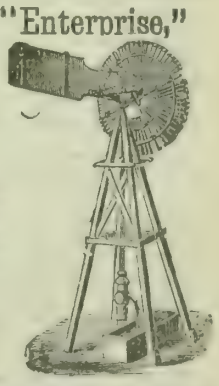

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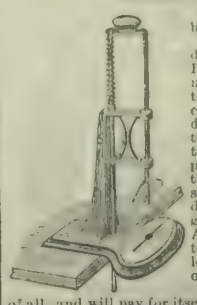

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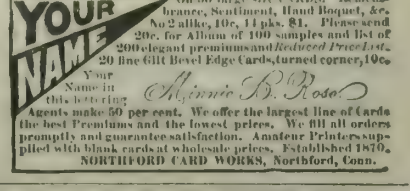
The low price comes within reach of all, and will pay for itself with two days work. It is invaluable to the housewife for preparing fruit for canning and other purposes. Ask your hardware dealer for it. Try it and be convinced. For particulars address,

A. DONATELLA, Healdsburg, Cal.



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Grain Cleaner.

Among the several grain cleaners brought to the notice of Threshermen this season, T S. Bayley has completed and patented one which presents several points of superiority over all others For cheapness, simplicity, easy draft, lightness, durability, capacity and convenience, it excells. The sieves are so arranged that the wheat screens can be taken out and barley run through from the thresher, thereby cleaning it more thoroughly. Prices, with header trucks, $360; with shop trucks, $325; without trucks, $275. For circulars and further particulars, address, T. S. Bayley, San Leandro, Cal.

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LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

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A NEW AND BEAUTIFUL

SUMMER RESORT.

SODA BAY, on Clear Lake, Lake county, Cal., the favorite lacustrine resort, is justly regarded as combining greater advantages and affording more attractive and interesting natural features than any other watering place in the State. The climate, as a relief from the severe winds of the coast, is invaluable for the health of children and delicate persons indeed, for all requiring the change demanded annually by the residents of San Francisco While entirely free from the fog, the wind and the chill of the sea coast, the climate is greatly modified from the heat of the interior by the proximity of the beautiful lake, upon the margin of which, for a distance of two miles the grounds are extended. A splendid grove of live-oak, pine and manzanita trees, of great age and gigantic growth, affords the most delightful shade. A beautiful bathing beach offers the choicest facilities for aquatic pastime, far from the danger of the sea surf or chill.

The Great Spring (Indian name, OMARACHAH BEE), emitting not less than a million gallons daily, of delicious effervescing soda water, is one of the most interesting natural curiosities of California, and the bath in its exhilarating fountain has an electrical effect that is as delightful as it is beautiful. Extraordinary solfataric action all around the shore of the bay, due to the presence of innumerable mineral springs and chemical action upon a vastly extended scale has given the place the name by which it is known—Soda Bay.

Daily excursions are made to Borax Lake, Sulphur Banks, and other points of interest. A new trail leads to the summit of Uncle Sam, 4,400 ft above the sea.

Ample provisions are made for the entertainment of the patrons of this popular resort The Hotel and the cottages are furnished with comfort and taste. Among the diversions of the place are boating and sailing—yacht and steamer, bowling, billiards, croquet, equestrian exercise, fishing and hunting, and a beautiful pavilion for music and dancing; in short, nothing is lacking for the enjoyment of those who seek rest and recuperation or interesting and healthful recreation beneath the shady oaks and by the ever beautiful lake, in a climate which, for health and for comfort, is acknowledged to be unsurpassed, if, indeed, equaled in the world. Billiards, croquet, ten-pins, and baths, free.

To reach Soda Bay from San Francisco, go by train to Calistoga or Cloverdale, thence by stage to Kelseyville, at which place a carriage from the hotel will meet passengers. Through time, 11 hours For further information address,

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Calaveras Big Trees,

CALAVERAS COUNTY, CAL.

J. L. SPERRY, - - Proprietor.

Tourists can find at the Calaveras Group larger, taller and a greater number of Big Trees than can be found in all other groves of California combined.

THE MAMMOTH GROVE HOTEL is situated right in the Calaveras Grove. This grove contains 93 of these giants of the forest.

THE SOUTH PARK GROVE

Is six miles distant, and contains 1 380 Big Trees of immense size. This grove has been inaccessible to visitors until quite recently. A good horseback road now connects the two groves. There is the finest trout fishing and hunting in the immediate vicinity.

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Fare from San Francisco, $11; from Stockton, $8. Leave Stockton at 8 o'clock A. M.; by rail to Milton. Thence by stage coach to Trees—same day.

Stage to and from Yosemite leaves and arrives daily.

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Forty miles West of Williams, Colusa county, on the main traveled road from Colusa to Mendocino.

Three Different Routes to the Springs,

One via WILLIAMS, one via CLOVERDALE, LAKEPORT and UPPER LAKE, one via CALISTOGA and LOWER LAKE, and all connecting with the train

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Fare will not exceed TWELVE Dollars either way. Daily Mail via LAKEPORT, Semi-weekly mail via WILLIAMS. Post Office, Express Office and Telegraph Office here all the year through.

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SANITARIUM.

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Seven miles south of Lakeport, four miles of Kelseyville, and in sight of Clear Lake, at an altitude of 1700 feet, and is Sheltered from the Coast Winds and Fogs by mountains 1600 feet in hight, which for

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While the Beneficial Effects of its Mineral Waters are equal to any in the United States or Europe.

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Analyzed by Prof. W. B. Rising, University of California.

TEMPERATURE.....85°

	Grains per U. S. Gallon.
Chloride of Sodium	1.290
Bicarbonate of Potash	0.544
Bicarbonate of Soda	21 763
Bicarbonate of Lime	50 411
Bicarbonate of Magnesia	70.243
Bicarbonate of Iron	0 953
Bicarbonate of Manganese	trace
Silica	7 308
Alumina	0.169
Organic Matter	trace
Free Carbonic Acid	74 462
Total	237 262

W. B. RISING, Berkeley, April 3, 1882.

DR. C. M. BATES (formerly of San Francisco), having become sole proprietor, by purchase and lease, of these justly celebrated Springs, will devote all necessary time and attention to persons requiring the use of the waters.

Good Hotel and Cottage Accommodations.

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Direct Route via San Rafael and Cloverdale 7:10 A. M., will arrive at Springs 5:30 P. M.

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On Tuesdays, Thursdays and Saturdays

Will be met at Kelseyville with private conveyance, if notified.

For further particulars, address

DR. C. M. BATES,

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JAMES HUTCHINS, Proprietor.

HARBIN HOT SULPHUR SPRINGS,

LAKE COUNTY, CAL.

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AND

CALISTOGA STAGE LINE.

San Francisco

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LAKEPORT

In Eleven Hours.

Passengers leave San Francisco via C. P. R. R., at 8 A. M.; arrive at Calistoga 11:15 A. M. Leave Calistoga at 12 M. daily (Sundays excepted); arrive at Lakeport in evening. On Tuesdays, Thursdays and Saturdays, stages leave Calistoga for Lakeport via Middleton, Glenbrook, Kelseyville and Soda Bay; Returning alternate days.

This is the Most Direct Line from San Francisco to Lakeport.

Most Picturesque and Romantic Route on the Coast. From Mt. St. Helena it affords the traveler a view of the famed Napa and Russian River Valleys and the Coast Range; and from Cobb Mountain to the great Clear Lake Region in front and the Pacific ocean in the rear. This line connects with stages for Anderson, Adams, Siegler, Howard Springs and Soda Bay. On Mondays, Wednesdays and Fridays stages leave Calistoga at 12 M. for Middleton, Guenoc, Lower Lake, and Sulphur Banks; returning alternate days. This line connects at Lower Lake with stages for Siegler, Howard, Adams and the celebrated Bartlett Springs. These lines are stocked with fine

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Ditson & Co. publish a large number of books that are purely American in design and composition.

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46th Psalm (80 cts) by DUDLEY BUCK, is a favorite.

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Belshazzar ($1) By BUTTERFIELD.

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New Flower Queen (75 cents) By GEO. F. ROOT.

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Redemption Hymn (30 cts) By J. G. D. PARKER, will be most acceptable to choirs and choruses.

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It is light, can be attached to any thresher; $5.00 per year will keep it in repair. By its use 500 bushels more per day can be threshed and cleaned, saving to the farmer enough to pay his threshing bills, also putting the grain into merchantable condition, saving time lost in reopening sacks and cleaning over Farmers and Threshers will please call and see for themselves, at No 128, 15th street, between C and L streets, Sacramento Also, my Feeder and Elevator Attachment, so well and favorably known as to need no comment. A. W. LOCKHART.

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This House is the Leading Hotel of the City, containing all the modern improvements. General Ticket Office for the Big Trees, Yosemite Valley, Bodie, and General Stage Office for all the Southern Mountain Towns. The Yosemite Coach will convey guests from the boats and all trains, free of charge

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Valuable Farm For Sale.

One of the best and well-known farms in Alameda County; near station; all level bottom land, very productive. Two thousand acres at the low price of $50 per acre, not including the present crop, worth over $30 per acre. Terms, Cash, or part deferred payments, low interest.

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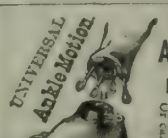
A farm of 418 acres, 8 miles southeast from Martinez, in Contra Costa county. Substantial improvements; well adapted to grain and stock. Reference, Judge Brown, Berry Baldwin, or S. Bennet, Martinez, and the proprietor on the place, WM. C. PRINCE



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Victory for the Valley.

(Continued from Page 490).

The defense—which may be designated by the terms statute of limitations, prescription, dedication and way of necessity—may be passed with the remark that obviously the plea indicated by each term or phrase cannot be a defense in this case. Indeed, it appeared to me on the argument neither was really relied upon, but were all used as a convenient means of illustrating and enforcing a more plausible proposition, which may be briefly stated as follows:

The customs, usages and practice of miners, which have universally prevailed, and which have everywhere been acquiesced in throughout the State ever since its organization, have sanctioned this use of the navigable streams, and in connection with the recognition and approval of the Government, both State and national, for a long series of years. Everyone knowing the practice, and no one objecting, has changed the common law upon this subject—or at least the equitable circumstances exist which bind the consciences of both Governments and which cannot be disregarded by them. The equitable circumstances alluded to are manifest and could hardly be too strongly stated. So great a calamity to so many people as would result from a judgment in this case, were it to be a precedent, has probably never been produced by any case in this country. And the acts which are said to be wrongful have certainly been tolerated so long without objection, if they have not been encouraged, that no shadow of blame can possibly attach to those who have invested their money in it. If the question were in a legislative body, whether some law which had permitted it, and under the sanction of which it had grown into importance, should be repealed, the suggestion would be irresistable. So it would in an action, perhaps, where it involved only the proprietary rights of the Government, or any interest of the Government, simply considered in its corporate capacity. Such were the facts in the cases cited for the defense.

But there can be no estoppel which shall prevent the State from exercising its general governmental powers in providing for good government; and certainly no equities can grow up in favor of one set of citizens as against others by the fact that illegal acts have been long tolerated or that they are convenient in the preservation of a great industry the importance of which has been repeatedly recognized. Here are many citizens complaining that their rights are being violated, their property and their health threatened, and their common highway over navigable waters obstructed by the illegal acts of the defendant and others. To constitute equitable circumstances which can bind the Court in such a case they would need to be such as would legalize the acts claimed to be wrongful. Has, then, the national or State Governments licensed the defendant to make this use of the navigable streams, or in any way legalized the practice? Has the common law in that respect been modified, as claimed by the defendants? It is of course not claimed that any action on the part of the Federal Government has changed the common law of this State. That is not within the authority of that Government. So are the authorities, and they were not needed in so manifest a case. And it would seem equally clear that the United States has not licensed this use of the rivers, and that it cannot do so, nor can it dedicate them to the use of the miners.

For the purposes of this inquiry it may be conceded that it has licensed the miners to enter upon the public land, to prospect and dig for gold; to appropriate the waters from the non-navigable streams and conduct them for long distances, discharging them again—perhaps into streams from which they were not taken—corrupted and surcharged with mining debris. Washing the hills down into canyons and the channels of the mountain streams. To make every canyon or gulch a common way for the tailings of all. That it has finally sold to them the mines with the right to extract from them the gold, and with the full knowledge of the mode of working them, and with full knowledge that the practice of miners in this respect was universal and under claim of right.

These propositions are not admitted on the part of the plaintiff, but do any or all of them imply the consent of the Government to the deposit of tailings in the navigable rivers?

Obviously, all these are the acts of a land owner. The Government has suffered this occupation and use of the public land. They can imply nothing more, for the United States has no further rights in the matter, or power over it. It was stated on the argument, that Congress may, and perhaps has, devoted these navigable waters to this industry, under the power to regulate commerce. But evidently this cannot be so. The reason given was that gold facilitates commerce. The products of most industries promote commerce. Nothing facilitates it more than good government and security for property. Under such a construction, the power to regulate commerce with foreign countries and among the States would be the Aaron's rod to swallow all others. The reserved powers of the States would only be exercised by sufferance. Mining is not a branch of commerce, and certainly not of commerce with foreign nations or among the States. But, if Congress did possess the power, the intention to permit the destruction of navigable waters, so extensive and important, could not be inferred from any doubtful acts. Such a policy is opposed to the practice of all civilized people, and to our own traditions especially. It is manifest from a simple statement of the proposition, that no such result was or could have been anticipated. Then the evil was not evident immediately. There does not seem to have been any material injury until 1864, and even yet it is stoutly denied that the tailings materially injure navigation. The suggestion as to the intention to be inferred from the acts committed and industry encouraged apply with equal force to the claim that the State has licensed this use of the navigable waters.

The Legislature and the courts have recognized the fact that the United States has licensed this extraordinary intrusion upon the public land and the rights asserted by the settlers. Beyond this it has provided for their governmental wants as it has for other communities, and has done so, in part, by recognizing the rules and regulations adopted by themselves when they practically had no government, save such as sprang spontaneously from the instinct for order and genius for organization which seems part of the nature of people accustomed to self-government.

These were principally to settle their possessory rights to the land, and to subject it to what was then a novel use under our system. As has been said, it, by wise judicial decisions, has molded them into a comprehensive system of common law, embracing not only mining law, but also regulating the use of water for mining purposes. Perhaps these customs and the practices of miners have been the chief agency in modifying the law of riparian rights—if it has been modified—as not suited to our climate and civilization. In all this, however, there is no rule or custom which can justify the claim that by common consent the navigable waters were subjected to the use of mining, so as to allow tailings to be deposited in them to the injury of navigation. The only thing that can be said is that, in the prosecution of a great industry by a great many people. the practice of dumping into the mountain affluents of these streams has been followed for a long time, and that a great deal of money has been invested in the business, in the full belief, justified, to some extent, by long toleration, that it would be permitted to continue, and that extensive villages have grown up dependent upon it. The rules and customs of miners and their practices, or the fact that they have become part of the common law, outside and apart from this long tolerated practice of dumping into these navigable streams, cannot affect this question.

The practice of dumping directly into the navigable waters has never existed, and it is difficult to see how long submission to the consequent injury differs in any respect from any other case where a community has tolerated a nuisance for a long time. In other words the defence is an ingenious attempt to evade the rule. *Nullum tempus occussit regi*, the evidence of acquiescence is long endurance.

The mischief, however, as has been said, was not immediately apparent. An action could not have been maintained, for lack of evidence of injury, for many years. A public wrong is not made legal, and certainly acquires no vested right to be perpetuated from long forbearance. There being no change in the common law, the case would be remitted to the ordinary defense of the Statute of Limitations.

I have concluded to so find that when the heavier debris is completely impounded mining may be resumed, virtually refusing to hold that the plaintiff may enjoin such operations as only corrupt the water with mud and render it less suitable for domestic and other uses. Perhaps I am somewhat moved to this by the consideration that mining can never be prosecuted at all. It will probably be impracticable to impound the lighter portion of the sediment. I confess I shrink from a consequence so far-reaching. It seems to be a conceded fact that this is not materially injurious either to navigation or the riparian lands. Counsel denied that there was any intention to assail the prosecution of drift, seam or quartz mining. There was no material injury from that source. The sediment from such mines is of the same character as the material which cannot be wholly impounded. Perhaps this will not materially add to the permitted evil.

The authority of the Attorney-General to bring the action in the name of the people, has been called in question, and may become a serious question in the Supreme Court. Practically, it was made only on the final argument. Under the circumstances, I do not doubt the propriety of my referring that matter to the Supreme Court. If the point were sustained and the case dismissed, in the event of a reversal, a new trial would be necessary before the vital questions involved in the controversy could be presented to the appellate tribunal. There have been many cases in that Court brought by the Attorney-General, on the presumption that such power exists. No question of authority was made. A trial court, under such circumstances, may well follow the practice until a precedent is formed.

J. Temple, Superior Judge.

June 12, 1882.

The Decree.

In the Superior Court of Sacramento county, State of California. The People of the State of California, plaintiff, vs. The Gold Run Ditch and Mining Company, defendant.

This cause having been duly called for trial upon the complaint, and answer, and both parties appearing and waiving a jury trial, the said cause was duly tried before court without a jury, and the court having heard the evidence and the argument of counsel, has duly signed findings of fact and conclusion of law therefrom, which said findings are now duly filed in this court.

Now, therefore, by reason of the premises and of the law, it is considered by the court, and it is ordered, adjudged and decreed:

That said defendant, and all the officers, superintendents, foremen, agents and employees thereof, be perpetually enjoined and restrained from discharging or dumping into the North Fork of the American river, or into any stream tributary thereto, and especially into Canyon creek, any bowlders, cobblestones, gravel or sand from the mines; also from causing any such material to flow or to be washed into said river from its said mines or tracts of mineral land.

Subject, nevertheless, to this, that said defendants may at any time, as it shall be advised, apply to this court to have this decree and restraining order modified or vacated and set aside. And whenever, upon such showing, it shall appear that efficient means have been provided to impound, detain and hold back such tailings at any point on said American river above Alder creek, and that such means are sufficient to detain all bowlders, cobblestones, gravel and the heavier sand, then said defendant shall be entitled to have said decree vacated and set aside. It is further adjudged and decreed that plaintiff recover costs herein, taxed at ——.

J. Temple,
Superior Judge, presiding.

June 12, 1882.

Oakland Manufactures.

We see by the Oakland *Times* that nearly all the shares of stock in the Judson Nail factory, offered to the citizens of Oakland, have been subscribed, and the company has decided to locate at the Emory tract, between the railroad and the bay. It was well known from the start that the enterprise would be a paying investment, and no difficulty was experienced in disposing of the stock. Great care was taken to place the shares in the hands of enterprising business men, and the result is that many of our best citizens are stockholders. Among those who have subscribed are Egbert Judson, C. S. Chamberlain, T. P. McFeely, J. Benedict, John Finn, Theodore Green, H. D. Bacon, E. B. Dean & Co., V. D. Moody, F. Delger, A. J. Snyder and J. B. Wyman. The capital stock is $500,000. It is proposed to manufacture horse-shoe nails, tacks, brads, finishing nails, Victor mowing machines, pulleys, hangers, files, etc. The company has such facilities and advantages that it can manufacture the peculiar stock at a much more reduced rate to the purchaser than now. The strongest iron, the Clipper Gap pig iron, of which Mr. Judson is the largest owner, will be used. The enterprise will give employment to 200 persons, and a large number of boys will have an opportunity to learn useful trades. No Chinese will be employed. Next Monday ground will be broken on the site selected, consisting of three acres of land, and the erection of six buildings will be begun immediately. Two buildings will be 100x40 ft. each; the second building, 175x100 ft.; the foundry building, 100x40 ft.; wood shop, 140x50 ft.; warehouse, 160x40 ft., one story in hight.

The factory, being located upon the railroad, and not far from the bay, will have unusual facilities. Mr. Chamberlain, the manager, was in Oakland yesterday, and was jubilant over the splendid prospects. Only a few more shares are to be sold.

Value of the Rural.

The following extract from a letter lately received from one of the most energetic agriculturists of the San Joaquin valley, may serve as a timely hint to others:

I enclose subscription for the Rural in advance for another year. I am amused at the tone of your circular notifying me of the expiration of my subscription and soliciting the renewal of it. It seems like vehemently urging a very hungry man to eat a good dinner. Why, my old friends, if the Rural Press were only half its size, half its quality and double its price, I would not be without it. I have a complete file of it from the number which you issued before No. 1, Vol. 1. I don't see how any farmer, intelligent enough to be uneasy without having the run of the current news of the day can do without it. If I were to emigrate to a Michigan farm, the first thing I should do would be to subscribe for the most prominent Michigan agricultural journal. I notice here that as people get to be more prosperous they take more agricultural papers. This is in accordance with what scientists tell us of man's using clothing for ornament before he used it for comfort.

Concord.—A new paper of much merit and promise is the Concord *Sun*, in Contra Costa county. The *Sun* does well to make a strong point on local news and will do much to build up the town and the surrounding country.

A company of trappers and hunters came into Red Bluff, lately, with a large lot of valuable furs, composed of 32 fishers, some fox and other skins. They were caught in the mountains and streams between Trinity and Humboldt counties.

Academy of Sciences.

The regular semi-monthly meeting of the California Academy of Sciences was held Monday evening last, Vice-President J. P. Moore in the chair. A. H. Breckenfeldt and Frank P. Deering were proposed as resident members. Among donations to the museum were the following: From Dr. Slocum, a stone whirl-spindle and a human skull from an Indian grave near Corinne; from B. B. Redding, a stone pestle from a mound near Salt Lake; from H. H. Bigelow, a stone incense cup with a rattlesnake carved in bas-relief around it, dug up at Casa Grande, Arizona; from B. C. Trueman, a California flying fish from Monterey; from Dr. H. Herman Behr, three red snow plants called *Sarcodes sanguinia*, from the Sierra Nevada. Vice-President Moore read a paper by Dr. Arthur Krause, Ph. D., member of the Bremen Geographical Society, suggested by his recent scientific explorations in Alaska, in the southern district of which he spent the past winter, with his brother, among the Indians, collecting information. He said southern Alaska resembled the south-west coast of Norway in its minerals and fisheries, where thousands of pleasure seekers resort annually to enjoy the natural beauty of the scenery. He pronounced Alaska far more valuable than Norway in this and in most respects. He predicted the gradual extinction of the 10,000 or so Indians now in the Territory, especially should the newly discovered gold mines prove as valuable as now anticipated. Some tribes of the coast Indians differ entirely in their language and features from their neighbors. The Chilcat and Chilcoot Indians have monopolized trade with the interior, and are very anxious to keep white traders and other tribes from encroaching on their direct trade between the coast and the Nomadic Indians at the headwaters of the Yukon river. These they reach in three days by the eastern route across the country, by river branches and lakes, with short land portages. The western route takes seven days, and passes are easy. Both routes unite near the Hudson Bay company's abandoned Fort Selkirk, which was destroyed by an expedition of Chilcat Indians. The Chilcats travel by the western and the Chilcoots by the eastern route, and this division is observed under penalty of war. They never use sleds or dogs, but pack their own burdens, using snow-shoes, and have to cross one glacier. Tobacco and blankets are largely dealt in, and they communicate with trading stations from 600 to 1,800 miles up the Yukon.

Mr. Moore described parasitical plants, especially the *Arcuthobium*, a mistletoe that grows on the digger-pine and all junipers, and spreads its glutinous seeds by explosions, through which they are projected and stuck over birds, who thus distribute them. The red snow-plant was first discovered in Siberia 40 years ago, and has only been found on this continent among the Sierra Nevadas.

Dr. C. C. Parry, of the U. S. Bureau of Forestry, described his recent trip through Lower California, where he found new specimens of the flowering ash, evergreen oak, two species of horse-chestnuts, a new and very delicate fine-foliage rose, new ferns, only found in Florida and the Hawaiian islands, and a cactus, valuable for manufacturing purposes, that secretes a hard gum, which, mixed with alcohol, makes a fine varnish, and is useful for painting pottery.

Morse's New Gallery.

Mr. G. D. Morse, whose photograph gallery has been established in this city over 11 years, has just removed to the most complete, artistic and elegant rooms on the coast, at Phelan's block, Market St. The ascent to the gallery is by hydraulic elevators from Market and O'Farrell streets. On the fifth floor the exhibition gallery is reached, and here can be seen the magnificent work for which this establishment is so widely known. There are five parlors, all most elegantly and sumptuously fitted. The most elaborate of these is kept for ladies in evening costume, bridal parties, etc. The photographic rooms are furnished with all the latest appliances, mechanical inventions and other necessaries of the photographic art—the light is perfect and the surroundings so beautiful that a visitor, free from all disturbing elements and with mind harmonized, looks his best, and is sure to make a good picture. Mr. Jenks, whose works in oil painting are so noted, Mr. Koch, who has a great reputation for ivory-type and water colors, Mr. Hasselman, a crayon and porcelain painter, and Miss Buckman, a fine colorer of "cabinets," locket pictures, etc., are among the artists employed there. With such an establishment, success and overwhelming patronage must result, and we strongly recommend all our country friends when they visit San Francisco to pay a visit to this, one of the most magnificent galleries in America.

* * *

A special from Neillsville, Wis., states that a forest fire is now destroying the best pines in Clark county, and that the indications are the destruction will be greater than occurred during the great Deshilgo fire, which happened the same year Chicago was burned. The fire is rushing northward with fearful rapidity, and will reach the Eau Claire river inside of two days.

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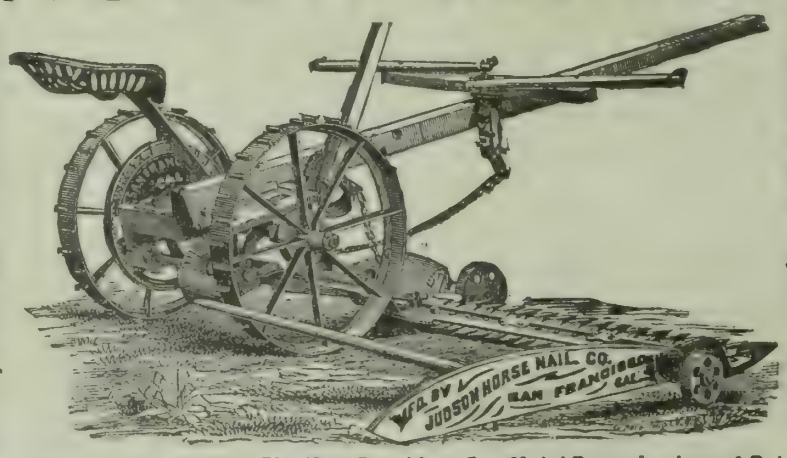

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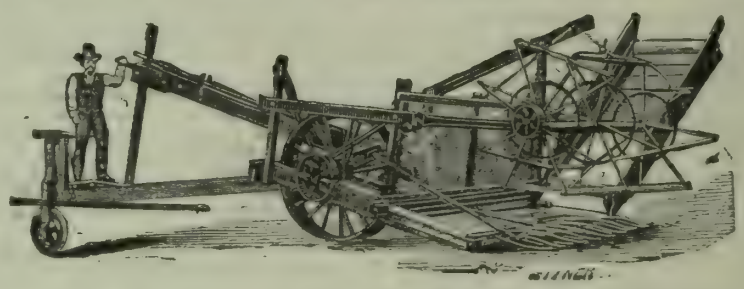

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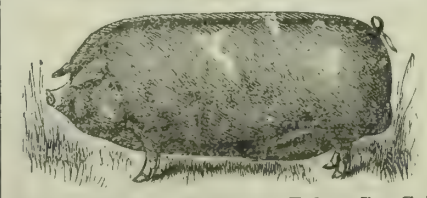

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TERM DEPOSITS are received and interest allowed as follows: 4% per annum if left for 6 months; 5% per annum if left for 12 months.

BILLS OF EXCHANGE of the Atlantic States bought and sold.

ALBERT MONTPELLIER
Cashier and Manager.

San Francisco, Jan. 15, 1882.

Lands for Sale and to Let.

FARMING LAND

For sale in large or small tracts, on easy terms, in the best parts of the State

McAFEE BROTHERS,
328 Montgomery Street, S. F.

Fruit and Homestead Lands

FOR SALE.

Having purchased the tract of land adjoining the town of Vacaville, known as the Mason-Wilson tract, containing 492 acres, and subdivided the same, I am prepared to sell from five acres upwards, as desired

This land being located in Vaca Valley, known for its early and superior fruits, offers valuable inducements to those desiring to engage in the business, or for pleasant country homes.

For climate, healthfulness and school facilities it is unsurpassed in the State, and easy of access by a branch railroad from Elmira.

I will sell upon favorable terms. For particulars Apply to W. B. PARKER.
Vacaville, Solano, Co., Cal

Good Crops Every Season Without Irrigation.

Free by mail, specimen number of *"The California Real Estate Exchange and Mart,"* full of reliable information on climate, productions, etc., of

SANTA CRUZ COUNTY.

Address *"Exchange & Mart,"* Santa Cruz, Cal.

Stock Range.

Parties wishing to purchase good stock raising lands, unaffected by severe drouths, will do well to address the undersigned. The lands can be purchased cheap, in lots from 100 to 2,000 acres. It is partly low table and rolling land, partly clear and level. Good for vine and fruit raising. Will raise vegetables and all kinds of grain. Crops certain every year. Near town and a $10,000 public school house. Price, $3 to $5 per acre. Good local market for fruit, vegetables, grain, poultry and dairy produce. Address the proprietor,

EDWARD FRISBIE.
Anderson, Shasta Co., Cal.

Mission Rock Dock and Grain Warehouse,

San Francisco, Cal.

65,000 tons capacity. Storage at lowest rate

CHAS. H. SINCLAIR, Supt.

CALIFORNIA DRY DOCK CO. - - Proprietors.

Office—318 California Street, Room 3.

THRESHER FOR SALE

At a Bargain.

One 36-inch Buffalo Pitts Separator, with mounted horse-power, Hutchings' Feeder, Derrick, Forks, etc., all complete, and in first-class condition. Has been used only part of one season. Price only $800. Can be seen at the Easterby Rancho, Fresno, Cal. For further particulars, apply to D. D. HUDSON,
Fresno, Cal.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co's SCIENTIFIC PRESS PATENT AGENCY, 252 Market St., S. F.

FOR THE WEEK ENDING MAY 30, 1882.

258,562—GUIDERAIL FOR ROPE RAILWAY CLUTCHES—Chas. S. Drake, S. F.

258,563—ATTACHMENT FOR WIRE ROPE RAILWAYS—Chas. S. Drake, S. F.

258,564—APPARATUS FOR COVERING SLOTS IN CABLE RAILWAYS—Chas. S. Drake, S. F.

258,645—CABLE POWER WHEEL—Egbert D. Haven, Albany, Oregon.

258,660—REVERSIBLE SHIRT—David Lubin, Sacramento, Cal.

258,661—ENVELOPE—David Lubin, Sacramento, Cal.

258,681—FIRE BRICK COMPOUND—Edward A. Martin, Virginia City, Nev.

258,679—REIN HOLDER—R. E. Shannon, S. F.

258,682—ICE MACHINE—Geo. W. Stevens, S. F.

258,700—GRATE FOR STOVES AND RANGES—Thomas Kearns, S. F.

FOR THE WEEK ENDING JUNE 6, 1882.

258,871—ELECTRO-MAGNETIC ACTION FOR MUSICAL INSTRUMENTS—Cyrus N. Andrews, S. F., Cal.

258,930—ORE CONCENTRATOR—A. Blatchly & G. Kustel, S. F.

258,881—VALVE FOR COLLAPSIBLE FLOATS—Albert Bosshard, S. F.

259,145—DEVICE FOR CATCHING FISH—Thos. Heaton, Vancouver, W. T.

259,150—BLEACHING MAGNESIUM SULPHATE FROM CRUDE MINERAL—Fred'k. Hoblweg, S. F.

259,197—WOOD PRESERVING COMPOUND—John C. Marshall, Oakland, Cal.

259,182—WATCH OILER—W. W. Martin, Salem, Oregon.

259,189—COMBINED BEDSTEAD, TABLE, ETC.—Mary A. McMaster, Antioch, Cal.

259,201—COMBINED HEADER AND THRASHER—Wm. H. Parson, Salem, Oregon.

259,246—LUGGER—James A. Robb, San Jose, Cal.

259,255—ROTARY PULVERIZER—James O. Stewart, Alameda, Cal.

259,258—PNEUMATIC COUNTER BALANCE FOR PUMP RODS OF DEEP WELL PUMPS—Wm. F. Toothaker, S. F.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co. in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast Inventors transacted with perfect security and in the shortest possible time.

CAUSES OF MAGNETIC VARIATION.—F. Folie discusses the hypothesis, which is accepted by many geologists, that the earth is composed of a solid crust, together with a mass, more or less fluid, beneath the crust. Hopkins had previously calculated the precession and nutation which would result from a fluid nucleus, but his conclusions were not satisfactory, and Folie gives new reasons for rejecting them. He thinks that the crust would partake, to some extent, of the disturbances of the interior, and that the only way in which the exact latitude of a place could be found would be by taking observations when there is no disturbance by nutation; or by distributing the observations equally over the whole period of nutation. He further supposes that if the solid shell of the globe oscillates about the fluid nucleus, the friction which results from the pressure of the nucleus upon its envelope during this movement should constantly engender a great quantity of electricity, which may be one of the principal causes of terrestrial magnetism. The gradual cooling of the interior ought according to this hypothesis, to be shown by a diminution of the constant of nutation, and a like diminution of magnetic intensity. —*Bull. Royal Society Belgium.*

THE Princess of Wales will not permit her children to be decorated with all sorts of Orders usually bestowed in great numbers on juvenile royalty, because she thinks it better for them to grow up with a more modest estimation of themselves than would be possible if they were continually flattered and made much of.

GENERAL HOWARD believes the existing vacancies at West Point are the fault of the people; that the people should understand that a good academic education is required for an applicant to pass a West Point examination, and not an ordinary education.

Signal Service Meteorological Report.

SAN FRANCISCO.—Week ending June 13, 1882.

	June 7	June 8	June 9	June 10	June 11	June 12	June 13
HIGHEST AND LOWEST BAROMETER.							
	30.028	30.027	29.918	29.915	29.929	30.011	29.952
	29.923	29.915	29.846	29.824	29.815	29.897	29.827
MAXIMUM AND MINIMUM THERMOMETER.							
	64.5	60	63	63	64	62	62
	55	53.5	52	53.5	54	52.5	52
MEAN DAILY HUMIDITY.							
	72.0	77.0	78.3	78.3	79.0	74.3	76.7
PREVAILING WIND.							
	W	W	W	SW	SW	W	SW
WIND—MILES TRAVELED.							
	338	496	199	221	319	351	291
STATE OF WEATHER.							
	Fair	Clear	Fair	Fair	Foggy	Fair	Clear

RAINFALL IN TWENTY-FOUR HOURS.

Total rain during the season, from July 1, 1881, 16.12 inches.

Pacific Coast Weather for the Week.

[Furnished for publication in the PRESS by NELSON GEROM, Sergt. Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending 11:58 A.M. Wednesday, June 14th, at noon, for the stations named:

Date.	Olympia.	Portland.	Roseburg	Red Bluff	San Francisco	Visalia.	Los Angeles	San Diego.
Thursday	.01	.01	.00	.00	.00	.00	.00	.00
Friday	.00	.00	.00	.00	.00	.00	.00	.00
Saturday	.00	.00	.00	.00	.00	.00	.00	.01
Sunday	.00	.02	.00	.00	.00	.00	.00	.05
Monday	.00	.00	.00	.00	.00	.00	.00	.00
Tuesday	.00	.00	.00	.00	.00	.00	.00	.00
Wed'nesday	.00	.00	.00	.00	.00	.00	.00	.01
Totals	.01	.03	.00	.00	.00	.00	.00	.07

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, June 14, 1882.

There has been rather more trade this week, although some articles show the former dullness. The latest from abroad is as follows:

LIVERPOOL, June 14.—Wheat—California spot lots are firmer at 9s 8d to 9s 11d. Cargo lots are 46s 6d for just shipped, 49s for nearly due and 43s 6d for off coast.

The Foreign Review.

LONDON, June 12—The *Mark Lane Express*, in its review of the British Grain trade for the past week, says: The weather has been cool, and the rainfall benefited all grain except Wheat. Trade is almost at a standstill, and is getting weaker. The same is true of foreign trade, in which most descriptions are unsalable except at a decline. Off-coast trade has shown a further depression. Thirty-three cargoes arrived, of which 15 have been sold. The quantity of Breadstuffs afloat shows an increase of 118,000 quarters, as compared with 1881. Foreign Flour has about maintained prices. Barley is dull, but prices have not changed. Oats are weaker, in consequence of continued arrivals. Sales of English Wheat during the week were 24,069 quarters, at 47s 9d ₱ quarter, against 21,081 quarters, at 44s 8d ₱ quarter, for the corresponding week of last year.

Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive, according to the latest advices:

In port.	1882.	1881
Engaged, tons	30,600	43,600
Disengaged, tons	32,400	3,300
To arrive, tons	277,700	307,900
Total	340,700	355,000
Decrease for 1882		14 300

The amount of tonnage under engagement yesterday to load Wheat was 24 400 tons, against 38,100 tons for the corresponding date last year, showing a decrease of 13,700 tons. There were 12 vessels under engagement yesterday morning at this port to load Wheat. The engaged and disengaged tonnage in port has a Wheat-carrying capacity for 99,400 short tons, against a capacity for 79 300 tons on the corresponding date last year. The following vessels have been chartered for Wheat: British ship, iron, 1,010 tons, Liverpool direct, 50s, Cork, U. K., 52s 6d; ship *Eliza McNeil*, 1,582 tons,, Cork, U. K., Havre, Antwerp or St. Nazaire direct, 46s 3d.

Eastern Grain and Provision Markets.

CHICAGO, June 13.—Wheat—Spring, dull, higher; $1.32 cash; $1.34 July; regular, quiet, higher; $1 17½ July; $1.08½ August. Corn—Strong, higher; 70½c cash; 71½c bid July. Pork—Stronger; $20.92½ cash; $21 10 August. Lard—Stronger; $11 62½ cash; $11 80 August.

NEW YORK, June 10.—The Breadstuff market is unsettled, and the tendency is toward a larger range of prices. Predictions as to Wheat yield have not varied essentially. Taken on the whole, the crop prospects are regarded as good. Provisions are in fair demand and steady. Rio Coffee, very quiet, and prices irregular. Refined Sugars fair, with demand steady. Teas are held steadily, but buyers show no anxiety. Sales—20,000 packages of new Japan, to arrive, at about last year's prices.

Eastern Wool Markets.

BOSTON, June 10.—Fair business is doing in Wool, but the sales are small compared with the corresponding week last year, when some 3,000,000 lbs. were sold, against 1,700,000 lbs. this year. Prices remain without change, but there is a quieter tone here and in the Eastern markets, and extreme prices are more difficult to obtain at any point. Ohio and Pennsylvania X and XX at 40c; good average lots of X and XX selling at 42c to 43c, and choice at 44c. In Michigan and Wisconsin X sales have been at 38@40c, choice lots at 41c, and considerable sales at 28@30c. Washed fleeces have been in fair demand, at 2[illegible] for fine and medium grades, and choice selections at 34@35c. Combing and delaine selections are quiet, and prices nominally, 43@48c for fine delaine and No. 1 combing. Coarse and medium combing Wools are dull and prices nominal. In California Spring there were sales of 200 000 lbs at 31½c and small lots of choice at 33@35c. Pulled Wools have been selling at 45@50c for choice Eastern and Maine supers, and 30@42c for common and good supers. Extra pulled has been in fair demand at 40@47c. In foreign Wools there were sales of Australian at 41@44c, and Montevideo and Cape at previous prices.

NEW YORK, June 13th.—Wool rather dull and prices weak. California Wool is arriving in very good condition, but the high price paid in the primary market serve to check a free movement here. Sales include 180,000 pounds and 50 bales of Spring at 25@28c; 20,770 bales of Fall at 16c; 35,000 pounds of secured Fall, 42@65c. At Boston the market is more active and the sales of California have been large, including 229,000 pounds of Spring at 27@35c, and 96,000 pounds of Fall at 13c.

London Wool Market.

LONDON, June 13th.—At the Wool sales to-day 11,000 bales were sold, including New Zealand and Victoria. There was a brisk demand and rates were firm.

LONDON, June 12th.—Ninety-eight thousand bales of Wool were sold to-day, comprising Port Phillip and Sydney. Rates, firm.

New York Dried Fruit Markets.

NEW YORK, June 13th—Foreign fruits, quiet and steady, except prunes which are now held at 7½@7¾c. Currants are also firmer, being quoted at 5½c.

BAGS—On the Produce Exchange call, $9 15 was asked for Calcutta and $8 75 for Dundee. The same figure was asked for Dundee on the Grain Exchange, June or July.

BARLEY—New Barley is arriving, the first coming from Solano county, and selling at $1.65 ₱ ctl—light feed Barley. Spot lots of old are scarcely found and at advanced rates. Two lots of 10 tons each, No. 1, sold this morning at $1.80 ₱ ctl. There were sales of two lots of 50 tons each new, June delivery, at $1 55 ₱ ctl. Sales of No. 2 were wholly on future account, embracing 100 tons, August, $1.20; 200 do, September, $1.18½; 100 do, November, $1.19½; 500 do, December, $1.21 ₱ ctl. There was also a speculative purchase of 100 tons No. 2, seller 1882, at $1.16½ ₱ ctl. Old Brewing is in fair demand, and rated at $2 for deliveries within the next 90 days. No transactions of consequence in Chevalier, the only sale reported being a small lot of 500 bags fair quality at $1.62½ ₱ ctl.

BEANS—Pea and Small White Beans are 25c higher ₱ ctl. Other sorts are unchanged.

CORN—Corn is selling about as last week; asking rates for choice California Yellow are about $1.85.

DAIRY PRODUCE—Butter is selling steadily and rates are unchanged. Cheese is about the same, choice California bringing 13½c.

EGGS—Eggs are 1c better per dozen, and choice lots sell well.

FEED—Hay is unchanged; Bran is a shade lower. There was only one spot sale to-day, consisting of 10 tons at $14.50. A sale for October delivery of 50 tons was recorded at $14. Contracts were made on call to deliver, seller 1882, 100 tons at $13.20, and 400 do, at $13.15 per ton.

FRESH MEAT—Mutton has cheapened again, and Pork has advanced another fraction. Beef is quiet and unchanged.

FRUIT—Peaches are coming in more freely. The first came from John Chelander, of Napa, and sold at 50@75c per basket—not being in good condition. Cherries are very abundant and canners are taking large quantities at low rates. Mulberries are offered at 25c ₱ lb.

HOPS—There are few in, and rates are nominal.

OATS—Oats are slow. On call sales were 100 tons No. 1, September, $1.47, and 100, seller 1882, $1.42½. Bids and offers on the morning call were: Extra choice September; $1 55 bid; No. 1, July, $1.55 bid; old, $1.65 bid; August, $1.47½ bid; October, $1 45 bid; No. 2, September, $1.40½ bid, $1 43½ asked; October, $1.35 bid, $1 41 asked; seller 1882, $1.40 asked.

ONIONS—Onions are still a shade lower, 45@50c covers the sales.

POTATOES—Most splendid Potatoes are now coming, and selling low, say at $1@$1.25 per ctl.

PROVISIONS—The advance in Pork occasions a rise in products—Hams being about 1c higher.

POULTRY AND GAME—There is no material change.

VEGETABLES—Our list shows a general cheapening, owing to increased supplies of new vegetables. Eggplant and Green Corn are now in.

WHEAT—A very fair shipping trade is in progress at a range of $1.65@$1.70. A small sale was reported to-day at $1.71½—fancy Milling. On call $1.70 was the asking rate and sellers would make no abatement. For Post Costa deliveries of No. 1 Sonora, in August, $1.61 was asked against $1.61½ ₱ ctl bid. At the Grain Exchange there were sales of 300 tons No. 2, July, $1.64; 200 do, September, $1.63½; 300 do, $1.63¾; 200 do, October, $1 63½; 100 do, $1 63¾; 300 do, $1.64 ₱ ctl.

WOOL—Dealers report a reduction of 1c ₱ lb. all around, and describe the market as slow and dull. Wool growers in Mendocino are preparing for Eastern shipments on their own account.

Domestic Produce.

WHOLESALE.

WEDNESDAY M., June 14, 1882.

BEANS & PEAS.		Pecans	13 @ 15
Bayo, ctl	2 75 @ 3 25	Peanuts	6½@ 7
Butter	3 75 @ 4 25	Filberts	14 @ 15
Castor	3 50 @ 4 00	**ONIONS.**	
Pea	4 25 @ 4 50	Red	— @ —
Red	2 50 @ 3 00	Silverskin	40 @ 55
Pink	2 50 @ 3 00	Oregon	— @ —
Large White	3 50 @ 3 75	**POTATOES.**	
Small White	4 25 @ 4 50	New, ctl	1 00 @ 1 25
Lima	4 00 @ 4 50	Early Rose	@
Field Peas, blk eye	1 75 @ 1 75	Petaluma, ctl	@
do, green	2 00 @ 2 25	Tomales	— @ —
BROOM CORN.		Humboldt	@
Southern	3 @ 3½	" Kidney	@
Northern	4 @ 6	" Peachblow	@
CHICCORY.		Jersey Blue	— @ —
California	4 @ 4½	Chiffey Cove	@ —
German	6½@ 7	River, red	— @
DAIRY PRODUCE, ETC.		Chile	@
BUTTER.		do, Oregon	— @
Cal. Fresh Roll, lb	27 @ 29	Oregon Peerless	— @ —
do Fancy Brands	30 @ 31	Salt Lake	— @ —
Pickle Roll	— @ —	Sweet	@
Firkin, new	28 @ 30	**POULTRY & GAME.**	
Eastern	18 @ 20	Hens, doz	6 00 @ 7 50
New York	— @ —	Roosters	5 00 @ 10 00
CHEESE.		Broilers	3 50 @ 6 50
Cheese, Cal., lb	12 @ 13½	Ducks, tame, doz	5 00 @ 6 00
EGGS.		Geese, pair	1 00 @ 1 25
Cal. Fresh, doz	24 @ 26	do, young	1 25 @ 1 50
Ducks	— @ —	Wild Gray, doz	@3 00
Oregon	— @ —	White do	50 @1 00
Eastern, by expr'ss	— @ —	Turkeys	14 @ 18
Pickled here	— @ —	do, Dressed	— @ —
Utah	— @ —	Turkey Feathers,	
FEED.		tail and wing, lb	10 @ 20
Bran, ton	13 50 @14 50	Snipe, Eng	1 75 @2 00
Corn Meal	@38 00	do, Common	50 @ 75
Hay	10 00 @15 00	Quail, doz	75 @ 80
Middlings	25 00 @26 00	Rabbits	1 25 @1 50
Oil Cake Meal	@27 50	Hare	2 00 @2 25
Straw, bale	62½@ 70	Venison	5 @ 7
FLOUR.		**PROVISIONS.**	
Extra, City Mills	5 25 @5 50	Cal. Bacon, extra	
do, Country Mills	4 75 @5 00	clear, lb	14½@ 15
do, Oregon	4 75 @5 12½	Medium	14½@ 15
do, Walla Walla	4 50 @5 00	Light	15½@ 16
Superfine	3 50 @4 25	Lard	13 @ 16
FRESH MEAT.		Cal. Smoked Beef	11½@ 12½
Beef, 1st qual'y, lb	7½@ 8	Shoulders	9½@ 10½
Second	6 @ 7	Hams, Cal	14 @ 15
Third	5 @ 5½	do, Eastern	16 @ 17
Mutton	3½@ 4½	**SEEDS.**	
Spring Lamb	6 @ 8	Alfalfa	14 @ 16
Pork, undressed	6½@ 7½	do Chile	— @ —
Dressed	9½@ 10½	Canary	3½@ 4
Veal	7½@ 8	Clover, Red	14 @ 15
Milk Calves	7½@ 8	White	45 @ 50
do, choice	— @ 10	Cotton	— @ 20
GRAIN, ETC.		Flaxseed	2½@ 3
Barley, feed, ctl	1 70 @1 74	Hemp	— @ 5
do, Brewing	1 80 @1 90	Italian Rye Grass	25 @ —
Chevalier	— @1 70	Perennial	25 @ —
Buckwheat	1 50 @1 75	Millet, German	10 @ 12
Corn, White	— @ —	do, Common	7 @ 10
Yellow	1 75 @1 80	Mustard, White	1½@ 2
Small Round	— @1 75	Brown	2½@ 3
Oats	1 85 @1 92½	Rape	2½@ 2¾
Milling	1 95 @2 00	Ky Blue Grass	20 @ 25
Rye	2 30 @2 35	2d quality	16 @ 18
Wheat, No. 1	1 67½@1 70	Sweet V Grass	— @ 75
do, No. 2	1 62½@1 65	Orchard	20 @ 22½
do, No. 3	1 45 @1 50	Red Top	— @ 15
Choice Milling	— @1 70	Hungarian	8 @ 10
HIDES.		Lawn	30 @ 40
Hides, dry	19 @ 19½	Mesquit	10 @ 12½
Wet salted	9½@ 11	Timothy	9 @ 10
HONEY, ETC.		**TALLOW.**	
Beeswax, lb	23 @ 25	Crude, lb	7 @ 7½
Honey in comb	— @ 15	Refined	10½@ 11
Extracted, light	8 @ 9	**WOOL, ETC.**	
do, dark	7 @ 8	SPRING—1882.	
HOPS.		San Joaquin, free	20 @ 22
Oregon	20 @ 21	do, fair	18 @ 19
California, new	22 @ 25	do, dusty	15 @ 17
Wash. Ter	19 @ 20	Southern Coast	16 @ 22
Old Hops	— @ —	Stanislaus & Tuolumne	23 @ 25
NUTS—Jobbing.		Sonoma & Mendocino	25 @ 27
Walnuts, Cal	10 @ 11	Nor Sacr'mento	24 @ 26
do, Chile	7½@ 8	Oregon, eastern	22@ 26
Almonds, hd shell lb	8 @ 10		
Soft shell	15 @ 17		
Brazil	10 @ 11		

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., June 14, 1882.

Eng Standrd Wheat	8½@ 9	45 inch	9½@ 9½
Cal Manufacture	—	40 inch	8½@ 8½
Hand Sewed, 22x36	8¾@ 9	Wool Sks Hand Swd	
20x36	8½@ 8¾	3½ lb	—@47
23x40	12 @13	4 lb do	52½@55
24x40	12½@13½	Machine Sewed	—@49½
Machine Swd 22x36	8½@ 9	Standard Gunnies	18½@19
Flour Sks, halves	9½@10½	Bean Bags	6½@ 7
Quarters	6 @ 6½	Twine, Detrick's A	32½@35
Eighths	4½@ 4½	" " AA	35 @37
Hessian, 60 inch	—@12		

General Merchandise.

WHOLESALE.

WEDNESDAY M., June 14, 1882.

CANDLES.		Cement, Rosendale	1 75 @ 2 00
Crystal Wax	16 @18	Portland	3 75 @ 4 00
Paraffine	20 @—	**NAILS.**	
Patent Sperm	25 —28	Asartd sizes, keg	3 75 @ 4 00
CANNED GOODS.		**OILS.**	
Asartd Pie Fruits.		Pacific Glue Co's	
2½ lb cans	2 25	Neatsfoot, No. 1	1 00 @1 00
Table do	3 50 @ —	Castor, No. 1	— @1 05
Jams and Jellies	3 75 @ —	do, No. 2	— @ 95
Pickles, hf gal	3 25 @ —	Baker's A A	— @1 30
Sardines, qr box	1 67 @ —	Olive, Plagnioli	5 25 @5 75
Hf Boxes	2 50@1 90	Possel	4 75 @5 25
Merry, Faull & Co's		Palm, lb	9 @ —
Preserved Beef		Linseed, Raw, bbl	— @ 60
2lb, doz	3 25 @3 —	Boiled	— @ 65
do 4 lb doz	6 50 @6 —	Cocoanut	60 @ —
Preserved Mutton		China nut, ca	68 @ 69
2 lb. doz	3 25 @3 50	Sperm	1 40 @ —
Beef Tongue	5 75 @6 00	Coast Whales	35 @ —
Preserved Ham,		Polar	@ —
2 lb. doz	5 50 @5 60	Lard	— @1 00
Deviled Ham, ½ lb.		Petroleum (110°)	18 @ 22
doz	3 00 @3 50	Petroleum (170°)	28 @ 35
do Ham ½ lb doz	2 50 @ —	**PAINTS.**	
Boneless Pigs Feet		Pure White Lead	7½@ 8
3lbs	3 50 @3 75	Whiting	1½@ —
2 lbs	2 75 @ —	Putty	4 @ 5
Spiced Fillets 2 lbs	3 50 @ —	Chalk	1½@ —
Head Cheese 3 lbs	3 50 @ —	Paris White	2½@
COAL Jobbing.		Ochre	3½@
Australian, ton	— @ 8 50	Venetian Red	3½@
Coos Bay	— @ 6 50	Averil mixd Paint	
Bellingham Bay	— @	gal	
Seattle	— @ 6 50	White & Tints	2 00 @2 00
Cumberland	— @13 00	Green, Blue and	
Mt Diablo	— @ —	Ch Yellow	3 00 @3 50
Lehigh	— @ —	Light Red	3 00 @3 50
Liverpool	— @ —	Metallic Roof	1 30 @1 60
West Hartley	— @ 8 50	**RICE.**	
Scotch	— @ 8 50	China Mixed, lb	4½@ 5
Scranton	— @ —	Hawaiian	4½@ 5
Vancouver Id	@ —	**SALT.**	
Wellington	— @ 9 00	Cal. Bay, ton	14 00 @22 00
Charcoal, sack	— @ —	Common	6 50 @14 00
Coke, bush	— @ —	Carmen Id	14 00 @22 00
COFFEE.		Liverpool fine	14 00 @20 00
Sandwich Id lb.	— @ —	**SOAP.**	
Costa Rica	12 @ 14	Castile, lb	9 @ 10
Guatemala	12 @ 14	Common brands	4½@ 6
Java	18 @ 20	Fancy Brands	7 @ 8
Manilla	15 @ —	**SPICES.**	
Ground, in bd	@ 22½	Cloves, lb	37½@ 40
FISH.		Cassia	19 @ 20
Sac'to Dry Cod	— @ 5	Nutmegs	85 @ 90
do in cases	— @ — 5½	Pepper Grain	15 @ 16
Eastern Cod	7 @ — 7½	Pimento	16 @ 17
Salmon, bbls	7 00 @ 7 50	Mustard, Cal ½ lb	
Hf bbls	3 50 @ 4 00	Glass	— @1 25
1 lb cans	1 12½@ 1 22½	**SUGAR, ETC.**	
Pkld Cod, bbls	@ —	Cal Cube lb	@ 12½
Hf bbls	— @ —	Powdered	— @ 13½
Mackerel, No. 1		Fine Crushed	— @ 12½
Hf bbls	9 50 @ 10 00	Granulated	— @ 11½
In Kits	1 75 @ 1 85	Golden C	— @ 11
Ex Mess	3 50 @ 4 00	Cal Syrup, kgs	65 @ —
Pickled Herring,		Hawaiian Mol'sses	25 @ 30
box	3 00 @ 3 50	**TEA.**	
Boston Smoked		Young Hyson,	
Herring	65 @ 70	Moyune, etc	40 @ 65
LIME, etc.		Country pkd Gunpowder & Imperial	35 @ 75
Plaster, Golden		Hyson	30 @ 35½
Gate Mills	3 00 @ 3 25	Pooo-Chow O	27½@ 32
Land Plaster,		Japan, medium	35 @ 37½
ton	10 00 @ 12 50		
Lime, Suta Cruz			
bbl	1 25 @ 1 50		

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., June 14, 1882.

FRUIT MARKET.		do whole	— 7 @— 8
Apples, box	50 @ 75	Plums	— 6 @— 7
Apricots, box	90 @ 1 00	Pitted	— 11 @— 12½
do Royal	1.00 @ 1.25	Prunes	— 9 @— 10
Bananas, bnch	2 50 @ 4 00	Raisins, Cal. bx	— @ 2 50
Cherries, box	— 40 @— 90	do, Halves	— @ 2 75
Cherry Plums	1 25 @ 1 50	do, Quarters	— @ 3 00
Cocoanuts, 100	6 00 @ 7 00	Eighths	— @ 3 25
Cranberries bbl	12 50 @14 00	Zante Currants	8 @— 10
Currants, chst	3 00 @ 4 00	**VEGETABLES.**	
Gooseberries	— @— 4	Artichokes, doz	— 10 @— 12
Limes, Mex	10 00 @12 00	Asparagus, box	25 @— 75
do, Cal, box	2 00 @ 8 00	Beets, cd	— @— 75
Lemons, Cal, bx	1 00 @ 2 00	Cabbage, 100 lbs	87½@ 1 00
Sicily, box	8 00 @10 00	Carrots, sk	— 65 @— 75
Australian	— @— —	Cauliflower, doz	— 40 @— 50
Oranges, Cal, bx	4 50 @ 5 00	Corn, green	10 @ 30
do, Tahiti M	— @25 00	Cucumbers, doz	— 25 @— 50
do, Mexican	15 00 @17 00	Eggplant, lb	@ 25
do, Loreto	— @— —	Garlic, lb	5 @— 6
Peaches, lb	10 @ 12½	do, pcd	1 @ 1½
Pears, box	— 30 @ 50	Lettuce, doz	— 10 @— —
Pineapples, doz	8 00 @ 9 00	Mushrooms, bx	— @— —
Raspberries, box	8 @ 12	Okra, dry lb	— @— 50
Strawberries, box	6 00 @12 00	Peas, green, lb	— @— 1½
DRIED FRUIT.		do, sweet	— 1½ @ 2
Apples, sliced, lb	—@— 10	Parsnips, lb	— @— 2
do, evaporated	— @— 12½	Peppers	10 @ 15
do, quartered	— 6 @— 6½	do, Chile	30 @ 40
Apricots	— 18 @— 20	Rhubarb, bx	50 @— 75
Blackberries	— 14 @— 16	Squash, Marrow	
Citron	— 28 @— 30	fat, ton	— @50 00
Dates	— 9 @— 10	String Beans	— 3½@— 4
Figs, pressed	— 4 @— 6	do, wax	— 4 @— 5
do, loose	— 3½@— 4	Summer Squash,	
Nectarines	— 14 @— 15	box	1 00 @ 1 25
Peaches	— 10 @— 10½	Tomatoes	— 7 @— 10
do pared	— 16 @— 19	do, Vacaville	— 12½@ 15
Pears, sliced	— 9 @— 6½	Turnips, ctl	— 75 @ 1 00

Retail Groceries, Etc.

WEDNESDAY M. June 14, 1882

Butter, California		Rice	8 @ 10
Choice, lb	45 @ 55	Yeast Powdr, doz	1 50 @2 00
Cheese	17 @ 25	Can Oysters, doz	2 00 @3 00
Eastern	25 @ 30	Syrup, S F & old'n	75 @1 10
Lard, Cal	— @ 18	Dried Apples, lb	10 @ 15
Eastern	20 @ 25	Ger. Prunes	12½@ 20
Flour, ex. fm, bbl	8 00 @9 00	Figs, Cal	9 @ 10
Corn Meal, lb	2½@ 3	Peaches	15 @ 25
Sugar, wh crushd	12½@ 13½	Oils, Kerosene	50 @ 60
Light Brown	8 @ 9½	Wines, Old Port	3 50 @5 00
Coffee, Green	23 @ 35	French Claret	1 00 @2 50
Tea, Fine Black	50 @1 00	Cal. doz bot	2 0 @4 50
Finest Japan	55 @1 00	Whisky, O K, gal	3 50 @5 00
Candles, Adm'te	15 @ 25	French Brandy	4 00 @8 00
Soap, Cal	7 @ 10		

Gold, Legal Tenders, Exchange, Etc.

[Corrected Weekly by SUTRO & CO.]

SAN FRANCISCO, June 14, 3 P. M.

SILVER, ½.

GOLD BARS, 890@910. SILVER BARS, 10@18 ₱ cent. discount.

EXCHANGE on New York, 5 premium; London, 49½@49¾; Paris, 5.13 francs ₱ dollar; Mexican dollars, 91@92.

NEW YORK (4 per cent), 120½

COMPOUND OXYGEN

NEW TREATMENT BY INHALATION, for Consumption, Asthma, Bronchitis, Dyspepsia, Catarrh, Headache, Debility, Rheumatism, Neuralgia, and all Chronic and Nervous Disorders. Prepared by DRS. STARKEY & PALEN, Philadelphia, Pa. Package contains all directions, and is easily sent by express, ready for USE AT HOME. H. E. MATHEWS, Forwarding Agent, 606 Montgomery street, San Francisco, Cal. Send for Free Pamphlets.

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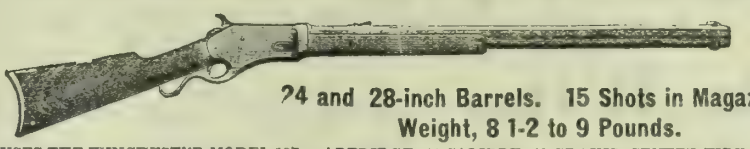

24 and 28-inch Barrels. 15 Shots in Magazine.

Weight, 8 1-2 to 9 Pounds.

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REDLANDS.

The owners of the Redlands tract having disposed of a large portion of their lands, now offer for sale one hundred and fifty acres only, at $125 per acre, this being all that will be offered the present season.

Redlands is located on the south side of Mill Creek Ditch, between Old San Bernardino and Crafton.

The lands are a clayey loam, very similar to the lands at the head of Magnolia Avenue in Riverside.

There are no fences on the land and no brush to clear off.

The tract is being put on the market as rapidly as the water can be put upon the lands, and no faster.

One thousand acres of the tract have just been surveyed and platted, about nine hundred acres of which have already been sold. The price of the remaining tracts is $125 per acre.

The third five hundred acre tract will not be put upon the market before the winter of 1882–3. In the meantime the system of irrigation will be completed by finishing the large reservoir conducting the waters of the Company to the reservoir in pipes and flumes, and laying concrete pipes through the tract to carry water from the reservoir to the highest point on each tract.

The main avenues are one-quarter mile apart, 100 feet wide, and run from northeast to southwest for convenience of irrigation. The course of the sea breeze is parallel with these avenues

The cross streets are sixty feet wide, and run at right angles with the avenues every half mile.

The tract is subdivided into ten-acre lots, with a town site composed of smaller blocks.

Its situation is the finest in the San Bernardino Valley, the view being unequalled, and the elevation near 2,000 feet above the level of the sea.

The climate is unsurpassed, the location being so far inland that fogs and northers are almost unknown.

The title to the land is United States patent, and is therefore beyond question.

The Water Right is ample and beyond dispute. It consists:—

First—Of fifty shares in the Sunny Side ditch, one of the oldest ditches in San Bernardino county. This water will be conducted from the Sunny Side ditch to the Redlands reservoir in a ditch flumed part or all of the way, so that no water will be lost by seepage. The ditch is already constructed and will be flumed before the next irrigating season. This is good for 500 acres of land.

Second—An eighty-inch stream developed in Santa Ana Canyon. This stream is being piped down to the head of the Redlands ditch, so that the entire water supply will be handled without loss. This stream is good for 500 acres more of land.

Third—Two reservoirs will be constructed. The work on these is now in progress. The largest reservoir will have a capacity sufficient to cover 500 acres of land 9 inches deep with water. There is an abundance of winter water to supply this reservoir. The second reservoir will be much smaller. The large reservoir will cover 17½ acres of land, and will be 60 feet deep in the deepest place

Fourth—The water will be conducted from the reservoirs to the highest point on each ten-acre tract by means of concrete pipes, thus saving expense and wastage in the distribution of the water. These reservoirs will irrigate another 500 acres.

These water rights, reservoirs, pipes, flumes, ditches, etc., are the property of the Redlands Water Company,—a company incorporated to furnish water to the Redlands tract of 1,500 acres, with 1,500 shares of stock. One share of stock goes with each acre of land, so that when the land is all sold the owners of the land own and control the water, and they only charge such price for the water as is absolutely necessary to pay running expenses for handling the water in the most economical manner possible, as there are no ditches to clean.

Lands shown and business attended to promptly six days in the week only, on the tract.

Send for Circular containing Map and further information.

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JUDSON & BROWN.

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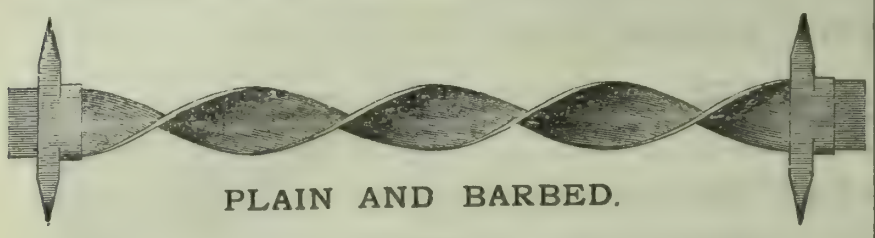

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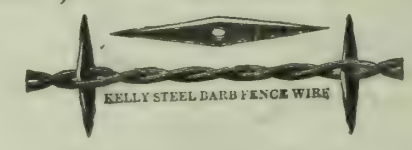

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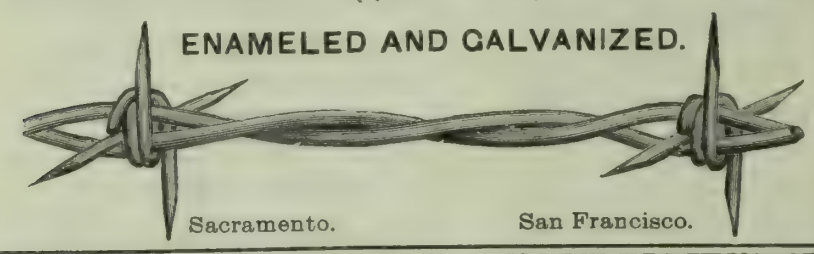

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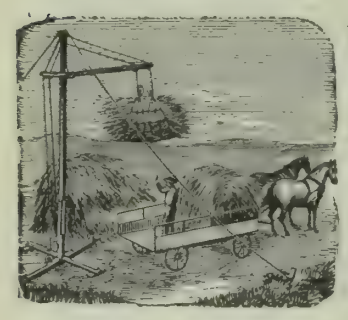

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For Brittle Hoofs,	The most effectual	For Inward Strains,
Fever in Feet,	liniment ever used for	Hide Bound,
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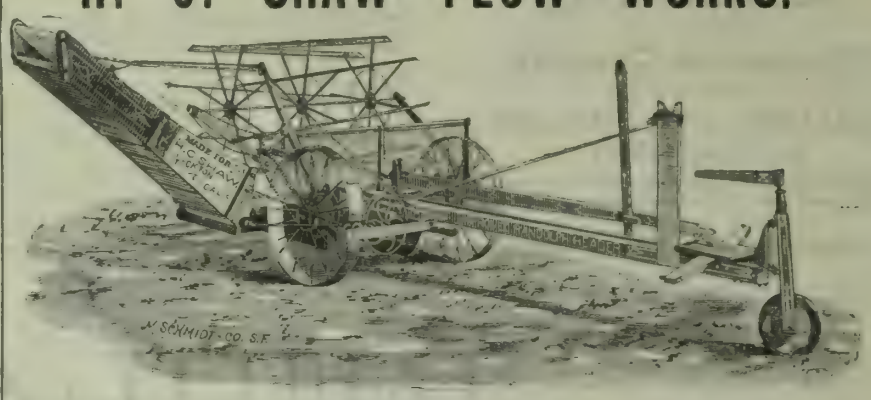

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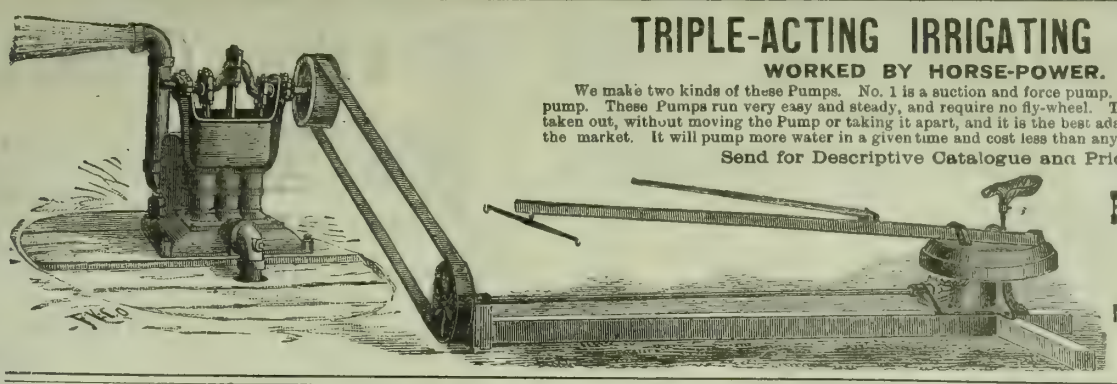

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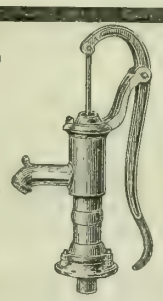

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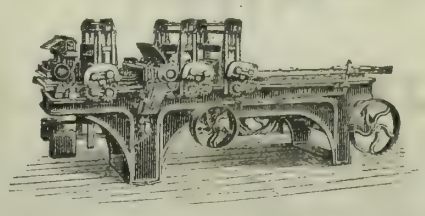
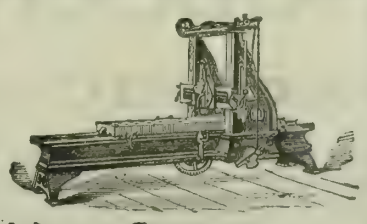
Ammunition in quantities to suit. A liberal discount to the trade. Price List on Application





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For Gardens, Mills, Mines and Fire Departments.

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The Gutta Percha and Rubber Manufacturing Co.
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CHEAP CASH GROCERIES

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All kinds of Fancy and Staple Groceries, wholesale and Retail, at their Stores,
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Goods delivered to any part of the city, or to any railroad, steamer or vessel, free of charge.

Country Orders Specially Solicited.

All such orders must be accompanied by a check or cash. All goods promptly delivered and warranted as to quality. ☞ Orders most respectfully solicited.

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Agents for the
J. I. Case and Woods Headers, McCormick Harvesting Machine Co.'s Binders, Reapers and Mowers, the LaBelle Freight, Farm and Header Wagons, Althouse Vaneless Windmills, Minnesota Chief Thrashers, Engines and Horse Powers, San Leandro, Buford and Stockton Gang and Sulky Plows.

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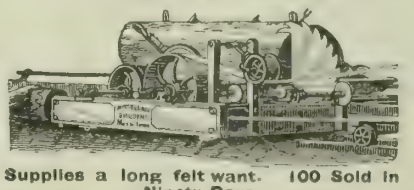
Large Stock of Builders' Hardware and Carpenters' Tools Orders Promptly Filled, and Goods sold at Bedrock Prices.

THE MASSILLON PONY MILL

STRICTLY PORTABLE.



Supplies a long felt want. 100 Sold in Ninety Days.

Every owner of a Farm Engine located in moderately timbered country can find profitable employment the year round by purchasing one of these Mills.
Every owner of a timbered lot is interested in having one of these Mills in his neighborhood. No more hauling logs to mill. All the waste saved.
Write for Circulars and Price Lists, and address of nearest Agent. [Name this Paper.]
RUSSELL & CO., Massillon, O.
BERRY & PLACE MACHINE CO.,
Agents for the Pacific Coast.

Guaranteed to do better work and give better satisfaction than any in use. Sent ON TRIAL to responsible farmers. For circulars and terms to agents address
G. T. BROWN,
Stockton, Cal.

TREES AND SEEDS TRUE TO NAME.

APPLES—4 ft., 15 to 20c.; Astrachan, Harvest, Lawver, Pearmains, Nickajack, Pippins, Ben Davis, &c. PEACHES—3 to 4 ft., 15c.; Alexander, Briggs, Foster, Crawfords, Salmon Cling, Sun, Lee, Lemon Cling, &c. APRICOTS—3 to 4 ft., 20c.; Moorpark, Breda, Royal, Early Golden, &c. PLUMS—20c.; best varieties of earliest and latest. NECTARINES—Large Red, year-old trees only, 10c. KAKI—2 1-2 ft., 25c. Also, at from 3 to 15c. each; Chestnut, Walnut, Butternut, Madeira, Hickory, Pecan, Carolina Poplar, Catalpa, Pawpaw, Ash, Maple, Box Elder, Tulip tree, Sassafras, Magnolia, Sour Gum, Sycamore, Elm, choice Evergreens, and many more; besides all kinds of Berries and Grape, Quince, Shallon, and other cuttings.
Besides I have 6 kinds each of Broom-corn, Sugar Cane, Durra, and well-tested Potatoes; also, Artichokes, Hop roots, Cotton seed, BAMBOOS, Peanuts, Bald Barley, the most valuable forage plants, and many other useful and profitable seeds for the farm. Also a pound of Corn, 25 to 50 cents each. ☞ CATALOGUES FREE.
W. A. SANDERS, SANDERS, FRESNO CO., CAL.

THE CALIFORNIA CHIEF,

SOMETIMES CALLED

Double-Acting Economy, or the Little Economy.

THE SMALLEST AND Handsomest Hay Press MADE

Puts 10 Tons of the DRYEST HAY In a Common Box Car.

EQUAL IN POWER to Any. HEIGHT, Including trucks, 4 ft.; Width, 2 ft.; Length, 12 ft.

CAPACITY, About One Ton per Hour.

This powerful little machine all things considered will give better satisfaction to the purchaser than any small bale press yet made, on account of the ease with which it can be moved about over hills or bad roads, and because of its great strength and power, and the ease with which it can be worked by both horse and man.

On account of its bearing a vague resemblance to an Eastern press called the Economy, it is frequently referred to by our customers as the Little Economy or the Double Acting Economy, but it is not in any sense an Economy Press. With the merits or demerits of that press I have nothing to do, but to correct a false impression and set the California Chief properly before the public I specify the following

Points of Difference between the California Chief and the Economy.

Both presses have their horse levers worked on the side opposite the stack and both are reversible, that is to say the horse travels back and forth to operate them.

1st. But with the California Chief *the horse presses a charge when going forward, and another when he returns.*

With the Economy he presses a charge when going forward, but when he returns *he merely draws the follower back.*

Thus it will be seen that the horse has to be driven twice as far to press a bale with the Economy as with the California Chief. In fact it is necessary with the Economy to drive a horse on the trot constantly to do a small day's work while with the Chief the feeder must hurry to keep up with the horse when driven on a slow walk. To state this point of difference another way. The follower of the California Chief goes back itself instantly after the charge is pressed, while with the Economy, it must be drawn back by the horse going nearly 40 ft., the feeder waiting with his forkful of hay.

This important difference makes

The California Chief Nearly Twice as Fast as the Economy, besides being Much Easier on the Horse.

2d. With the California Chief the bale is tied through slats in the sides of the press and the wires can be put in at one end while the bale is being made, and after it is tied it is pushed out through the end by putting in more hay, *the horse doing the work.* With the Economy two side doors must be opened when the bale is pressed, each of which sticks so that it requires time and hard work with a lever, after which the wires are put on and the bale is *kicked out*, frequently by great effort, and the doors must then be closed.

3d. The California Chief is 12 ft. long, the Economy, 18 ft.

4th. The bales of the California Chief will pack to much better advantage in a car than those of the Economy, on account of their being made just the right size to fill without undue crowding. The California Chief is not a perpetual press, but the hay is pressed against a solid head and the horse stops while the bale is being tied. No press has ever been made that equals it in simplicity of construction, and, with the exception of a single solid casting, it could be made complete in any country village. It is made of the best Eastern oak throughout, and is believed to be so strong that it cannot break, even with unfair usage.

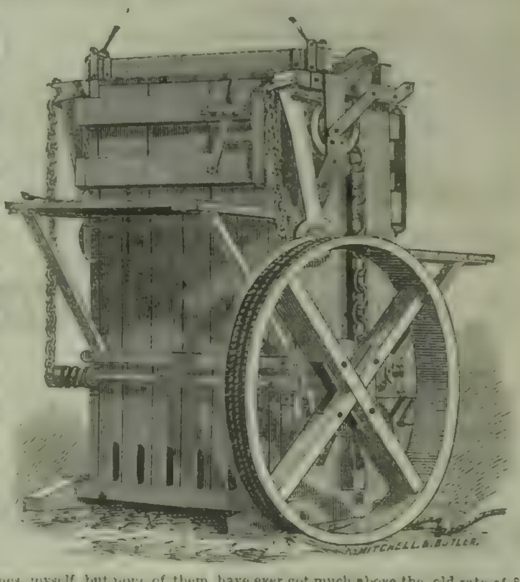
It requires no staking down, and is ready for business as soon as it has been leveled, by lowering the wheels into the ground two or three inches with a pick. The bales are beautiful, being as smooth and square as plugs of tobacco. The bales run mostly in this neighborhood (San Leandro) from 175 to 200 lbs. They measure, *when out of the press,* 18x22x42 inches. About 125 of them will go in a box car. They must average 166 lbs. each to load a car with 10 tons.

An intelligent horse will learn to go alone on this press in half a day, then two men can work it to good advantage, and even one can do fair work. It is the easiest press on the men that is made. They all (except the man on the stack) work on hard firm ground, out of the dust, and have no climbing up and down from the press, and no lifting of heavy doors or kicking out of bales. No press that I have ever seen is as well made as I am making the California Chief this season. Every piece in them is clear, tough Eastern white oak, selected with great care, and the iron work is of a solidity and strength that will defy even unfair usage. I warrant them fully for one year, and would not be afraid to warrant them for five. It will pay a man who wants a small bale press to come a hundred miles to see one of these machines before purchasing any other.

JACOB PRICE,

San Leandro, - - - - - California.

The Price (Petaluma) Hay Press.



This press, which I invented and built when I was a young man in Petaluma many years ago, for my own use in the field and without any great expectation as to its sales or general use, is today what it was when first perfected, namely,

The Fastest and Best Hay Press Made.

None other can bale a ton of hay so quickly or for so little money, and from none does the hay look so plump, clean and inviting.

When I look back, after years of experience in the mechanical line, and see how perfect this machine was made, when I had so little experience, and was scarcely more than a boy, I am astonished.

I am satisfied now that the success of the press was due principally to one or two causes. The first was the practical knowledge which I gained in the field, of the defects of the presses then in use. They all had three feet or four feet of their lower part filled up with machinery, which prevented the follower from going clear down to the ground, and thus made the press three feet or four feet higher than it should have been. This defect I was the first to remedy. I got the follower down to the ground and thus made my press three feet or four feet lower. The result was

It Increased the Speed of Hay Presses from about 8 or 9 Tons Per Day to 13 or 14 Tons Per Day, and Reduced the Price of Baling Nearly One half.

Since that time I have seen at least 20 attempts to make a better machine made by others, and I have made at least four earnest ones myself, but none of them have ever got much above the old rate of 8 or 10 tons a day.

Nearly 1,000 of these machines are scattered over the coast, and some of the first ones built are to-day in use around Petaluma and San Jose.

The second reason for my success was a sort of lucky accident, in discovering a free, compact and frictionless progressive leverage.

When the small bale presses came into use I thought the days of the Petaluma were numbered, but after eight years I have yet to learn of one of them being in use where the shipments of hay are to be made for short distances only.

Of course, where hay has to be moved considerable distances in box cars, the small bale presses are indispensable, but the Petaluma will bale hay at little more than one-half the cost per ton of the best small bale presses made or any other press except itself.

Of late years I have made the Petaluma Press wholly of Eastern oak and the iron work very heavy, the result of which has been the killing of my "Extra" business dead. I haven't sold a single extra to my knowledge for any press made the last five years.

I make them at the works of the San Leandro Plow Co., where I have all the facilities possible for doing good work. Price the same as for years past, $450.

DEDERICK HAY PRESSES

I import and manufacture all varieties of Dederick Lever Perpetual Presses. They are machines of great merit and sell to the entire exclusion of all others east of the Rocky mountains. Prices from $150 to $500. Catalogues containing full particulars of all the above-named presses sent on application.

JACOB PRICE,

San Leandro, - - - - - California.

WHITE LEAD.

USE NONE BUT HOME MANUFACTURE!

Guaranteed to be Superior to any imported. The "Pioneer" White Lead is an entire Pacific Coast Production, and it is guaranteed free from any adulterations. It is STRICTLY PURE. It is superior in COLOR, BODY, FINENESS and DURABILITY to any made elsewhere in the world. Use no other. The use of the "Pioneer" White Lead means the employment of every industrial interest on the Coast—the Miner is employed, the Farmer raises the oil seed, the Mechanic makes the machinery and kegs, and the laborer has occupation. The purchase or encouragement of Foreign manufactures, is SUICIDE to every manufacturing interest on this Coast, and to our dependence as a community, and integrity in the employment of intelligent labor and to the consumers of our natural and home productions.

No matter how specious arguments of others may be, reflect and consult interests, not of the moment, but of the future, your own happiness and welfare, and that of your progeny, and promote and establish it by using nothing but HOME MANUFACTURES. In your painting wants use nothing but PIONEER WHITE LEAD.

Every First-class California Storekeeper has it.

RUBBER PAINT.

THE PACIFIC RUBBER PAINT

Was the Original RUBBER PAINT introduced on this coast. At time of its introduction the Averill Paint Company, since changed to the California Paint Company, was the only manufacturer of Mixed Paints in California. Our advent with an article of Paint, the manufacture of which was the result of a PRACTICAL experience of over 30 years, so completely retired the paint of our competitors that they in their utter ignorance of all business courtesies or honor, counterfeited our trademarks and labels. We ask the question, if they had confidence in their own stuff, why not make an honorable stand-up fight on the issue of QUALITY and merit. But they displayed their cowardice and contemptible littleness by evading an honorable and business issue, and resorting to putting up their mixtures under a title—RUBBER PAINT—which we had made for years before a record for, as the "Best Mixed Paint" made in the world—a record earned by our practical experience and public trial.

DON'T TAKE ANY MIXED PAINT EXCEPTING THE PACIFIC RUBBER PAINT. SEE THAT THE WORD PACIFIC IS ON EVERY LABEL.

Any other so-called RUBBER PAINT is a Miserable and Contemptible Imitation.

If your Storekeeper don't keep it, send to us direct, and we will with pleasure give you color cards, prices and such other information as you may desire.

WHITTIER, FULLER & CO.,

Manufacturers Pacific Rubber Paint. - - - - - - - - San Francisco.

PACIFIC RURAL PRESS

Volume XXIII.] SAN FRANCISCO, SATURDAY, JUNE 24, 1882. Number 25

Notes on Vine Pruning.

It is not, of course, the season for vine pruning; except the shortening-in which pertains to the summer time. It is, however, a good time, while the plant is in good growth, to study its habits of growth and bearing, for these have a direct relation to methods of pruning. To draw attention of the newer grape growers to the advantage of study of the vine as a school of experience which yields satisfactory results, we take from the last report by C. A. Wetmore, of the State Viticultural Commission, an illustrated account of several different methods of vine pruning practiced in the south of France. The account is prefaced by a few remarks concerning the principles involved in pruning.

Pruning has so considerable an influence on production, that all concerning it deserves to be examined with the greatest care. The vine bears its fruit on shoots of the current year, produced by the development of eyes or buds on the preceding year's canes. Therefore, every year, when pruning, one or more of the latter must be saved, their length being reduced, but a more or less considerable number of buds left on them. When the canes are pruned to from one to three buds, the pruning is said to be short, and the portion of the cane that is left is called a spur; if, on the contrary, a greater number of eyes are left on the preceding year's canes, the pruning is long, or of long wood.

Generally the choice of one or the other of these systems is not arbitrary; it depends upon the special aptitudes of the varieties to which it is to be applied. In fact, some have their fructiferous buds near the base of the preceding year's canes, and consequently only the lower part of them need be preserved; others bear fruit on canes coming from eyes on the extremities, so that they must be pruned long; finally, some put forth fructiferous canes at every bud. In the last case, either system of pruning may be chosen. However, whenever long pruning is possible, the vintage will be larger than in the case of short pruning.

Most of our old southern varieties admit of only short pruning, and their being grafted on American stock cannot, in any way, modify the system adopted for them up to the present time; but it is different with the Æstivalis, that are cultivated for the sake of their fruit; nearly all of the latter, the Herbemont, Cunningham, Black July, etc., seem to require long pruning. As for the Jacquez, it possesses, without doubt, the property of yielding fructiferous canes by the evolution of its eyes, even the lowest, but it is very well adapted for long pruning, and gives infinitely more fruit by this method, which will probably be applied to it in most cases. In experiments made in 1880, in the School of Agriculture, at Montpellier, vines of the Jacquez pruned long (Fig. 3) yielded about 17 lbs. of grapes, and those subjected to short pruning yielded only about 2 lbs.

The conditions under which the divers systems of pruning should be applied being thus pointed out, we shall now study the points relative to their execution, commencing with short pruning. The first element to be considered is the choice of the cane that is to furnish the spur. As regards production of fruit, a cane of average vigor, very healthy and well ripened, should be preferred; those of too great development give more wood than fruit, while the small ones do not furnish sufficient vegetation. Moreover, in order to assure good shape of the vine, it is necessary to choose, for short pruning, a cane so directed as to assure a suitable prolongation of the old wood or arm that bears it. Therefore, in vines trained *en gobelet*, a cane radiating from the center towards the exterior, oblique, and more or less ascending, according to the natural appearance of the variety under consideration, must be selected. A more vertical cane must be selected for varieties whose canes tend to spread too far apart, and a more horizontal one in the case of erect varieties which are of too close a growth. In order to avoid too rapid elongation of the arms, the spur must be as near as possible to the one of the preceding pruning.

The cane once chosen, all the others are taken off, and it is then cut down to the desired length, which is generally to two eyes, besides the eye at the base (*bourillon*). Sometimes it is well to leave a third eye in vines exposed to the action of frost by the precocious bursting of their buds, or by their situation. The *bourillon* generally remains dormant under these conditions, and may develop in case of accident, yielding some fruit, or at least excellent canes for fresh supplies. If the internode is not too long, the cane should be cut at the node, just above the last bud that is kept, and quite perpendicularly to its axis; there is thus a woody partition to work on (Fig. 1), which forms a diaphragm at this point, and prevents water from penetrating the pith and rotting it. When, on the contrary, the nodes are far apart, the cane is cut obliquely, at a short distance above the last eye that is to be kept; the inclination of the cut facilitates the shedding of water and lessens the chances of decay. Directions for long pruning are sensibly the same as those we have just given for the formation of spurs; but a long cane having to nourish more shoots than the latter, as a general thing none of them can develop sufficiently for fresh supplies the following year; therefore, this system should not be used alone, but must be completed, as Dr. Guyot has suggested, by the addition of a spur, which furnishes more vigorous and more suitable canes for pruning.

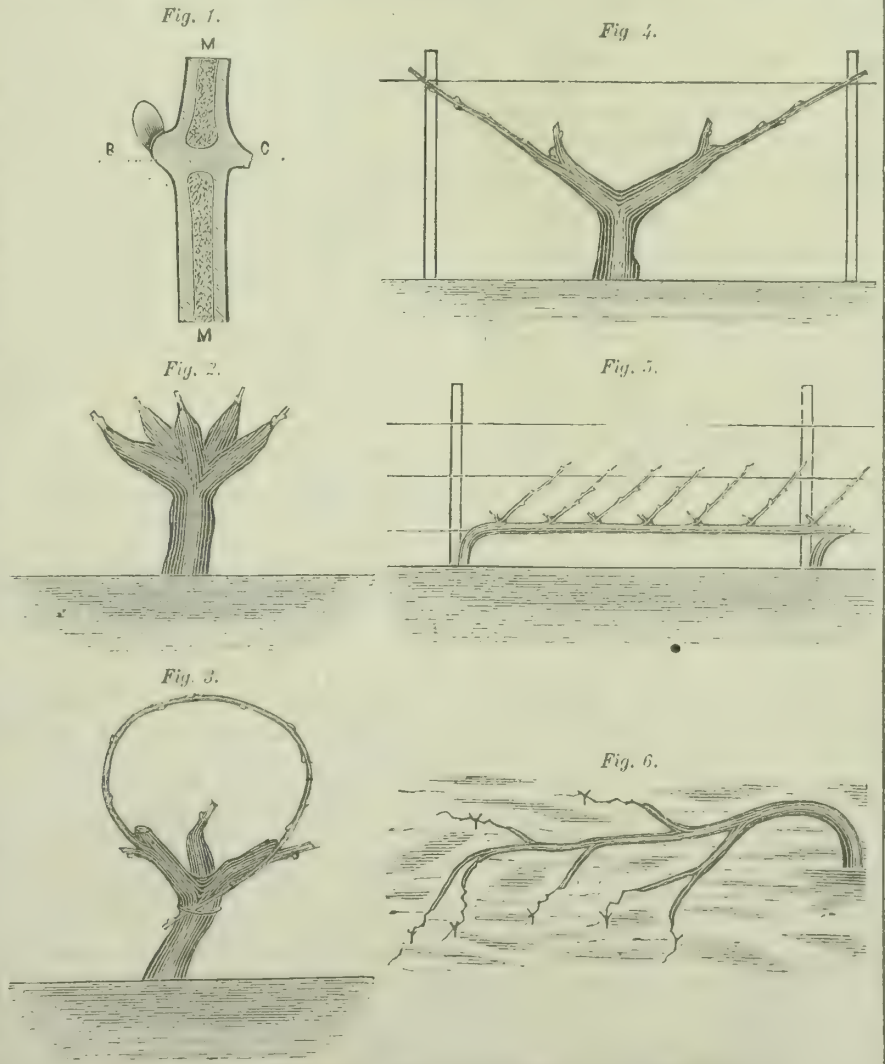
Vines made to assume some regular form are trained *en gobelet, en espalier*, or *en cordon*. In the form *en gobelet*, a foot, more or less, high, supports a certain number of arms, which, diverging, form a sort of vase in the center (Fig. 2). This system is the most general one in the south of France; in fact, in that locality, it is advantageous in assuring an equal distribution of canes over the whole surrounding ground, and consequently in preventing the latter, to a certain extent, from becoming too dry. It is well adapted for cross plowing and layering; then, too, what is better than all, no props are needed, and the grapes are screened from the direct rays of the sun, which is likely to burn them or diminish their size.

The number of arms to be left on the stock varies according to its vigor. It should be greater when unproductive buds are developed on the old wood. On the other hand, it should be less when there is found to be too great diminution in the length of the shoots, notwithstanding the usual care and manuring. This form is generally associated with short pruning; however, besides the spurs, there may be left on one or more arms, a long shoot, which is curved like a hoop over the vine, and held in place by being interlaced with another, or fastened with an osier to an opposite arm (Fig. 3). It is simply necessary to see that the long canes are produced successively on different arms every year, on account of the great development they induce in the latter. This process has yielded satisfactory results in experiments made in the Agricultural School of Montpellier on the divers varieties of *V. Æstivalis* cultivated for their fruit, such as the Jacquez, Black July and Herbemont, and it is said to be the best one to adopt for those varieties in countries where vines are usually pruned *en gobelet*, and where props are not used. The fruit does not drag on the ground, the canes producing it being supported at the same hight as the others, and the shoots being distributed the same as in short pruning. As for European varieties grafted on American stock, as we have already had occasion to say we do not think that there is any need of modifying for them the methods that have long been used.

In the form *en espalier*, the arms are symmetrically distributed (Fig. 4). It is adapted to localities where the grape, in order to ripen, must be exposed to the action of the solar rays. The only inconvenience is in its requiring somewhat minute care for an equal degree of development to be maintained in its divers corresponding parts. Under conditions suitable for it, the cordon, which is easier trained, should be preferred to the latter. This form is characterized by the vine following a single direction, horizontal, vertical or oblique. It is formed by one cane bearing without the help of arms, spurs, or both long shoots and spurs (Fig. 5). Under such conditions there is no need of attending to the equilibrium of the various organs of the vine, since the growth is always in the same direction.

Training the vine *en chaintre*, which is done in Touraine, is an application of pruning *en espalier;* the vines, very far apart, consist of a symmetrical branch of the old wood extended horizontally, and supported by little forked pieces of wood driven into the ground, and furnished with long cuttings (Fig. 6). This system seems to be well adapted to the peculiarities of the American *V. Æstivalis;* if applied to the grafting stocks, it would be advantageous in lessening the amount of grafting to be done, and, in every case, the number of vines to be planted to the hectare, owing to the considerable distances that it admits of leaving between the stocks. Unhappily, it is inconvenient in the warm and dry region of the south, as the vine has to be disturbed during summer cultivation, which often causes the grape to be sunburnt. When this danger is not to be feared, it is preferable to substitute for the *chaintre en espalier*, which is most often used, a *chaintre en cordon*, which is easier trained.

Of the engravings on this page, Fig. 1 is a section of a joint of a cane. The line, *B C*, shows the cross-section of the woody structure; *M*, pith. Fig. 2 shows the stump of a vine low pruned, goblet style, pruned with spurs. Fig. 3 shows a vine, goblet style, with a long fruit cane preserved in circle. Fig. 4 is a vine staked. *en espalier*, with long wood and spurs. Fig. 5 shows Cazenave's system of cordon, with long wood and spur. Fig. 6 shows a vine trailed upon the ground—Chaintre system.



FRENCH METHOD OF VINE PRUNING AND TRAINING.

End of the Volume.

We have come again to the turn of the journalistic glass, for the present issue completes Vol. XXIII. It has been a volume somewhat novel in its character. A reference to the folios will show that the volume contains nearly 100 pages more than earlier volumes. It is also apparent, from the review of the contents, that fuller treatment has been awarded to important topics than heretofore. The extra pages have enabled us to present a number of useful and entertaining themes in a more complete form. That this has proved satisfactory to readers is apparent from the reception which has been extended to the paper, both by subscribers and advertising patrons during the last few months. The growth of the journal has been steady and healthful, and its value to the industries and in the homes of the people has been clearly affirmed. We go forward now into a new volume with renewed strength and confidence, and determined that the RURAL shall still farther advance in the excellence which wins the esteem of the sterling agricultural classes of the Pacific coast. Much of the value of the present volume, as of those which have preceded it, has lain in the admirable voluntary contributions of observations and experiences from our host of correspondents. To them the thanks of all readers of the RURAL should be extended. In the coming volume we invite all to a still more free comparison of views and experiences on subjects of agricultural importance.

Upon the last page of this issue may be found the index of Volume XXIII, which has been carefully prepared, and will be found of value to those who preserve the RURAL for future reference.

GLUCOSE manufacturers talk of a consolidation all over the country.

CORRESPONDENCE.

We admit, unendorsed, opinions of correspondents.—EDS.

Nevada County Notes.

EDITORS PRESS:—For the third year, I am spending the summer months on the divide between Bear river and Steep Hollow creek in the county of Nevada. I am boarding at the residence of Mr. Frank T. Maguire, who is an old California pioneer. Early in 1850, Mr. Maguire was a mining partner of Mr. W. B. Ewer, of the RURAL, at Nevada City; and he was one of the owners of a hay yard in Sacramento, before the great fire of 1851. In 1852 he commenced mining in Steep Hollow creek, near Lowell Hill, where he was successful in making a raise of the golden metal; and, in 1864, he bought the possessory right of an improved quarter section of land, between Liberty Hill and Lowell Hill, where he has resided for 18 years, cultivating his ranch and looking after his mining interests.

Mr. Maguire has an elegant residence, which is built of pine and spruce, rustic outside, sugar-pine ceiling inside, and thoroughly covered, inside and out, with the celebrated Pacific rubber white paint. His barns and out-houses are large and commodious. He has 60 acres under a substantial cedar rail-fence, and 10 acres under a cedar post and picket fence. He has a fine orchard of apple, pear, plum, peach and quince trees. He cultivates the strawberry, raspberry, blackberry and grapevine. He has horses, cows, hogs and poultry. He raises alfalfa, red clover and potatoes. Of the 60 acres under rail fence, at least 40 acres are swale or natural meadow land, producing a great yield of succulent grass for hay and pasturage. This ranch has unrivaled facilities for irrigation. At the head of the valley there is a number of large springs, which furnish at least 20 inches of pure, clear, cold water throughout the year. A portion of this water is conducted by a ditch and flume into an immense framed tank commanding the cultivated grounds, where the warm rays of the summer sun prepare it for irrigation.

There are three other orchards and ranches in this vicinity. One is owned by Hon. Jere Levee; a second by Mr. Wm. Wilkinson, and a third one by Mr. Chas. Eastin, at Lowell Hill. I have very carefully examined the orchards of Messrs. Maguire, Levee and Wilkinson, and their apple, pear, plum, cherry and quince trees appear to be in a perfectly healthy condition. There is as much fruit formed as the trees can possibly carry to ripeness. The late and severe frosts, which were so destructive to young fruit in Trinity, Shasta, Napa, Contra Costa, Monterey, San Luis Obispo, and other counties, only caught the peach trees here, as the other varieties of trees were later in blossom. There will also be great crops of strawberries, raspberries and blackberries. The gooseberry grows wild all over this divide; hence, I do not see it cultivated in gardens; but I have noticed it by the side of the wagon road, along the mountain trails and through the woods. It is as common as the rattlesnake, but not half as dangerous. The numerous hogs running at large all summer feed and grow fat on wild berries, roots and acorns. They also root out snake holes with abundant success.

In November of each year, Messrs. Maguire and Levee send their cows and young cattle down to ranches in the lower foothills for the winter, and then drive them back in May for their summer range. Only a few milch cows and saddle horses are wintered up here, as the snow usually falls from four to eight feet deep, and only trails are kept open. Boys and girls have lots of fun in sliding down hill on snow-shoes.

The next question to be considered is, the profit of these mountain ranches. I will draw from the figures of 1881, as they are a sample of previous years. In November Mr. Maguire sold his apple crop in bulk at the ranch at $50 per ton, to the merchant at Lowell Hill, the buyer finding his own sacks and boxes. He also sold several tons of potatoes, at the same price per ton, and in the same manner. When he delivered potatoes to boarding-houses and miners in small lots, his price was $3 per cental. Mr. Levee sold his apples at $2 and $2.50 per cental, and his potatoes at $2.50 per cental, cash on delivery. Mr. Wilkinson sold his last lot of apples, in May, at $4 per cental, or $2.50 per box of 60 lbs., delivered at the C. P. R. R. at Dutch Flat. Not a pound of apples can now be purchased on the divide. But Mr. Levee is holding a few boxes of Nickajacks, Limbertwigs, Newtown Pippins, Spitzenbergs, Mock's Late and White Winter Pearmains, to test the relative merits and qualities of the latest winter apples. His calling friends may enjoy the toothsomeness of the best fruit in the State; but he has no more to sell of the crop of 1881.

Potatoes yield six tons per acre, when they are properly planted with well-rotted manure and carefully irrigated. Hence, an acre of potatoes is worth in bulk or at retail $300@$360 cash. Some parties here think that they can raise eight tons to the acre, but I have not seen it done. The varieties of potatoes cultivated are the Early Rose, Early Goodrich, Peerless, White, Neshannock and the Salt Lake potato. Strawberries sell at 5 lbs. for $1; garden vegetables at from 2 cts. to 3 cts. per pound; milk at 40 cts. per gallon; fresh butter at 50 cts. per pound; fresh eggs at 40 cts. to 50 cts per dozen. Alfalfa hay is worth $25 per ton; each acre of alfalfa is worth $125, at five tons per acre for three cuttings. Mr. Maguire's place is 4,050 ft. above tide water, as measured by instruments, and Lowell Hill is 50 ft. higher. Mr. Eastin's apple trees were planted 20 years ago, and Mr. Maguire's 24 years. The other orchards are only some 12 years old.

The geological formation is slate bed-rock from Grass Valley up to Little Bear valley, and the elevation is from nearly 2,500 ft. to 4,500 ft.; hence, this belt of oak, pine, cedar, spruce and tamarack, is the natural home of the apple, pear, plum, cherry, gooseberry and blue-black raspberry. The people of the valleys may have the orange, lemon, fig, olive and their nasty alkali water, with their scorching north winds, in full welcome; but give us the climate, soil and fruits, of the higher hills, where the snow falls every winter and where the pure cold spring water gushes out of the mountain side. Up here, robust boys and healthy girls are reared; and here, also, they are educated in good public schools. THOS. S. MYRICK.

Lowell Hill, June 5, 1882.

THE APIARY.

Prickly Pear Tea in Foundation Making.

EDITORS PRESS:—Not seeing much account of this southern country, I thought that I would give a few items worthy of room in your valuable paper. The weather is rainy and foggy; splendid growing weather, but poor hay weather. The prospect of a honey crop is flattering now, being better than at the present time of the season for several years past. Just now I want to call the attention of the bee men, or at least the part of the people who have turned their attention to the enterprise of honey making and developing of the late improved methods of aiding and comforting the little bee, to one great and important discovery just made by me this spring, and I want all who may profit by it to know it. I will now endeavor to explain myself as simply as possible. I bought one of Francis Dunham's comb foundation machines, and it is the largest size, and a splendid machine of the latest improvement, making the commencement of the cell on the foundation. According to directions, I dipped my wax and had good luck making the sheets, and when I came to putting it through the rolls and printing, as it is called, I procured slippery-elm bark and made soapsuds and soaked all of my cakes in the warm solution, and in spite of all I could do the wax would stick to the rolls once in a while, and after I put this foundation in the frames and put it in the hives, the bees disliked the soap, and I took great pains to wash all off that I could after printing, but there would be enough left to cause the bees a great deal of trouble. Sometimes they would not fill out two or three cells on that account, and would leave a great many such places on the foundation just on account of the soap. That put me to studying to see if there was some way to avoid that soap part. The very first experiment surprised me. I cut from a bunch of "prickly pears" five or six leaves, and singed the thorns off and chopped them up with a knife in chunks, and put them in a bucket and poured hot water on them and let them soak over night. The next morning I tried the water that I had soaked these leaves in and it was more slippery than any soapsuds could be made, and I commenced printing, and not a single instance of sticking occurred in running through 300 cakes. The vegetable acid of the prickly-pear is a little sour, and the bees like the taste of it and will hover over it and work on it. The prickly pear grows spontaneously all over the southern country, and is raised in most parts of the United States, or if needed and could not be procured conveniently, 100 pounds could be sent by rail, which would work up 1,000 pounds of wax. It is an indispensable article for that purpose. You need not wet the rolls nor warm them at all. The wax will not stick if wet in this solution. It forms a slimy liquor that sticks to the wax and prevents any sticking, and does no harm, no matter how much stays on after it is printed, for the bees like it. In my next I will give other important experience in raising pasture for bees, and the enormous yields of honey from different plants cultivated.

L. H. GASKILL.

Campo, San Diego Co.

POTATO FLOUR.—Potato flour, or the dried pulp of the potato, is attaining considerable importance in the arts—so much so, in fact, that in Lancashire, England, some 20,000 tons of it are sold annually, and its market value is stated to be much greater than that of wheat flour. The article is extensively used for sizing and other manufacturing purposes, and, on being precipitated with acid, is converted into starch. After having been calcined it is used with advantage as a dressing for silk.

PATENT MEDICINES IN FRANCE—In France all patent medicines must be indorsed by an official board of physicians before they can be sold.

ARBORICULTURE.

Value of Eucalyptus Timber.

EDITORS PRESS:—I note a letter on the above subject by Mr. George E. Sewell, of Ventura county, in your issue of to-day, and also your request that "all will give their experience in using eucalyptus timber." I presume Mr. Sewell means only *E. globulus*, the blue gum, for I have not heard of any of the other species, of which there exist over 150, being systematically cultivated either for use or ornament. [Several other species have become quite common.—EDS. PRESS.]

Now, my experience convinces me that for posts, rails and out-door work generally, where it is exposed to long protracted heat, followed by considerable wet weather, the blue gum is about the worst of all to resist decay. Baron F. Von Mueller, the government botanist of Victoria, Australia, to whose enthusiasm the world owes that tree, allows its wood an endurance of about nine years. But he means well-grown old trees, not 10-year old saplings. As for shrinking and twisting, most of the eucalypts will do so even after having been carefully seasoned, some much more than others. Saplings, even of red gum and iron bark, will twist and decay in 10 years, just above the grass, for about a foot high, the cause being the damp and wet. But for inside work any of the kinds will do well for beams, rafters, etc. Full-grown trees of blue or white gum, stringy bark, messmate and box, last well when not set in water, as for piles, jetties, etc. Red gum, iron bark and jarrah, of Western Australia, seem to resist the attacks of any influence but fire. No kind of vermin can touch them if cut in season; hence the demand for those kinds in the British possessions in Eastern Asia, where the termites (white ants) are so destructive, a demand which has already required restraint to be placed upon the export of red gum and iron bark. Both of those are comparatively slow growers, and the red gum requires damp or actually wet land. In fact, it is never found far from fresh water lagoons and creeks. The fresh water river banks and flats of this State might be rendered sources of immense wealth in the future, if planted with it; and the same might be said of poor, treeless land like the benches of Mount Diablo, if covered with the iron bark. I inclose a few notes on some species which might well be largely introduced, the seeds of which could, no doubt, be obtained in this city.

JOHN I. BLEASDALE, D. D.

613 Merchant St., S. F.

Desirable Varieties.

Eucalyptus Amygdalina.—Not rarely over 400 ft. high. The wood is fissile, well adapted for shingles, rails, for house building, for the kelson and planking of ships, etc. It is hardier than *E. globulus*.

E. Botryoides.—Stems often 80 ft. high, with a diameter of 8 ft. Timber sound to the center; adapted for water-work and wagons. Posts of it are very lasting, as no decay was observed in it in 14 years.

Blue Gum (*E. globulus*), when used for out-door work, fence rails, railway ties, etc., is reported to last nine years, but this means old, full-grown timber,

E. Lencoxylon.—The ordinary iron-bark tree of Victoria. It is considered the strongest wood in the colony. It is a hardy tree, often 100 ft. high, and can be easily grown on stony ridges not readily available for ordinary husbandry—lower silurian, sandstone, slate, ironstone and quartz. It is rich in kino.

E. Marginata.—The jarrah, famed for its indestructible wood, which is attacked neither by chelura, nor teredo, nor termites. Ships built of it need no copper sheathing.

E. Obliqua.—The ordinary stringy-bark tree, attaining gigantic dimensions. It is used for all sorts of rough work; splits freely into pieces of any size, from shingles upward.

E. Rostrata.—Red gum of Victoria. Habitat, river flats. Wood of extraordinary endurance under ground. Famous for posts, rails, railway ties and for all parts of ships exposed to teredos, etc., and ranks next, if not equal, to the jarrah.

The above descriptions are from "Select Plants Readily Eligible for Industrial Culture or Naturalization in Victoria, Australia," by Baron Ferd. Von Mueller.

A RARE CURIOSITY.—According to the Utica (N. Y.) *Observer*, Mr. F. B. Morse, of that city, has in his possession a carefully preserved specimen of a mermaid, captured by him while bathing on the Chinese coast. The animal is a singular looking object, the head, shoulders and forward portion of the body, including a pair of arms, bearing a striking resemblance to the human form, while the remainder is like a fish, with the usual fins and tail. The head was covered with hair when the animal was captured. It was taken alive while lazily swimming among some beautiful coral formations in shallow water, but it only lived two or three hours in captivity, and the body was preserved by a Chinese process. It measured two feet and four inches when alive, but its length has shrunk to 21 inches.

FORESTRY.

Forest Trees of California—No. 1.*

California Nutmeg Tree—(Torreya Californica.)

"Low whispering through the shade." *Burkardt*

This very charming evergreen tree is one of the most fascinating of all the Yew family. Some, perhaps, are more grand and imposing, as the Kakaterro (*Dacrydium taxifolia*), of New Zealand; or elegantly fan form and fern-like in foliage, as the Ginko (*Salisburia adiantifolia*) and others of Asia. Our false nutmeg-like yew and kindred species, so highly extolled and appreciated for beauty, are only separated from coniferous trees by their fruits not being collected into cones, each seed growing singly by its independent self and not protected by hardened scales, although sometimes in clusters of several. They are, nevertheless, in a similar manner resinous. These trees have also the general appearance and habit of conifers. From the most ancient times all the *Taxads* have been celebrated for their remarkable firmness, durability, and great elasticity—held in highest renown for the primeval weapons of war. Wars are still waged for their possession in the isles afar off, both for their bows and for their idols, and by the common consent of all mankind, the timber is considered the best known in the world. Our own appear to be no exception to the rule.

The California nutmeg tree towers in the coast forest 80 to 100 ft. high; clean trunk of 40 ft., straight as an arrow, and four ft. in diameter. As more commonly seen, it is of moderate stature, say 40 to 60 ft. high, by about two to three ft. through. Wholly exposed, or partially, on the margins of woodlands, it may become smaller and more round-headed.

The leaves, from a yew point of view, are long, two to two and one-half inches, narrow and line-like, rigid and flat, with very sharp awl-pointed or prickly tips, color rather dark shining green, arranged in two rows, one on each side of the twigs, after the usual way of yews, spruces and firs. These little branchlets divide by threes and fours flat fan-spread—the principal large branches whirled around the main body; this wheel-branch feature is apparently lost in age or cloaked over as the top closes in and becomes full with myriads of soft drooping or flexible sprays—so surprisingly foreign to its earlier growth. At the first glance one can scarcely realize this to be the same prudish nutmeg tree known before or elsewhere. Arrived at this maiden condition, the charm of her changes grows upon you in many ways amazingly—yet withal, in the highest degree pleasing; from the former stiff and formal foliage, or merely symmetrical branch and twig, the ever-vernal glossy tresses, in varied beauty, now begin to hang gracefully from head to bosom, festooning the boughs and thickening in the whole foliaceous expanse. This results, in a degree, from the natural persistence of leaves very far back on the branchlets; besides, the rigid two-rowed feature, mentioned before, becomes less strictly observed; it thus lightly thickens while it is not at all heavy, notwithstanding the rather dark, deep varnished green mantle, but maintains a very tasty flossiness fully equal to the most graceful forms of Sitka spruce (*Picea* [*Abies*] *sitchensis*), and only inferior in extent to the marvelous pending curtain-corded wreaths of the most elegant types of Douglas spruce (*Pseudotsuga* [*Abies*] *Douglasii*): thus we view it common to kindred trees scattered over the western half of the continent of North America (by actual personal observation), comprising nearly all climates and conditions of the Pacific. Hence, in most cases, we conclude all that is peculiar is altogether caused by improvised richness superadded to favorite natural conditions of climate and soil; *e. g.* near recent rural residences or old deserted Indian villages or lodges, etc. The nutmeg tree, thus standing on very fertile soil, and more out from the wood, as observed, where it greets the sun face to face the livelong day, the rigid, flat, precise and formal Norfolk island pine style of open-wheeled branch, tier above tier, is merged from the masculine, towering and aspiring top, into the humbler head of modest maidenly beauty, crowned in this delicate sheen of verdure, the transformed tree so captivates the beholder that one can scarcely, with much effort, withdraw the spell-bound gaze; the reluctant eye, constantly returning, will fondly linger in painful pleasure at final parting with this pretty belle from the bowers of paradise.

A large tree formerly grew on Papermill creek, in Marin county, of which we preserve a sketch, for, alas! the vandals have long ago laid it low. A small typical tree may be seen at Mr. Harvey's, just outside his field fence at the bar-way entrance, close on the Santa Cruz roadside, 14 miles below Pigeon Point. We have not the pleasure of this gentleman's acquaintance—never saw him—but took special pains to find out his name many years ago, that we might remember him in our prayers and blessings so long as we live, and forever after, for preserving that beautiful tree. But perhaps the grandest California nutmeg tree known on the coast is that near Duncan's mills, in Mendocino county, over 100x4

* From "The Forest Trees of California," by A. Kellogg; published by the State Mining Bureau. State Printing Office, Sacramento, 1882.

ft., 40 ft. of clear shaft, and straight as an arrow from the bow of the Great Archer himself; sound and flourishing in all vigor, with spreading top, rejoicing and ready as a strong man to run a race; well worth a pilgrimage to behold, in its glory; a noble and living witness that some lumbermen have sylvan consciences; may these and their shadows never be less.

Loth to leave the subject, a few words of descriptive detail and a general remark must close this preliminary notice. The bark is even, of darkish color; fruit, solitary or rarely clustering, close set, pending from the underside of the twigs, obovoid or oval, nearly two inches long by one and one quarter in diameter, plum or somewhat fig-shaped when divested of greenish longitudinally watermelon or pepostriped thick skin-like flesh; the inside meat-structure of the oblong nut or kernel, cut transversely across, resembles the internal structure of a nutmeg, hence the common name; and thereupon many foolish vagaries, bandied about by ignorance.

This tree extends from coast to Sierra, up to at least 4,600 ft. near Yosemite valley, as finely flourishing as here on the coast, but never in extensive groves; rarely in sociable numbers, often scattered, and rather rare. Found also in the southern Atlantic States, China and Japan, but distinct species from that in California. There is not the slightest unpleasant odor in handling this tree, and to perpetuate such scandal by gratuitously foisting an obnoxious name—never known or heard of, save from some unreliable sources abroad, and echoed by Eastern ignorance—is deplorable. With some it certainly cannot be an effort to calumniate both men and things, in one fell swoop, reminding one of recoiling "total depravity;" therefore are we vain to consider it one more instance in the long list of sins to be winked at.

The Vineyard.

Raisin Making in Malaga.

The United States Consuls are securing much valuable information concerning industries pursued in the localities where they are stationed, and their reports are published by the State Department. In the report for 1881, is a letter from H. C. Marston, Consul at Malaga, from which we quote as follows: The cultivation of the vine requires hard labor. The soil is dug out around the root, leaving a circular hole about one foot deep; and, owing to the firmness of the soil, the digging is very difficult. Manure of great strength is used by many proprietors.

Different from meridional Italy, where the vine, always clinging to the elm, throws itself from the soil in forms of graceful arbor, as in the time of Horace and of Virgil, in this country it stretches itself over the ground, and then gathers all atmospheric heat. Thus, although white, the grape has a golden tint, the skin resisting and slightly tough. The branch appears like a root.

The vintage is conducted with great care; they do not gather all the fruit at one time, but mostly go over the same piece of ground thrice, in order that the grapes may have the necessary ripeness.

There are these different methods of preparing the raisins, viz: washing, drying by steam, and the simple drying in the sun. The drying by steam is more particularly followed in the province of Denia, because of the insufficiency of solar heat. It is employed in the south, in case the season is wet during the vintage.

The cut grapes are put in baskets and carried, either on the backs of mules or donkeys or in carts, to the places, often distant, where they are prepared, and although they transport the fruit with great care, it suffers naturally; the skin often breaks, which renders the drying difficult, if not impossible.

To dry the grapes by the washing method, they construct furnaces of feeble draft, in which wood is used as fuel; a round kettle, varying in capacity from 300 to 400 liters, receives a lye formed from the residue or refuse of the grapes after pressing. The lye used is either that obtained from the present year or that which has been kept from the previous vintage.

Placed in wire colanders with long handles, containing two or three kilograms each, the raisins are plunged in this lye, boiling at a temperature of about 212° Fahr. After this first immersion, the workmen examine if the skins are sufficiently shriveled; if not, they immerse the grapes a second time, usually the last. Thus scalded, the grapes are carried to the drying place, and from thence to the stores, where they are packed in boxes. It is not difficult to imagine that the process of immersion is very delicate, and requires skillful watching and great judgment on the part of the workman who conducts it. In reality, according to the quality of the skin, its resistance, which varies with the fruit, the immersion should be more or less rapid, at the risk of having the grapes burst; besides, much skill is necessary to recognize the fissures which may appear. In cases where the heat has been too great, the raisins too rich in sugar will mold shortly after being packed. This process offers, among others, the inconvenience of exposing the raisins to fermentation during transportation, necessitates expense for the construction of furnaces, and the necessary last drying in the sun; besides, no matter what grapes are employed, or what care is bestowed in the preparation, the results will always be relatively inferior.

The method of preparing raisins by steam is as follows: After having been exposed nearly 24 hours to the sun's rays, the grapes are carried on boards under cover, to a building arranged with shelves six or seven feet high. A heat is produced by steam that circulates in an iron tube seven or eight inches in diameter through the entire building. It is unnecessary to submit the grapes to a jet of steam, which would injure them by making them damp, but to a veritable heat of 160° Fahr. Valves, arranged on the floor, cause an even temperature. At the end of 24 hours, usually, the drying is finished, but as the immediate transfer from a temperature of 160° Fahr. to the open air would injure the ultimate result, it is necessary to let raisins cool gradually in a room constructed for the purpose adjoining the heated room, and only when the raisins are entirely cool are they carried to the stores for packing.

This is the process most generally employed in the region of Malaga, a process they are trying to extend to other less-favored climates. The sun furnishes all the heat required. It is to construct divisions, of either brick or stone, exposed to its rays in an inclined position, say 10 yards long and two yards wide. The divisions or apartments are built up at one end with a sort of triangular masonry, which from afar gives them the aspect of a range of uniform tombs. The triangle is so constructed that the sun never fails to shine upon the contents, the interior being covered with fine gravel, which attracts the heat. Immediately after gathering, the grapes are placed in these divisions, and are exposed to the heat of the burning Andalusian sun of August. Never, it appears, have they dreamed of ascertaining the heat thus obtained, but the experienced cultivators affirm that, during the heat in August, they attain a temperature of 145° Fahr. At nightfall a very simple method of covering is applied to guard the fruit from the heavy dews or rain, either of sail-cloth or heavy canvas, so arranged that it covers entirely the grapes that are drying within, and being supplied with rings on two sides, slides up and down as a curtain, at a moment's notice. In many places boards or planks are used, giving the appearance of a roof. During the process of drying they carefully remove the grapes that remain green or are spoiled, and they turn each grape in order that they may darken in color uniformly. Competent judges give the preference to this simple method of drying, as much for the results as for the simplicity of the process. The raisins that have been prepared by the scalding process dry in four days, while those dried by the sun take 10 days; but this loss of time is largely compensated by the economy of expenditure. The raisins are not ready for packing immediately after being dried, but have to be kept several days in the stores on the planks on which they are carried.

The raisins that are spoiled or defective are picked out, especially any that are broken or bruised, out of which one drop of moisture would be likely to damage a whole box. This has to be done with exceeding great care. Finally they are classified, which is a task exceedingly difficult, as cultivators and merchants differ greatly in their opinions. The merchants nearly always remodel the boxes packed by the producers. In the demands of foreign countries for Malaga raisins, each has its particular and special requirements for what may be considered first-class fruit.

Although the United States are the principal buyers, they do not purchase the finest quality, almost all the best going to England and France.

For England, the layers are not presented in bunches, but are separated from the stems and pressed very tightly down by the lid of the box, which has the effect of making them in show a very large raisin.

The crop of raisins produced in the Malaga district from the vintage of 1880 and 1881 is estimated at between 2,000,000 and 2,050,000 boxes, not much varying from the previous vintage.

THE USE OF SHARK SKINS.—The skins of certain sharks are used in jewelry for sleeve buttons and the like, and when dried and cured take a polish almost equal to that of stone, and greatly resemble the fossil coral *porites*. The vertebræ of the shark are always in demand for canes. The opening filled with marrow during life is now fitted with a steel or iron rod. The side openings are filled with mother-of-pearl, and when polished the cane is decidedly ornamental. In India, in 1880, $300,000 worth of shark fins were shipped to China for food. In the islands of the Pacific the fish is in great demand for its teeth, which are manufactured into weapons of various kinds, ranging from spears to swords and daggers. The teeth are all serrated or saw-edged, and make terrible wounds. The base of the tooth is bored with some small instrument, and 40 to 50 of them are tied or lashed to a hardwood sword, forming the edge. The hilt is also protected by crosspieces armed in the same way. So effective are these weapons that the natives of these islands wear an armor made of rope especially to protect themselves from the shark's teeth.—*Sea World.*

HIGHT OF THE ATMOSPHERE.—Dr. A. Kerber has estimated the hight of the atmosphere from the phenomena of refraction. By two different methods he obtains hights of 189 and 192.6 kilometers (117.4 and 119.7 miles).—*Wied. Annal.*

Poultry Yard.

Thoroughbred Poultry.

EDITORS PRESS:—It is to be regretted that there are so many among whom the impression seemingly prevails that pure-bred poultry is not any more so, if as profitable, as that of the mongrel class, and that in consequence is not to be indulged in but by those who can afford to keep it without any reference to gain being derived therefrom. No more fallacious notion could be entertained, as the many thousands can testify whose experiences range all the way from the common dunghill, up through the different stages of improvement, to the highest type of our present pure-bred poultry. We have now our non-sitters, and our varieties best adapted where meat is the object, with which, in either line, the old-fashioned fowls are not at all to be compared.

Throughout all periods of the world's history there have been those seemingly content to not only live in the shade of progress, but to hold fast to old-time notions and ideas, to the utter exclusion of anything in the line of advancement, and it is for this class, more particularly, that this article is intended. You may tell them that horses are bred to certain points, in order to accomplish an object—the greatest speed, endurance, strength, or some other valuable quality, and that they are as far ahead of the low-bred scrub as can well be imagined; that the skill of the breeder has developed characteristics in our cows that make them of inestimable value, as compared with our common stock, and perhaps they will concede that a part of this is true, but chickens—oh, that is a different thing! How readily they present the very (to them) exhaustive argument, that a chicken is a chicken, and that is all there is about it. Well, that is all very true; a chicken is a chicken, but in the same sense that a horse is a horse; and no one can fail to see the great contrast between the finely-bred racehorse and the scrub. There is just as great a difference between fowls of our improved varieties and the old-fashioned dunghill, as in the case of the horse, but it is a little less generally noticed, from the fact that the horse ministers to the wants of man in such a capacity as to bring him more under observation.

When improvement is effected, whether in horses, chickens, or other animals, several good things are brought out—beauty, symmetry, fineness and gloss of hair or plumage, greater nerve force, endurance—all these seem to come together in the blooded stock. Ten years ago scrub fowls were vastly more common than at the present time, and although the people of this coast are not yet apace with those in the East and West, it is a matter of congratulation that the past two years have witnessed gigantic strides in poultry culture. The most enterprising farmers have cleared out the stock of their forefathers, and now keep only the improved breeds; others, more conservative, have introduced pure-bred males, which has resulted in improvement in size, health and productiveness. If, then, the addition of a little good blood works such a vast improvement, why will the introduction of all pure blood not improve it still more? Excellence is what we want. How much better it is to have a pure breed of poultry that *excels* in something, as a Jersey cow does in producing rich milk. As to the best breeds, a comparative showing, etc., I shall have something to say in future numbers. L. C. BYCE.

Petaluma, Cal.

Poultry on the Pacific Coast.

Poultry keeping is a healthy and engrossing pursuit; it is an occupation pleasurable as well as profitable; it not only affords amusement and beneficial employment, but well repays for the time and labor spent while engaged in it, and nowhere can poultry be raised so economically and advantageously as on the cheap lands of the Pacific States and Territories. Notwithstanding these facts, this branch of industry has been so sadly neglected, so little cared for, that thousands of people indulge in the illusion that poultry raising is merely a hobby, and an expensive one at that, while other thousands content themselves with mongrels, taking no thought how they may improve their fowls and cause them to render a threefold greater profit for the time and money expended thereon. It is a well-established fact that more money can be made in raising poultry, if of a good quality, and producing eggs on this coast, in proportion to the capital invested and the care required, than in any other branch of farming; yet it is no exaggeration to say, that in California, not one farmer in ten gives this industry the attention its importance deserves.

In the meantime, the daily mercantile reports of San Francisco continue to note the arrival of large consignments of eggs from Salt Lake and the Eastern States. In neither of these places are the conditions and climate so good as in our State. In the East, heavy winters intervene, and large expenditures are necessary for feed and buildings to protect the flocks from the inclement weather. Eastern eggs sell in our markets for several cents less per dozen than California eggs. The cost of transportation and the commission also amounts to quite an item, leaving the producer, at present prices, from 10 to 12 cents per dozen. Now if farmers East can afford to raise eggs at 10 cents per dozen, the farmers of California, where all the advantages rest, can certainly afford to raise them at 20 and 30, and even 40 cents per dozen. Eastern farmers have seen the importance of improving their flocks, and, as a consequence, the breeding of fine fowls there, both for fancy and profit, has attained a high degree of perfection, and it is certainly time the farmers of California should emulate their example by providing a better class of fowls, both for sale in our markets and for egg-producing. Let them bear in mind the fact, that it costs no more to keep good stock than poor, while every advantage is in favor of the former.—*W. Niles' Pacific Coast Poultry Book.*

Horticulture.

Summer Pruning.

EDITORS PRESS:—Now that a large area has been planted in grape vines last season, it may be well to remind owners of such, that it will mature those young vines more quickly to remove all shoots or vines, except the main strongest shoo, tand this, too, by pinching off the top about an inch at one of the buds, throwing the sap into this parent stem which is to be the trunk or standard. Also it is common, even with old vines, to pinch off the top, to allow the berries to swell and improve more. This should always be done with blackberries and raspberry canes, not later than July 10th.

Neglect or Careless Work.

In a recent country visit up the Sacramento valley, and during a trip to Duncan's Mills to enjoy the beautiful scenery, I regretted to see that many orchards, which, if cared for, would be paying, were completely neglected, and worse still, harboring diseases to spread around the locality. In one place I saw cherry and apple trees uncared for and full of worms and immense tents of caterpillars, while evidently nothing was being done to destroy them. As a matter of course they are bound to spread. Likewise, I saw many indications of complete neglect to prune fruit trees, and then rush at them with a saw and hacking off the limbs unmercifully, intrusting the work to parties who have not the first principles of pruning. A great deal of such work has been done, especially last winter, by Chinamen, doing nothing to protect the wound. Where the bark is torn, as is done generally with a coarse saw, the stump ought to be nicely trimmed all round with a knife and then shellac, dissolved in alcohol or the remnant of an old paint pot, put on the wound to keep sun and weather from affecting it, as a tree is, in a manner, as sensitive as a human being. I verily believe the disease so spoken of in San Jose on apples and pears was caused in this way, as, about nine years ago, the trees were pruned, or, better, cut down, as they were giving too much shade for another crop to be cultivated between them, and I noticed shortly after this disease, and it has spread with remarkable rapidity.

It is a mistaken idea—"penny wise, and pound foolish"—not to do full justice to fruit trees, as many now with regret too plainly see. We learn as we live, and often to our own regret. N. J. O'BYRNE.

Apricot Gum Disease.

EDITORS PRESS:—Some time ago I saw an article in the PRESS upon "The Gum Disease on Apricot Trees." I have not read in your paper anything that gave any good reason for the cause or cure of the trouble. Now, I am not very old, and have not been in California very long, and for these reasons I am not the best kind of authority, but what I have seen may help some older head than mine to solve the trouble. I have been where a young apricot orchard was in fine growth; soon after commencing to grow in the spring, the sprouts on the body of the tree were broken or cut off, and shortly after spots of gum came out where the sprouts had been removed. Seeing this, made me look at older trees, and in the main I found that where gum was to be found to any amount, it was due to the bark being broken or cut after the sap had begun to flow, and nature was doing her duty to heal the wound. Moral: Trim your apricot trees in the winter.

I should like to put a word or two into the ears of some California farmers who store their farming tools in nature's barn (all out-doors), and pay very high rents in buying new tools twice too often. Better spend $150 in lumber and a little time to build a good tool shed, than have your tools rust out more than they are worked out. YOUNG READER.

Pasadena, Los Angeles Co., Cal.

A SIMPLE precaution, costing neither money nor labor, is said to increase the durability of posts put in the ground by 50%. This is simply by taking care that the wood is inverted, *i. e.*, placed in the opposite direction to that in which it grew.

PATRONS OF HUSBANDRY.

Correspondence on Grange principles and work and reports of transactions of subordinate Granges are respectfully solicited for this department.

Grange Reunion.

The reunion at Oakland on June 17th, of Temescal, Eden and other Granges, was a pleasant affair. The harvest feast set by the sisters was one of the best and most handsomely decorated that we have yet seen. The seats, as well as the tables, were well filled. Worthy State Master Daniel Flint was present, in answer to duty's call, but suffered severely from headache and a cold, taken while traveling to Walnut Creek Grange some weeks before. His fidelity to the cause in being present on the occasion was remindful of the spirit which made the 17th of June memorable in our national history. The W. M. of Temescal Grange, C. Bagge, presided at the Grange session in the morning, and W. M. Flint at the open session in the afternoon. Bro. Flint spoke repeatedly, gave the Grange interesting and valuable information, but was unable to make an extended speech, which, we are sure, he would have done with great satisfaction to all concerned, had he been in his usual stalwart condition. Patrons were present from Eden, Walnut Creek, Vallejo, Alhambra and Rio Vista Granges. Bros. J. V. Webster, Amos Adams, and many other Patrons made brief speeches, making the occasion one of real interest. After discussing the resolutions favoring the "League of Deliverance," the motion to adopt was largely negatived, the feeling seeming to be decided against taking up "side issues," as it were, in the Grange, however strongly members may sympathize on either side of questions outside of the avowed objects of the association. We hope hereafter to give further interesting information of the meeting.

CONGRESS AND THE TRANSPORTATION QUESTION.—We find in the Washington correspondence of the *Grange Bulletin* the following allusions to this important subject: There seems a slight chance of having something done in the way of regulating inter-State commerce; certainly not all that the people, especially farmers and Patrons, have been hoping for, petitioning for these several years, yet, still, it may be a step in the right direction, and however small the work, or feeble the attempt, be the legislation ever so little, it will firmly establish the principle that has been so persistently combatted by railway-lawyer Representatives and Senators, that Congress *has* the right and power to control the great transportation companies of the country in their conduct of inter-State commerce. They were perfectly willing to have Congress have the power to grant them millions of acres of people's land; perfectly willing to have Congress insure the payment of interest on their bonds, but have been slow to admit the controlling power as a check to extortionate or discriminating rates. The gleam of light is that the House Committee on Commerce has decided to recommend the passage of Mr. Townsend's bill to establish a Board of Commissioners of Inter-State Commerce as a bureau of the Interior Department.

GRANGE ENTERTAINMENT.—The reunion held under the auspices of Yuba City Grange on Friday last was the most successful ever held by the Grange in this city. The meeting was characterized by the greetings of friends and neighbors, and was rendered especially interesting by the presence of numerous visitors. Especially were the Granges at North Buttes, Live Oak and Wheatland well represented. During the first part of the day, the Grange work was exemplified and degrees conferred, but later on a refreshment table, loaded with the delicacies our farmers' wives know so well how to prepare, was spread, and after this followed several interesting and entertaining addresses. Dr. Durst, of Wheatland, and Hon. D. A. Ostrom, of Reed's station, being among the speakers. The day passed only too quickly, as such days will, and all left the scene of pleasure, when the shades of night began to lower, with hearts filled with pleasant memories of the joyous reunion. *Yuba City Farmer.*

WHAT IS NEEDED IN CONGRESS. The efforts made to defeat a favorable report on the Reagan bill by the Committee on Inter-State Commerce clearly shows the powerful efforts that will be brought to bear to defeat the passage of any bill that will strike at the assumed authority exercised by corporations. The power of the railroad lobby, hanging on the skirts of Congress like barnacles, with millions of dollars in ready money at their command to use in securing influence and votes to defeat the bill, leaves the hope for relief very doubtful, until the farmers elect a Congress familiar with the true interests of agriculture, commerce and railroads, and with sufficient integrity to dare to deal with this question upon the principle of justice to all interested, and who cannot be swerved by lobbyists, nor by the temptations of money. *H. Eshbaugh, Lecturer National Grange.*

PRICE OF WHEAT IN THE SAN FRANCISCO MARKET.

FOR 11 YEARS JUNE, 1871, TO JUNE, 1882.

The following table, compiled with much care by A. MONTPELLIER, Manager of the Grangers' Bank, shows the fluctuations of prices in the S. F. Wheat Market, according to the monthly average quotations for good Shipping Wheat

MONTHS.		1864-65	1865-66	1866-67	1867-68	1868-69	1869-70	1870-71	1871-72	1872-73	1873-74	1874-75	1875-76	1876-77	1877-78	1878-79	1879-80	1880-81	1881-82
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
June.	Highest	3 05	1 75	1 [illegible]	1 90	2 05	1 80	1 57½	2 50	1 95	1 87½	1 85	1 72½	1 65	2 45	1 75	1 72½	1 62½	1 42½
	Lowest	2 60	1 60	1 [illegible]	1 67	1 40	1 55	1 60	2 25	1 10	1 70	1 65	1 65	1 52½	2 12½	1 62½	1 55	1 45	1 35
	Average	2 82	1 72	1 [illegible]	1 78	1 67	1 67½	1 81	2 37	1 77	1 78½	1 75	1 68½	1 58½	2 28½	1 68½	1 64½	1 53½	1 38½
July.	Highest	3 52	1 90	1 55	1 82½	2 02½	1 82½	1 95	2 55	1 65	1 92	1 70	2 15	1 52½	2 37½	1 70	1 77½	1 57½	1 42½
	Lowest	3 15	1 70	1 [illegible]	1 70	1 80	1 67	1 80	2 20	1 52½	1 70	1 60	1 72½	1 45	2 15	1 62½	1 57½	1 42	1 30
	Average	3 34	1 80	1 51	1 76	1 91	1 75	1 88	2 28½	1 58	1 81½	1 65	1 93	1 48½	2 26½	1 66½	1 67½	1 50	1 36½
Aug.	Highest	3 55	1 85	1 50	2 00	2 05	1 80	1 90	2 42½	1 62½	2 30	1 65	2 32½	1 52	2 30	1 75	1 75	1 55	1 70
	Lowest	2 55	1 70	1 42	1 82	1 82	1 65	1 77½	2 30	1 50	1 92	1 52	2 15	1 45	2 15	1 65	1 60	1 35	1 37½
	Average	2 90	1 77	1 46½	1 91	1 93	1 72½	1 84½	2 36	1 56	2 11½	1 58	2 25½	1 48½	2 22½	1 70	1 67½	1 45	1 53½
Sept.	Highest	3 85	2 00	1 55	2 40	2 00	1 77½	1 92½	2 67	1 62	2 32½	1 55	2 15	1 55	2 36½	1 77½	1 87½	1 40	1 70
	Lowest	3 50	1 85	1 45	2 05	1 85	1 62½	1 82½	2 40	1 55	2 20	1 50	2 00	1 50	2 25	1 67½	1 62½	1 27	1 62½
	Average	3 67	1 92	1 45	2 22	1 92½	1 70	1 87	2 53	1 58	2 26	1 52½	2 07	1 52½	2 31½	1 72½	1 75	1 33½	1 66½
Oct.	Highest	4 37	2 12½	1 87	2 52	2 02½	1 75	2 10	2 80	1 72½	2 35	1 60	2 05	1 70	2 40	1 75	2 10	1 50	1 72½
	Lowest	3 85	2 00	1 55	2 37	1 90	1 60	1 92	2 67	1 62½	2 27	1 52½	2 00	1 55	2 25	1 67½	1 82½	1 40	1 62½
	Average	4 11½	2 06½	1 71	2 45	1 96½	1 67	2 01	2 73	1 67½	2 31	1 56½	2 02½	1 63½	2 32½	1 71½	1 96½	1 45	1 67½
Nov.	Highest	4 37½	2 15	1 [illegible]	2 52½	1 95	1 65	2 20	2 82½	1 77½	2 30	1 57	2 00	2 00	2 37½	1 75	2 15	1 57½	1 75
	Lowest	3 50	2 00	1 72½	2 47½	1 80	1 60	2 02½	2 70	1 65	2 22½	1 50	1 87	1 75	2 22½	1 65	1 92½	1 45	1 67½
	Average	3 93½	2 07	1 83½	2 50	1 87½	1 62½	2 11½	2 76½	1 71½	2 26	1 53	1 93	0 87	2 30	1 70	2 03½	1 51½	1 71½
Dec.	Highest	4 25	2 25	1 95	2 75	2 10	1 70	2 32½	2 75	1 97	2 32½	1 57½	1 97	2 25	2 42½	1 75	2 10	1 50	1 70
	Lowest	3 50	2 15	1 82½	2 47½	1 97½	1 62½	2 10	2 10	1 80	2 22½	1 52½	1 90	2 02½	2 30	1 65	1 95½	1 40	1 60
	Average	3 87	2 20	1 88	2 61	2 03	1 66	2 21½	2 67½	1 88½	2 27½	1 55	1 93	2 14½	2 36½	1 70	2 02½	1 45	1 65
Jan.	Highest	4 75	2 20	1 85	2 95	2 1[illegible]	1 75	2 45	2 [illegible]	2 05	2 12½	1 65	1 97½	2 25	2 35	1 72½	2 05	1 47½	1 70
	Lowest	4 25	1 90	1 72½	2 70	1 97	1 50	2 [illegible]	1 [illegible]	1 90	2 00	1 55	1 90	2 10	2 10	1 65	1 85	1 25	1 60
	Average	4 50	2 25	1 78	2 82	2 05	1 72½	2 35	2 35	1 97	2 06½	1 60	1 93½	2 17½	2 22½	1 68½	1 95	1 36½	1 65
Feb.	Highest	5 00	2 40	1 82½	2 95	1 97½	1 75	2 42½	2 30	1 92	2 10	1 65	1 95	2 10	2 12½	1 72½	2 00	1 55	1 70
	Lowest	4 75	2 20	1 67½	2 82½	1 75	1 65	2 30	2 00	1 80	1 92½	1 55	1 85	1 97½	1 95	1 62½	1 82½	1 27½	1 57½
	Average	4 87½	2 30	1 75	2 88	1 86	1 70	2 36½	2 15	1 86½	2 01	1 60	1 90	2 03½	2 03½	1 67½	1 91½	1 31½	1 63½
Mar.	Highest	5 00	2 20	1 87½	3 05	1 75	1 72½	2 52½	2 10	1 87½	2 00	1 70	1 97½	2 15	2 00	1 70	1 97½	1 40	1 67½
	Lowest	5 00	1 95	1 70	2 55	1 67½	1 62½	2 37½	1 92½	1 77½	1 90	1 57½	1 90	1 87½	2 05	1 90	1 60	1 27½	1 57½
	Average	5 00	2 07½	1 78½	2 80	1 71½	1 67½	2 45	2 01½	1 82½	1 95	1 63½	1 92½	2 10	1 95	1 65	1 92½	1 32½	1 62½
April	Highest	5 00	1 95	2 15	2 75½	1 67½	1 75	2 00	1 97½	1 85½	1 95	1 75	1 92½	2 50	2 05	1 65	1 87½	1 42½	1 65
	Lowest	4 77	1 70	2 00	2 15	1 57½	1 62½	2 35	1 87½	1 80	1 85	1 67½	1 82½	2 15	1 90	1 57½	1 52	1 30	1 37½
	Average	4 88	1 83	2 07	2 45	1 62½	1 68½	2 17½	1 92½	1 83½	1 90	1 71½	1 87½	2 32½	1 97½	1 61½	1 70	1 36½	1 61½
May.	Highest	4 75	1 75	2 05	2 20	1 60	1 77½	2 10	1 97½	1 90	1 95	1 77½	1 77	2 00	2 00	1 67½	1 65	1 42½	1 70
	Lowest	4 62½	1 62½	1 87½	2 07	1 55	1 65	2 52½	1 90	1 85	1 80	1 70	1 67½	2 45	1 82½	1 57½	1 50	1 32½	1 62½
	Average	4 68	1 68½	1 96	2 13	1 57½	1 71½	2 81½	1 93½	1 87½	1 87½	1 73½	1 72½	2 72½	1 91½	1 62½	1 57½	1 37	1 66½

PRICES OF WHEAT BAGS IN SAN FRANCISCO MARKET

FROM JANUARY, 1872, TO JUNE, 1882.

The following valuable table, showing the fluctuation in price of Wheat Bags in this market during the last 10 years, has been compiled by A. MONTPELLIER, Manager of the Grangers' Bank.

MONTHS.		1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882
		Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
January	Highest	15	15	14	12	11	9½	9½	9	10½	9½	9
	Lowest	13	13½	13½	11½	10	9	9½	8½	10	9	8½
	Average	13½	15	13	11½	10½	9½	9½	8½	10½	9½	8½
February	Highest	16	16	14	12	11	9	10½	9½	10½	9	9
	Lowest	15	15	13	11½	10½	9	10½	9	9½	8	8½
	Average	15	15½	13½	11½	10½	9½	10½	9½	10½	9	8½
March	Highest	17	16	14	11½	12½	9½	10½	9½	10½	8½	9½
	Lowest	16	16	15	11½	11	9	10½	9	9½	8½	8½
	Average	16½	16½	13½	11½	11½	9½	10½	9½	10½	8½	9
April	Highest	18	16	14	12	12½	9	11½	9½	11½	8½	9½
	Lowest	17½	14	13½	11½	12	8½	11	9½	10½	8½	9½
	Average	17½	15½	13½	11½	12½	8½	11½	9½	10½	8½	9½
May	Highest	18	16	13½	11½	13½	9½	11½	9½	11½	8½	9
	Lowest	17½	15	12½	10½	12	9	11½	9½	11	8	8½
	Average	17½	15½	13	11½	13	8½	11½	9½	11½	8½	8½
June	Highest	18	15	14½	11	13½	10½	11½	9½	11	10½	9½
	Lowest	17½	12	14	10½	13½	9½	11	8½	9	8	8½
	Average	17½	13	14½	10½	13½	9½	11½	8½	10	9½	9
July	Highest	17½	15	14½	11	13½	12½	12½	11	10½	10½	
	Lowest	16	14½	14	10	13	9½	10	8½	9½	9	
	Average	16½	14½	14½	10½	13½	11½	11½	9½	10½	9½	
August	Highest	19½	15	14	9½	12½	12½	13½	11½	11½	9½	
	Lowest	14½	12½	13½	9½	12	11½	12½	8½	9½	7½	
	Average	17	14½	13½	9½	12½	12	12½	9½	10½	8½	
September	Highest	20	13	13½	10	12½	12½	14½	11½	10	9	
	Lowest	15	12½	12	9½	12	10	13½	8½	8½	8	
	Average	17½	12½	12½	9½	12½	11½	14	10	9½	8½	
October	Highest	16	12½	13	10	12½	12½	14½	12	9	9	
	Lowest	15½	12½	12	9½	11	9½	14½	10½	8½	8½	
	Average	15	12½	12½	9½	11½	10½	14½	11½	8½	8½	
November	Highest	17½	16	12½	10	12	9½	10	12	9	9	
	Lowest	15½	12½	12	9	9½	9	8½	10	8½	8½	
	Average	16½	14	12½	9½	10	9½	9½	11	8½	8½	
December	Highest	15½	13	12	10	10½	9½	9½	10½	9½	9	
	Lowest	15½	13	11½	9	9½	9	8½	10½	9	8½	
	Average	15½	13	11½	9½	10½	9½	9	10½	9½	8½	

THE National Grange, at its last meeting, said: The future hope of the Order is in the education of that class whose labor produces the wealth of our country, and to the great mass of toilers the weekly emanations of the press are almost the only means available. Let us see to it that the National Grange takes the initiative—that sounds the key-note—that watches closely the progress of the contest, and stands ready to strengthen the line wherever and whenever there are signs of weakness; that the outposts be kept constantly in a state of defense; that the officers be instructed, and rank and file encouraged, and when orders go out from this, the headquarters of the grand army of progress, let the Executive Committee see to it that the order passes promptly all down the line, that as one man we may plant ourselves upon the God-given rights of freemen, and with intelligent understanding of them, that we may yet, through the Grange press, battle manfully for the right.

ONE of the most pleasant and profitable gatherings that ever convenes is the gathering together of the farmers, with their wives, their sons and their daughters to consult together over business arrangements, and to cultivate the social amenities of life. Such a meeting is always harmonious and beneficial. No matter how different may be the opinions on points of business arrangements, the discussions, though completely and fully sustained on the different points, are always carried on in a spirit of harmony and concession, and ultimately lead to the adoption of measures that are satisfactory to all. These results can be directly traced to the influence of women, who are given an equal right in all of the proceedings, and whose presence wields a harmonizing sway over the hasty-speaking men, and holds them to an even and temperate use of language and a closer application to business, thus giving a solidity and perpetuity to these gatherings.—*Farmers' Friend.*

Total Consumption of Grain Bags in California, etc., for the Last 11 Years, and Value of Same.

Years	Number of Bags Used Each Year.	Av Price per Yr.	Total Value per Year.
1871	5,400,000	12½	$681,750
1872	12,600,000	16½	2,062,500
1873	10,328,000	14½	1,497,560
1874	15,050,000	13½	1,994,125
1875	13,500,000	10½	1,462,000
1876	19,623,000	11½	2,330,290
1877	12,376,260	10	1,237,620
1878	22,000,000	11½	2,475,000
1879	21,017,000	9½	2,075,428
1880	34,111,500	10½	3,539,068
1881	31,000,000	8½	2,673,750
Total for 11 Years	197,005,700		$22,029,091

THE *Tokio* brought to this port 1,072 more Chinese this week.

Haywards in Trade and Pleasure.

EDITORS PRESS:—But few persons are aware of the wealth and importance of the beautiful little town of Haywards as a fruit-shipping point. Last year she rated second in amount of fruit shipped, Elmira being the first. And from present indications she will more than treble any former year's shipment, by the enormous increase of orchards coming into bearing, and the very large crops of old orchards.

Nestled away as she is in her quiet little nook in the low hills surrounding her, with the rich and lovely little Castro valley in the rear, she is embowered in green shade, like a beautiful bird in her half-concealed, shady nest. She is apparently asleep, but is alive to her own interests, and active when necessary. She has no gifted writer to extol her beauties, riches and salubrious climate; no large property holder anxious to sell, to point out her many advantages by long and expensive newspaper advertisements, showing, beyond dispute, that there are millions in it.

While we have but little valuable property offered for sale, we dare not tell half the truth about the wonderful productions of our orchards, lest we be accused of exaggeration. We have frequently been censured by newspapers and writers for telling less than the truth, as such statements have a tendency to mislead and induce inexperienced and impracticable people to embark in a business that would end in loss or ultimate failure. But I look on those matters in a different light. A practical man wants to know the possibilities as well as the failures. We all know enough of them in all branches of business, so that in fruit raising failures are not an exception.

So, again, at the risk of being called an exaggerator, I will tell another big story of the wonderful productiveness of our orchards. I have, as you know, an old orchard of apple, cherry and almond trees loaded with their fruits so heavily that the limbs are bent almost to the ground with their load, under which I have a small patch of gooseberries of the Houghton Seedling variety. There are 665 bushes planted four feet by six feet apart, consequently a little over one-third of an acre (there being 1,815 plants to the acre at that distance). Many of my bushes are reduced in size and enfeebled by borers in the stalk; many of them not more than half their original size. Notwithstanding this, I have just finished shipping 7,534 lbs. of berries from them—within a fraction of 11½ lbs. to the bush; 1,815 multiplied by 11½ lbs. gives us the enormous product of 20,570 lbs., or a little over 10¼ tons, per acre, which, at 4½ cents, (less than the average realized) would give us $925.30 per acre. And yet there are thousands of acres of this land being annually sown to grain, that, under the most favorable circumstances of yield and price, will not pay over $40 to $45 per acre.

But our orchard area is being increased by the hundreds of acres every year. In proof of this, for the past four years we thought we were doing wonders, sending off from two to four carloads of fruit a day during the fruit season. But this year we will surprise ourselves, as we started off a week or ten days ago with eight carloads a day, and yesterday (Sunday, the 18th) our active and competent agent dispatched nine cars loaded with fruit, five to San Francisco and one each to Oakland, Sacramento, Stockton and San Jose, and thus far we have shipped no fruit except cherries, currants and gooseberries. So you can readily imagine what kind of a train we will require when our apricots, plums and peaches are ready for shipping.

San Francisco may well be proud of Haywards, the brightest jewel in her crown of suburbs. If we have not got the aristocracy and their palaces to attract the seekers after pleasure and luxury in cheerless winter days and nights, we have our cherry orchards, heavily laden with their luscious fruit, in the bright and balmy days of May and June, which the seekers after pleasure and luxury seem to enjoy so well. We are in doubt which they enjoy the most—the pleasant drive, the smooth roads, the balmy air, our pleasant hospitality, or our cherries. There is one consolation in thinking that if we long in vain for their pleasant company in the long, cheerless winter evenings, we get more than even in cherry season. This is not intended as an advertising puff for Haywards, as we have no land for sale and expect no chromo.

WM. H. JESSUP.

Haywards, June 19, 1882.

OFF Newfoundland, on Monday, the American schooner *Massasoit*, under full sail, crashed into an immense iceberg, and sunk almost immediately. Five or six of her crew went down with the vessel.

AGRICULTURAL NOTES.

CALIFORNIA.

KERN.

DAIRY ENTERPRISE.—*Californian*, June 7: Messrs Haggin & Carr are fast getting their extensive dairy on the northern prolongation of L street in order. Since the original brick building was erected, many improvements—all that experience and ingenuity could suggest—have been added to it, and more are still to be made. An immense tank, to hold 30,000 gallons, is now being erected, to supply water for the building and grounds. Water will be raised into it by a hydraulic ram of great size. But water for irrigation on the high grounds around the building will be principally supplied from the Kern Island canal, from which it will be brought in a pipe. The location is one of great natural beauty, breezy and healthful, and the utmost will be done to improve it, in the way of trees, flowers and grass. The arrangements of the dairy have been principally made under the directions of Mr. Samuel Cole, a noted dairyman of Gilroy. He has introduced into it all the latest inventions and improvements, among which are Woolsey's steam heaters and vats. This establishment, when in full operation, will give employment, directly and indirectly, to 30 or 40 men. Like all extensive undertakings, it will yet take a long time before it is in full operation and working smoothly. But when that time arrives, it will be surpassed in its facilities and the completeness of all its appointments by no dairy in the State. There are several other dairies on a small scale in this vicinity. It is a branch of agricultural industry naturally suggested by the wonderful productiveness of our alfalfa pastures and the surprising growth of those root crops which constitute such valuable food for dairy cows.

LOS ANGELES.

DEATH OF THE S. C. H. S.—*Times*: The Directors of the Southern California Horticultural Society held their final meeting at the office of the Secretary, Nos. 9 and 10 Baker block, yesterday. Present: Directors R. M. Widney, H. J. Crow, A. H. Denker, Charles Coleman, Jr. Recognizing the fact that the society was dead beyond redemption, the Directors proceeded to do what seemed to be their duty under the circumstances—namely, to close up the affairs of the society. All bills against the society—save about 20 silver medals due as premiums awarded at the Horticultural fair last September and the Citrus fair of March, 1881—were audited and ordered paid. These bills more than absorbed all of the funds of the society; otherwise the medals would have been ordered. After a brief discussion of various matters, the President, Secretary and Directors all tendered their resignations, which were accepted, and the Board adjourned *sine die*. Thus passes to rest a society which started out under the most promising auspices, and after a varied career of five years gave up the ghost. As regards its usefulness, its fairs and its history in general, comment would be out of taste, for the reason that public opinion is widely at variance regarding it. We accept the inevitable because we are obliged to, but we still have faith in our city to the extent that with each succeeding year matters will so shape themselves that Los Angeles will have a grand Horticultural fair.

FRUIT PRICES.—Anaheim *Gazette*, June 17: The purchasing agent of the Los Angeles cannery was in Anaheim on Tuesday, and contracted for a large quantity of fruit at the following prices: Apricots, 2½ cents per pound; peaches, 1¼ cents; white figs, two cents; blackberries, 3½ cents. The company furnishes crates, and the growers pick the fruit, pack it in the crates and deliver them at the railroad depot.

HONEY PROSPECT.—Mr. N. Levering, editor of the *California Apiculturist* for June, thus refers to the present outlook: The season, as we have heretofore stated, will be late, in consequence of the late rains. In our locality, as in many others, the sages, wild alfalfa and other leading honey plants, are now beginning to bloom, and the bees have commenced storing honey. We are informed that in other localities bees have not commenced to swarm, which may be attributed to their weak condition, and that some apiarists are discouraged and are rendering their surplus comb into wax. In our own apiary our bees are storing honey well, considering the season, which we fear will fall short of our previous expectations.

MERCED.

PROSPECTS.—*Express:* The grain on the sandy land north of Merced and this side of the river will yield more than an average crop this harvest. Mr. M. D. Atwater has 3,000 acres which he says will turn out better this year than last; in short, 3,000 acres of as good grain as can be found on any upland in the country. The upland on the old McSwain ranch has a fine stand of wheat, full and plump, almost ready for the machine. Jack Fowler, who is farming the place, says the crop is better than last year. There are thousands of acres between this place and the Merced river which will yield more than an average crop. It has been reported all over the country, that the crops about Plainsburg were a total failure—that nothing whatever would be realized for the labor expended. Mr. Burchell, a gentleman who resides near Plainsburg, and is well posted on the situation, reports that some fields which were given up as worthless will turn out something; and seed and abundance of feed will be realized.

SAN DIEGO.

A WELL-STOCKED ORCHARD.—*Sun:* We lately visited the Cajon valley ranch of G. A. Cowles. There are 350 acres of his home place in fruits and vines, 175 acres being utilized as a raisin vineyard. He would plant this entire farm in fruits and vines if he were satisfied a sufficient help could be secured to gather the crop. This appears to be the great desideratum. On this ranch are 300 acres of wheat which promises well. In his orchards he has 500 apple trees altogether, comprising 26 varieties; 27 varieties of grapes, 1,000 pear trees, 16 varieties, mostly Bartletts, which he considers the best; 17 varieties of peaches, 350 olive trees, among which the celebrated "Queen" predominates, and is considered by him to be the best variety. There are also 350 Japanese persimmons. The imported varieties do well, but the domestic are generally a failure on account of the frost. There are seven varieties of pomegranates, two of which were imported from France. He has a number of cherry trees in fine bearing order. The "May Dukes," the English standard tree, he regards the most suitable for this climate. He has nine varieties of figs, with not less than five trees to each variety. In fact, there may be found on this place any variety of fruit which can be profitably grown on the coast. In addition to fruits, he has growing in perfection, English walnuts, pecans, filberts, etc. There are 10 acres of English walnuts. The other nut trees are merely experimental. In fact, he says his entire present orchard of tree fruits is grown to demonstrate what variety is the best.

SAN JOAQUIN.

NEW HOPE.—*Independent*, June 16: In the New Hope reclamation district the farmers will have an immense grain yield this season, if no untoward event happens. About 10,000 acres of grain additional to the acreage harvested last year will produce abundant crops. There are but a few acres which have been injured by the hot winds which did such mischief a few weeks ago, and these lie on the high ridges. The average is excellent. On many fields the wheat will yield all that wheat can. One piece of 80 acres will probably yield 80 bushels per acre, and the whole grain field may be counted good for 40 bushels per acre. This is the first crop these farmers have obtained from the tule lands, the water last year having destroyed their crops. Hundreds of acres have been planted to potatoes and other vegetables, and still the work of planting is being pushed as fast as the water recedes. Fields of wheat, good for 40 to 60 bushels per acre, now occupy the land which, one year ago, was covered with a heavy growth of tules. The farmers in the New Hope district will "make a killing" this year, and get even on former losses. The finest wheat and barley ever harvested in the State will be gathered from the reclaimed lands of this district this season.

SAN BERNARDINO.

THE NEW CANNERY.—Riverside *Press*, June 17: Work is being pushed vigorously at the new cannery now being built in Riverside by the Riverside Fruit Co. The superintendent, who has had years of experience, both on this coast and in the East, has been instructed to make this establishment as complete as possible, and he has followed his instructions. He pronounces it the most complete of any cannery in southern California, and equal to any in the State in all its appointments. The building is 96 ft. square, and is subdivided into different departments by swing partitions. Already the tinners have a large stock of cans on hand, and are manufacturing at the rate of 3,000 per day. Everything will be in readiness for the reception of fruit as soon as the crop begins to ripen, and it is thought that work will be commenced on a small scale as early as the 26th inst., although but little will be done, probably, until after the Fourth of July. James Bettner, President of the company, and B. D. Burt, the manager, are giving their personal attention to the business, and we are assured that everything possible will be done to establish a reputation for quality for all goods put up by this company, as well as all fruits handled.

SANTA CLARA.

FRUIT OUTLOOK.—*Herald*, June 19: The cherry crop which is being gathered is probably the largest ever grown in this vicinity, and prices have been lower than heretofore. Black Tartarians sell at the factories for four cents, and the white varieties bring five and six cents per pound. The apricot crop will probably be no larger in this valley than last year, although there are more orchards in bearing. But the heavy late frosts thinned out the fruit in some exposed localities. The crop has not all been sold yet, but several sales have been made at four cents. The fruit will be very fine and large.

TULARE.

ARTESIAN WELL.—*Delta*, June 16: More than an average flow of water was secured in the artesian well on J. M. Creighton's ranch on Elk Bayou Saturday last, and the tools were put in operation again near the house. The Russell well, on the adjoining ranch, still attracts many visitors, and a well-worn road across the plowed ground has been worn by their continued going and coming. The Creighton well, it is believed, will be of about the same capacity. As yet it continues to throw up sand and pieces of clay, and its measurement has not been ascertained. It is probable that Mr. Mull, who has several outfits and gangs of men to work them, will keep one of them employed on the adjoining ranches till nearly every place has been tested. The Russell well was 334 feet deep; the Creighton well, about a mile southwest of it, struck a flow at 306 feet; and probably on the adjoining ranches of E. M. Dewey and Henry Perkins, on the south, it would be considerably less. The cost of the Creighton well was $485, and others to the south will probably be much reduced. The increase of power in the wells, as well as the reduction of cost, seem to have taken the same direction. The few remaining tracts of railroad lands in the vicinity have suddenly been scooped up. The lands in this vicinity seem hitherto to have attracted little attention, but the large yield of grain on Creighton's ranch last year has doubtless led to more or less sales and a large acreage of summer-fallow. The development of such powerful wells will render cultivators independent of river water rights, as they give water when the rivers fail. Their importance can scarcely be overestimated. The natural richness of the soil, combined with an independent and never-failing supply of water, cannot fail to render them attractive to settlers, and soon make the artesian well belt a garden spot of great beauty. The continued boring of wells southward and eastward, if successful, will open up a vast section of rich lands which have hitherto been held of nominal value, and will for a time prevent any great inflation in values. It will also rapidly fill that section of the county with population and wealth.

VENTURA.

PROSPECT.—*Free Press*, June 17: For nearly four weeks past, the weather has been all that could be desired, so far as the growing crops are concerned. Many fields of wheat and barley, which, on the 10th of May, did not promise to pay for cutting even for hay, have since recuperated to such an extent that they will yield from one-half to three-quarters of a full crop. Both the Ojai valleys will give an average yield of wheat, and the potrero portion of the Conejo valley promises even better crops than usual. On most of the Colonia, also, the small grain crops will be fair. In fact, whatever failure of grain crops there is, seems mostly confined to the strip lying west of the Santa Clara river, from above Saticoy down to the ocean. Still, even in this section, fogs at night and clouds in the day are making a splendid crop of corn and beans.

YUBA.

HARVEST NOTES.—Sutter County *Farmer:* George Summy and A. Skellenger commenced hauling new barley to the Buckeye mills on Monday. W. E. Humphrey commenced heading wheat on Wednesday. Supervisor Davis commenced heading wheat on Monday, and reports that it is turning out well. The Britton boys commenced thrashing barley at C. C. Mason's last Monday, and expected to commence thrashing barley at Henry Neison's on Wednesday. Jas. E. Plasket commenced heading his Sonora wheat on the 7th. It looks well. Steve Fortna will commence thrashing barley for J. C. Gray on Monday. Sheriff Harkey commenced heading and thrashing barley yesterday. From Live Oak and Pennington we learn that barley heading is well advanced, and it is thought that wheat heading will commence quite generally the first of next week. Daniel O'Banion, Sr., informs us that the shop at Harkey's Corners is just overrun with headers, etc., and that heading will commence on Monday.

YOLO.

CROPS.—*Democrat*, June 15: The south damp winds seem to be trying to repair the damages to the crops which a want of moisture and the north winds have caused. It is now too late to add much to the growth of grain straw, or to lengthen the ears or heads of wheat. But much good is yet possible, by causing the grains to fill out strong and plump. It is truly wonderful what recuperating powers these south winds have, and it is to be hoped the grain may have the full benefit of them in their best form.

Heald's New Foundry at Crockett.

The new foundry and shops of I. L. Heald, formerly of Vallejo, are located at Crockett, on the C. P. R. R., one mile beyond Vallejo junction, and adjacent to Valona station, three miles south of Port Costa, where morning and evening trains stop, both from and to San Francisco.

The main building is very commodious. It is 300 ft. in length, and 100 ft. in width, and is well lighted and ventilated. It is situated on the straits of Carquinez. The connecting wharf is 300 ft. by 40 ft.

Mr. Heald manufactures here his patent portable straw-burning engines. They are claimed to be the safest and most powerful engines of this description, and they will do more work with less consumption of water and fuel than any other engine in the market. Two sizes are made, either of which will run the largest separator. All the latest improvements have been added to the boiler and engine.

Heald's Barley Mills are another specialty at these works. They will thrash and grind at the same time all the separator can thrash.

Grape crushers (three sizes), grape elevators, hydraulic presses for grapes, portable engines for thrashing (three sizes), engines, boilers and shafting for wine warehouses and distilleries are among the manufactures at this foundry. Over 50 men are at present employed, and that number will be considerably increased shortly.

News in Brief.

MRS. DUNMIRE, Guiteau's divorced wife, denies seeking a pardon for Guiteau.

JOHN SCOTT RUSSEL, the naval architect, builder of the *Great Eastern*, is dead.

THE Interior Department wants $245,000 to complete the work of the tenth census.

THE Ocean House, a well known San Francisco pleasure resort, was burned this week.

KING KALAKAUA has ordered a lot of regal gimcrackery in the shape of thrones, etc., to be manufactured at Boston.

GEORGIA has more peaches than can be got to market green, and there is a call for canning and drying establishments.

THE Iowa cyclone did immense damage. In Henry county alone the damage will be $500,000. Over 100 lives were lost.

J. F. REDDING, while digging a well in east Los Angeles the other day, struck a bed of rock salt at a depth of 22 ft. The find is considered valuable.

THE very latest thing in mutual protection associations is a rag-pickers' union at St. Louis, organized to fight a law imposing a license fee on gutter-fishing.

THE number of bills and joint resolutions introduced in the House and Senate this session are now 9,000, and will probably reach 10,000 before adjournment.

THE new iron steamship *San Jose* left Roach's shipyard Saturday afternoon for New York, to take her place on the line of the Pacific Mail Steamship Company.

VESSELS of 1,000 tons will soon be steaming through the Welland canal. The work of enlargement was begun 10 years ago, and Canada has expended $13,000,000 up to date.

AMERICAN agricultural implement makers have been officially invited to open a special correspondence with a certain portion of Russia, with the idea of introducing our agricultural machinery there.

CHIEF OFFICER WATTS, of the American ship *Imperial*, from San Francisco, was arrested on his arrival at Queenstown, charged with wounding, with intent to kill, several of the crew of the American ship *Gatherer* on her recent voyage.

PARIS journals declare that the Powers have accorded the Porte a further delay for consideration of the proposition to hold a conference. Spain asks to be permitted to participate in the proposed conference, and France raises no objection.

AMOS BALDWIN, of Calistoga, bought a claim in El Dorado county for $200, and worked there till his money gave out, without success. But recently he and his partner found pockets in the ledge from which they have already taken $24,000.

MOST of the officers and crew of the Arctic relief ship *Rodgers* have arrived at Sitka. The ship was burned. Master C. F. Putnam was caught on an ice floe, and carried out to sea and lost. The *Rodgers* party was rescued by the steam whaler *North Star*.

MEILING, of the German navy, arrested for having accepted a bribe to reveal to the Russian government the plans for the defense of the German coast, had supplied the Russians with the most complete copies of plans concerning the torpedoes and submarine mines.

IT is stated that the German government regards the small majority on the resolution adopted in the Reichstag, declaring inadmissible any further measure burdening the tobacco trade, as an indication that the refusal of the Reichstag to accept the tobacco monopoly would not be permanent.

THE Oregon salmon packed to June 1st was 136,000 cases, about 330 lighter than last year up to that date. The number caught was up to the average, but a considerable proportion were small. The opinion prevails among cannery men that last year's pack, 550,000 cases, will nearly be reached this season. Eleven deaths by drowning among fishermen are reported to date.

S. R. DE LONG, Engineer of the Tucson and Gulf of California railroad, and his surveyors, returned, having completed the location of the line from Tucson to Port Lobes, on the gulf. The distance to tide water is 200 miles. In no place is the grade over 70 ft. to the mile. The average is but 30 ft. The entire route is over plains, and passes near and through a vast region of rich mineral country.

THE impression prevails that the Chinese government does not intend to accept the action of our Government in reference to the exclusion of her subjects for the next 10 years without an emphatic protest. It is already known that that government regards the provisions recently passed as a direct violation of the treaty existing between the two nations. While a protest will undoubtedly be made, it is not believed in official circles that China will go to the extent of abrogating the treaty, but will, after expressing forcibly the belief that the treaty has been violated, quietly accept the situation.

A MICRO-TELEPHONE has been used with success in discovering underground water-courses in the Tyrol. By the way, may not those persons who used "divining rods" to discover where wells could be dug have been possessed of an unusually sensitive power of hearing, which enabled them to detect the gurgling of water deep down in the earth, and simply employed a willow wand as a "blind."—*Invention.*

To F. F. on his Birthday.

"We live in deeds not years," the poet said,
Oh, comrade mine,
If this be so, and thy good deeds were weighed,
What age is thine?

With old Methusaleh's, thy days compare,
If of kind thought,
And generous sacrifice and patient care
Long life be wrought.

But, if we measure youth by warmth of heart,
By guileless joy,
By dauntless faith and hope, how young thou art,
My grey-beard boy!

Who talks of birthdays? Like an oft heard chime
We'll let them pass;
No years touch the immortal: Father Time,
Put up thy glass.

MRS. M. H. FIELD.

San Jose, Cal.

Pamela's Faculty.

They talked over Deacon Semple's death in the sewing circle. It was very sad that he should have died. So suddenly, too, of pneumonia, poor man. But Mrs. Calkins, at whose house the society met that week, could not help thinking that it would have been a very dull meeting if he had not; for since everybody had found out just why Luke Judkins had been obliged to mortgage his farm, and Dr. Saunders' marriage with his housekeeper had become an old story, there was absolutely nothing to talk about. It was also providential that he should die just after planting was over and before haying had begun. He was growing very deaf, too, and was always shiftless. Being a deacon, of course he was prepared, and there was really not much to mourn for, except that now Pamely would have to take care of herself, and Pamely had no faculty. Ruthy Ann could go on keeping school, as she had done for years, and the twins, luckily, were married. Pamely was the only one that was left unprovided for. Pamely was one of the kind that always was unprovided for—the kind that had no faculty.

The farm was all run out; and if it were not, Pamely wouldn't know any better than to expect to raise pumpkins on a pea vine. If she was a farmer's daughter, she didn't know but what potatoes came up of their own accord, and weeded and dug themselves. Mrs. Ichabod Badger (generally known as Mis' Ichabod) thought it probable that she even supposed that they washed themselves and jumped into the dinner pot. And it was evident that she set a sight more by posies than she did by garden sass.

She was always littering up the house with weeds and stuff out of the woods, and she drew pictures when she'd better have been drawing candles or making soap. She took after the Spencers—her mother's folks. One of them wasn't half witted and wrote verses, and another painted pictures, and never amounted to anything. And Pamely was headstrong; she never seemed to pay any attention to good advice. She was always as pleasant and amiable about it as could be, but she would go right on in her own way. That was like her father; when they tried to dismiss the Rev. Mr. Caldwell for unsoundness of doctrine, Deacon Semple, he wouldn't agree to it. He didn't get excited and call hard names, as the others did, but though they argued and argued, he wouldn't be convinced.

Mis' Ichabod was of the opinion that a committee of ladies ought to call upon Pamely, and advise her to go and keep house for old Hiram Hutchinson. He had a large farm and two invalid daughters, one afflicted with spinal disease and the other with epilepsy; so 'twas a hard place, and of course she would keep everything at sixes and sevens, not having any faculty; but old Hiram was willing to take her because he was very close, and she would not expect much. And Mis' Hosea Blodgett added that as Hiram was a widower, nobody knew what might happen. He was over fifty, and hard to get along with, but then Pamely couldn't be far from 25, and ought to be willing to make a sacrifice for the sake of a home. Ben Seaverns, who used to keep company with her, had gone off to sea five years before, and had probably got drowned, to say nothing of being a shiftless good-for-nothing, and surely there was no man in Brimblecom who wanted to marry a girl without faculty.

Before the meeting adjourned, Mis' Ichabod, Mis' Hosea Blodgett, and Miss Nancy Perkins, the postmistress, were appointed a committee to labor with Pamely.

There was no doubt about the zeal of the committee. Bright and early the next morning—so early, in fact, that the breakfast dishes were not washed in any town except Brimblecom—the three ladies presented themselves at the front door of Deacon Semple's late residence; front doors were reserved for state occasions in Brimblecom. The committee, after consultation, had decided that this was an occasion which rendered the use of the front door appropriate.

Keturah Grant, who had been maid-of-all-work in Deacon Semple's family for half a century, hobbled to the door, and admitted them to the sitting-room; and there was Pamela, with a great bunch of weeds—buttercups and clover and white weeds—painting, actually painting, at that time in the morning! She wore a high-necked and long-sleeved apron, which was bedaubed with paint, and on her nose was a smirch of bright yellow.

The committee with one consent heaved a deep sigh.

"Seein' Scripter commands us to be kind to the widow and the fatherless, we thought we'd come and tell you that old Hiram Hutchinson wants a housekeeper," said Mis' Ichabod, who had been chosen chief spokesman, in view of the "flow of language" for which she was renowned.

Pamela turned an innocent, puzzled face upon Mis' Ichabod—a very lovely face, with a pure, pale skin, and soft, shy, brown eyes, though in Brimblecom, where rosy-cheeked beauties were the fashion, they had never thought of calling it so.

"Oh, the widower! I couldn't think for the moment what you meant. Poor man! I am sorry if he can't find one. But nobody could expect me to give up Keturah, surely! She is growing too old; and she wouldn't leave me, anyway."

The committee looked at each other. Their mission seemed a somewhat difficult one to perform. Was Pamely so innocent as she looked? Mis' Ichabod had a dreadful suspicion that she was deep, and she resolved not to be daunted.

"We thought you might like the place yourself, seein' you was left so kind of dependent," she said.

"I? Oh dear! I haven't the least bit of faculty, you know," and Pamela laughed merrily.

"Them that hain't any faculty have got to try to do something, if they don't want to be objicks of charity," said Mis' Ichabod.

"I don't think Brimblecom will ever have to take care of me. If it does, I am such a little thing that it won't cost much."

There was the suspicion of a flush on Pamela's cheek and a tense look about her mouth that the committee did not observe. They only saw her laugh, and they arose in high dudgeon.

"I hope the time won't come when you won't find it a laughing matter," said Mis' Hosea Blodgett, who was determined not to come away without saying something; "that would be so humiliating to tell of."

"Oh, I hope not," said Pamela, sweetly.

"That was the very worst thing about Deacon Semple—you never could make him mad," said Miss Nancy Perkins, as she opened the gate. And though the other members of the committee wouldn't acknowledge it, Pamela's resemblance to her father in this respect was the thing that they had found most aggravating in their interview with her.

Before they reached their homes they repented that they had not said more, but there was something in Pamela's manner that made it seem an impossibility. The committee could not explain it plainly. Pamela had been quite pleasant and polite, but they didn't care to go again. However, they quite agreed that the matter ought not to rest there, and they were willing, even anxious, to go and confer with Mr. Stockbridge, the minister, upon the subject. Perhaps he could be induced to advise her. She would not dare to be so high and mighty with the minister.

The Rev. Mr. Stockbridge was a grave and dignified man of nearly 40, who, when he had first come to Brimblecom, 10 years before, had had the caps of half the young ladies of his parish persistently set at him. They had now, if they had not wholly abandoned the cap-setting, learned to "draw it mildly, lest it were all in vain," for the minister had never shown the slightest signs of being caught. He seemed somewhat embarrassed when the committee visited him and made known their errand. As Mis' Hosea Blodgett said, in describing the interview to her friends:

"He kinder turned red, and then he kinder turned white, and he looked all ways for Sunday, jest as if we'd said something that wa'n't proper. And when he said anything, which wa'n't for as much as a minute, he up and said jest as good as to say that he didn't consider 'twas any of his business. But Mis' Ichabod she jest talked and argerfied beautiful about how the town would have to take care of her, and bein' her father was a deacon, the church ought to do its duty, advisin' and laborin' with her if she was headstrong and set-up, and she convinced him—with a few words that I let fall as 'twas given me to speak—and he said he'd go and deal with Pamely accordin' to the best wisdom and judgment that was given him. When she sees him a-comin' she'll dowse her peak, for there's nobody in Brimblecom that ain't afraid of the minister."

Within a week the committee waited upon the minister to hear the result of his advice to Pamela. It was very hard to find him at home; they tried four times before they succeeded. If he had been anybody but the minister, they could not have avoided the painful suspicion that he slipped out of the back door when he saw them coming. And when at last they did find him at home, his report was not altogether satisfactory.

"Miss Semple did not care to accept the position of housekeeper to Mr. Hiram Hutchinson," he said, as if Pamela were the greatest lady in the land, and could pick and choose positions. But then he was a minister, and ministers couldn't be expected to talk just like common people.

"What is she a-goin to do, then?" demanded Mis' Ichabod severely. "I don't know of any other chance for her."

"I—I offered her a position, but she declined that, also," said the minister.

The committee looked thunderstruck.

"I do hope it wa'n't to keep school," said Mis' Hosea Blodgett, recovering herself suddenly, "for she hain't a mite of faculty, everybody knows. Why, I asked her once if she understood mathematics, and she said she could do addition if you gave her time. My Angelia understands mathematics, and besides beautiful learnin', she's got a real faculty for keepin' school.

"It was not a position as school teacher," said the minister.

"She could kind of get along with housework, though she hain't any faculty. I hope the folks ain't very partickerler," said Mis' Ichabod.

"As she declined the position, it does not seem to matter whether they are or are not," said the minister.

If Mis' Ichabod had not stood very much in awe of the minister, he would have then and there received "a piece of her mind," as she afterward declared; "for if there was anything that provoked her beyond endurance, it was a close-mouthed person." But as he was the minister, there was nothing to do but to take leave of him with a coldness and dignity which should give some token of their displeasure.

As if he couldn't tell them just as well as not, who wanted to hire Pamely to do housework! But there was one comfort—the committee knew there was nothing going on in Brimblecom that they couldn't find out.

And just after she had expressed that opinion, Mis' Ichabod was so overcome by some sudden thought that she fairly gasped, and leaned for support against the town pump, which providentially stood in her way.

"I heard that Joanna Leach wanted to go home because her sister's twins had the measles. The minister wanted Pamely to keep house for him!" she gasped.

"Well, Mis' Ichabod, if you hain't got an understandin' worth havin'! And though I never breathed it to a mortal before, I've had my suspicions that the minister wa'n't all he'd ought to be," exclaimed Mis' Hosea Blodgett.

"I never knew a man to have one white eyebrow for nothing," said Miss Nancy Perkins, darkly.

Before night the report had spread all over Brimblecom that the minister had asked Pamela Semple to keep house for him. Mr. Stockbridge was certainly the last person to be suspected of an impropriety, but appearances were deceitful. He surely must know that he ought to have a housekeeper who was at least 50, and it was eminently proper that she should be toothless, cross-eyed, and disfigured by small pox, as Joanna Leach was. If Pamela were an especially capable person, the case would be somewhat different; but to be willing to bear with a housekeeper who had no faculty, he must have a personal regard for her.

The oldest inhabitant could not remember such an excitement in Brimblecom. The Rev. Mr. Caldwell's heresy had been tame, and the report that Dr. Saunders had another wife living only mildly exhilarating in comparison.

But several weeks went by before any sound of it reached the minister's ears. Happily for him, Brimblecom had a wholesome fear of the minister. But at length, owing mainly to the efforts of Mis' Ichabod, Mis' Hosea Blodgett and Mis' Nancy Perkins, it was decided that at the next church meeting one of the deacons should question the minister concerning the matter. Such a crying scandal must no longer remain uninvestigated.

It was a great day for Brimblecom. There had not been such an attendance at a church meeting since the Rev. Mr. Caldwell's trial for heresy. Mrs. Deacon Simmons said it seemed so much like county conference that she got up at four o'clock and went to baking a great batch of pumpkin pies before she remembered what she was about.

If the minister had any idea of what it all meant, he made no sign; and when Deacon Simmons, with awful solemnity, and with a long preamble concerning the duty of a minister to set an example to his flock in righteousness, asked him if he thought it seemly and becoming to ask the daughter of their late Deacon Semple to become his housekeeper, the minister quietly replied that he had never done so.

The committee looked at each other, and everybody else looked at them. Miss Nancy Perkins felt, as she afterward expressed it, as if she "would like to go through to Chiny;" but Mis' Ichabod bore up nobly, and Mis' Hosea Blodgett relied upon Mis' Ichabod.

"Didn't you tell a committee consistin' of Mis' Ichabod Badger, Mis' Hosea Blodgett, and Miss Nancy Perkins that you had done so?" pursued Deacon Simmons.

"I did not," said the minister, with an air of bland and innocent surprise.

This was too much for Mis' Ichabod. She arose, and shaking her forefinger impressively at the minister, demanded:

"Didn't you tell us that you had offered her a situation to keep house? And who in this livin' world could it be that wanted a housekeeper but you?"

"You misunderstood me," said the minister, with great politeness. "I said I had offered Miss Semple a position, and it was not to teach school."

Mis' Ichabod sat down, because nothing occurred to her to say, and for a time there was a silence. Then Deacon Simmons arose and said, like a second Adam:

"I hope you won't take no offense, nor think nothin' more about this, Mr. Stockbridge. It's somethin' that the women-folks have got up amongst themselves, and I guess that it don't amount to but dretful little."

"To relieve any further curiosity about the matter," said the minister, looking straight at the committee, "perhaps I had better explain—although it is an explanation which a man doesn't often make in public—that the position which I offered Miss Semple, and which she declined, was that of your minister's wife."

Mis' Ichabod always averred that if it hadn't been for a bit of cinnamon which she had on her tongue, she would have fainted then.

The church meeting broke up suddenly, the sentiment which Mis' Hosea Blodgett expressed being apparently the sentiment of all—that she should have died in five minutes if she could not have got out where she could talk it over.

"Don't talk to me about that girl!" exclaimed Miss Nancy Perkins, with deep feeling. "There never was a man that it took so much faculty to get as the minister."

"And she wouldn't have him! Depend upon it, there's more in that than meets the eye. She's deep," said Mis' Ichabod.

"What do you think Mis' Moses Gregg whispered to me in meetin'?" said Mis' Hosea Blodgett. "She says Pamely sells the pictures she paints for money—sends 'em off to the city. And besides supporting her and Ketury, she's a-goin' to pay off the mortgage on the farm."

"I hain't never been sorry that I was brought up to work," said Mis' Ichabod. "Vanity and folly may prosper for a season, but we all know where the downward path ends. If Pamely Semple hadn't been sent away to that academy, she might have been as likely and well-behaved as any girl in Brimblecom—if she hadn't any faculty."

And with these remarks Mis' Ichabod withdrew herself from the Council.

On the even tenor of her way went Pamela, working early and late with her brush, and before long a report found its way to Brimblecom that she was considered a remarkable artist, and some things were evident to Brimblecom senses; the mortgage was being paid off, the crops were in a prosperous condition, and old Keturah was renewing her youth.

Brimblecom began to be proud of Pamela. It almost forgot that it had ever been afraid she would become a pauper. Nobody seemed to remember that she had been thought to have no faculty—nobody but the committee.

One or two persons were actually heard to say that it was a pity she didn't marry Mr. Stockbridge, but perhaps she had a right to look higher than the rest of the Brimblecom girls. Mis' Ichabod always shook her head with mysterious meaning when Pamela was mentioned, and said, grimly, "Them that lives longest will see most."

One day triumph came to Mis' Ichabod.

The committee were in the post office—Mis' Ichabod and Mis' Hosea Blodgett were often so kind as to assist Miss Nancy Perkins in assorting the mail—when in came Mrs. Deacon Simmons, who was fat and scant of breath, and in such a state of excitement that the committee had, all and severally, to fan her vigorously before her news could be extracted.

"Don't you think, true as I'm a livin' woman and not a corpse, as I might expect to be, hearin' such upsetting things and hurryin' so—"

"Go on, go on! Pray don't lose your breath!" cried the committee in chorus, fanning vigorously. "We'll never breathe it to a soul."

"Oh, it's all over Brimblecom. That good-for-nothing cretur Ben Seaverns has come back, without hardly so much as a coat to his back, and the rheumatic fever. Been cast away on a desert island, and eat up by cannerbals 'most—which nobody can't say wa'n't exactly like him—and nothing but skin and bones, and the doctor says most likely he won't never be good for anything again, not to mention that he never was. And Pamely's took him in, and she and Ketury is a-nussin him up. And that ain't the worst of it; the minister went up and married 'em! She's took that good-for-nothin' cretur to take care of for life—her that might 'a had the minister!"

"They never got me to believe that she had any faculty," said Mis' Ichabod.—*Harper's Bazaar.*

"AH! my friend," said a clergyman to a parishioner who was the husband of a termagant, and who had made application for a divorce, "we should be yielding and forgiving. There are no divorces in heaven." "That's the reason," said the sufferer, "why I'm so anxious to get a divorce here."

AFTER the circus is over, after the wild beast show is done. First son of toil (ecstatically): "That was a bully show. Did you see the lion-tamer, hey?" Second son of toil: "Didn't I? I tell you, it takes him to boss a lion. Why he just knocked that old lioness about as if she had been his wife."

"WHAT makes Col. ——— so popular? I'm sure he's very stupid. He can hardly see beyond his nose," said a lady to a friend, who replied: "My dear, sharp-sightedness is not what makes a person popular. It is what the colonel doesn't see that gives him such popularity."

Nobleness of Women.

True nobleness in women consists in her living and acting up to her standard of right and justice. Although there is a great difference of opinion in regard to that standard, many there are to-day, whom the world terms intelligent women, who are spending their lives in fashion and display, wearing out physical, mental and all of their better nature. For does not fashion demand late hours, unhealthy dress and a forgetfulness of the poverty and heartaches that meet us on every side? Many a good woman, who will pause to reflect, will realize that her life is being spent in vain. Many dear little ones are hungering for a mother's love and affection, while the slave fashion is undermining health, and depriving her of the truest joy that God has given to women—the love and care of children. My prayer is, that we may all see the more clearly in the future than we have in the past. Yet we have quite a page of brave and heroic women, whose sons and daughters have risen above mere fashion, and given to the world that which will not perish when the grass is waving green above their heads. It is true that but few ever attain greatness, but there is something for all to do, and I think if mothers and others who have the care of children would study their interest more and note how our prisons are being filled, instead of the higher and nobler walks of life, we would before long have a purer Government, better society and better state of affairs in general.

Mothers, to succeed, must have education that books cannot give. Children are books which we must study, and often we may find that special methods required for the proper training of one child would not be proper for a brother or sister, so different are their natures even in the same family. I think if children were taught to love nature more and fashion and art less, it would be well for them. Bryant, one of Nature's noblemen, has said: "If thou hast learned a truth, which needs no school of long experience, that the world is full of guilt and misery, and hast seen enough of all its sorrows, crimes and cares to tire thee of it, enter the wild wood and view the haunts of Nature." M. J. C.

Hollister, Cal.

ENTERTAINING COMPANY.—The whole philosophy of hospitality is summed up by Emerson in the following manner: "I pray you, O excellent wife, not to cumber yourself and me to get a rich dinner for this man or this woman who has alighted at our gate, nor a bed chamber made ready at too great a cost. These things, if they are curious in, they can get for a dollar at the village. But let this man see, if he will, in your looks, in your actions and behavior, your heart and earnestness, your thought and will, what he cannot buy at any price, at any village or city, and which he may well travel 50 miles, and dine sparingly and work hard in order to behold. Certainly let the board be spread and the bed be dressed for the traveler, but let not the emphasis of hospitality be in these things. Honor to the house where they are simple to the verge of hardship, so that the intellect is awake and sees the laws of the universe, the soul worships truth and love, honor and courtesy flow into all deeds." One of the greatest comforts of having a home should be that in it we have a place for friends and even strangers—rooms to more than supply the needs of the family, and extra "leaves" to the extension table. The secret of true hospitality, as Emerson has stated, is in its coming from the heart.

Chaff.

A BIBULOUS parson was introduced to a lady who had been represented to him as quite a talented artist. He greeted her by saying: "I understand, madam, that you paint." She started, blushed deeply, and recovering herself after a few seconds, said, with as much acidity of tone and style as she could command: "Well, if I do paint, I don't make any mistake and put it on my nose."

"THEN you are paying attention to old Grinder's daughter, are you, my son?" "Yes, mother; I have waited upon Miss Grinder somewhat. She's a nice sort of girl. Father's got some money." "He's the closest man in these parts.' "But you know, mother, he can't live forever, and—" "Don't you be too sure. I've known old Grinder for forty years, and he hasn't died yet." This set the young man to thinking.

"WHEN I married," said Boggs to a party of gentlemen who had been bragging of the successful marriages they had made, "I got a fine house and lot." "And I, gentlemen," exclaimed Mrs. Boggs, entering the room just in time to hear her husband's remark, "I got a flat, the top story of which has always remained vacant."

HE had lost his knife, and they asked him the usual question, "Do you know where you lost it?" "Yes, yes," he replied, "of course I do. I'm merely hunting in these other places for it to kill time."

MRS. FOGG visited a second-hand auction the other day, and bought a job lot of kitchen furnishing goods. Fogg says every article in the list has a hole in it except the pepper-box cover and that everything leaks but the colander and milk strainer.

Young Folks' Column.

The Baby's Autograph.

They gave it to me at Christmas—the pretty new autograph album—and I was proud of it; the binding was so gay, and the white, gilt-edged sheets so spotlessly pure. I could hardly make up my mind who should have the honor of dedicating that album, or what verse was grand enough to be inscribed on its pages; and before I had quite decided, baby found it! She had toddled into the parlor and taken it down from the table before I had missed her, and was sitting cross-legged, like a Turk, with the precious book in her lap. That would not have been worth recording, and I should not have valued my album beyond price now if it were all. But she had a pencil—for she dearly loved to scribble on bits of paper—and she had made her mark on the front leaf (the title page of my beautiful book). She had made a dozen marks, criss-cross and zig-zag; and there she sat, her bright hair tossed down over her face, her little demure mouth pursed up, her blue eyes full of mischief, half shy, half defiant, and we three women looked at her.

"Oh, you naughty, naughty baby!" I cried; "you've just ruined my new album, you bad little thing!"

"Bless her dear little heart," said my mother; "doesn't she make a picture?"

"Whip her!" cried Aunt Harriet in a vindictive tone. She has no children of her own, and knows just how to bring up other people's.

I was angry enough to do it, and had made one step forward, intending to wrest the book out of the clasping baby hands, and then—what, beat my own child? I was saved that degradation by my own good mother, who shook her head at me over Aunt Harriet's shoulder.

How long is it since Christmas? Counting by heart-throbs, I would say years! years! It is only a couple of months, and to-day I would give, oh! what would I not give to have those little hands doing their sweet mischief. Peace, foolish heart! "He giveth his beloved rest." The baby is gone, but when I look at the little short lines that dedicate my album—the sweetest, saddest lines to me that were ever written—soon ended like her little life—I am glad that I took her in my arms, kissed her rosebud lips, and put the book away without one reproving word—glad that I caused no angry feelings in that baby heart, or left memories for myself that would now have power to wound.

That is why all the leaves of my new album are blank—pure, spotless, just as the fair page of her little life was; but you, who think these characters on the dedicating page unmeaning, have never had the key to them. Mothers can tell what they are. Angels will be glad over this record without blot or stain. There is no handwriting so fine that I would exchange it for my baby's autograph.

A NOISY MONKEY.—One of the most extraordinary and the largest of all the monkey tribes found in America is the "howler monkey," so called from the loud voice of the males. A. R. Wallace, in the *Popular Science Monthly* for May, alludes to this animal as follows: Often in the great forests of the Amazon, or Orinoco, a tremendous noise is heard in the night or early morning, as if a great assemblage of wild beasts were all roaring and screaming together. The noise may be heard for miles, and it is louder and more piercing than that of any other animals, yet it is all produced by a single male howler sitting on the branches of some lofty tree. They are enabled to make this extraordinary noise by means of an organ that is possessed by no other animal. The lower jaw is unusually deep, and this makes room for a hollow bony vessel about the size of a large walnut, situated under the root of the tongue, and having an opening into the windpipe by which the animal can force air into it. This increases the power of its voice, acting something like the hollow case of a violin, and producing those marvelous rolling and reverberating sounds which caused the celebrated traveler, Waterton, to declare that they were such as might have had their origin in the infernal regions. The howlers are large and stout-bodied monkeys with bearded faces, and very strong and powerfully grasping tails. They inhabit the wildest forests; they are very shy, and are seldom taken captive, though they are less active than many other American monkeys.

A PUBLIC LIBRARY WITHOUT NOVELS.—In Germantown, a part of the suburbs of Philadelphia, there is a free library of 10,000 volumes without a novel in it. When the librarian was asked, "Why don't you keep novels?" he replied: "Because we hold that it does harm to our young readers. Fully one-half of those that come here are young folks. Novels, at that period, are not the things for them. We hold that their minds should be led to take up some more wholesome reading—books on travels, or natural history, or biography—something that will amuse and instruct together." "Is there any dissatisfaction because you have no novels here?" "No, we have from 400 to 600 visitors a week, and they increase every year. We have books on all sorts of trades—architecture, engineering and carpentering. We find these books are a great deal read, and have not the least doubt as to their usefulness."

Good Health.

Hereditary Disease.

There is, strictly speaking, no such thing. Children are not born diseased (some specific maladies excepted), even if one or both parents are, but they are simply born with a predisposition to such parental malady. They are born with the material, with the powder, but actual disease will no more occur, unless exciting causes are applied, than powder would detonate without the aid of fire. The observant reader has often felt surprised at seeing robust, hearty children, of parents who were seemingly at not a great remove from the grave; and, if rational care were taken of such children, they would live to become healthy men and women. The practical lesson should be, a hopeful diligence in the rearing of children of diseased parentage. The difference between the children of healthy and diseased parents amounts to this: As to the latter, the powder is drier, they have less capability of resisting the causes of disease; the consequence is, a greater necessity for carefulness; this necessity is often felt and practically attended to. The result is, that such persons are found living, scores of years after they have moldered in the grave, who, in priding themselves on having constitutions which nothing could hurt, could not be made to feel the need of carefulness, and, consequently, perished long before their prime.

We have an instructive and royal illustration in point, in the persons of Queen Victoria and her children. Intermarriage with blood relations for ages has deeply impregnated the Guelph family with scrofula. The earlier years of the British Queen were spent in feebleness and disease, and yet she is now the apparently healthy mother of a large family of robust, healthy children, which is at once creditable to herself, and to the medical skill which dictates the hygiene of her household. The daily routine of these children is, to rise early, breakfast at eight and dine at two. First hour after breakfast, the classics; next, the modern, grammatical instruction being also carefully given; next, military exercises for the boys; then music and dancing; then the riding school; music and drawing for the girls; then the carpenter's shop, and, occasionally, the laboratory; then shooting and working in the royal gardens; then supper; then prayers, and then to bed.

Result, high bodily health, in spite of ages of *"hereditary tendencies"*—*Hall's Jour. of Health.*

Instructions by Which We May Keep from Drowning.

The human body weighs a pound in the water, and a chair will carry two grown persons. That is, it will keep the head above water, which is all that is necessary when it is a question of life or death. One finger placed upon a stool or chair, a small box, or a piece of board, will easily keep the head above water, while the two feet and other hand may be used as paddles to propel toward the shore. It is not at all necessary to know how to swim to be able to keep from drowning in this way. A little experience of the buoyant power of water, and faith in it, is all that is required. We have seen a small boy, who could not swim a stroke, propel himself back and forth across a deep wide pond by means of a board that would not sustain five pounds' weight. Children, and all others, should have practice in the sustaining power of water. In nine cases out of ten, the knowledge that will sustain a pound weight is all that is necessary to keep one's head above water, and will serve better in emergencies than the greatest expertness as a swimmer. A person unfamiliar with the buoyant power of water will naturally try to climb on top of the floating object on which he tries to save himself. If it is large enough, that is all right. But it is generally not large enough, and half of a struggling group is often drowned in the desperate scramble of a life and death struggle to climb on top of a piece of wreck or other floating object, not large enough to keep them all entirely above water. This often happens when pleasure boats capsize. All immediately want to get out of the water on top of the overturned or half-filled boat, and are all drowned except those whom the wrecked craft will wholly bear up. If they would simply trust the water to sustain .99 of the weight of their bodies, and the disabled boat the other hundredth, they might all be saved under most circumstances. An overturned or water-filled wooden boat will sustain more people in this way than it will carry. It would keep the heads above water of as many people as could get their hands on the gunwale. These are simple facts, easily learned, and may some day save your life.

COPPER IN BREAD.—The author concludes that wheat normally contains copper to the extent of eight to ten parts per million. He has experimented with grain, the seed of which had not been "pickled" with sulphate of copper (as is often done to prevent smut), and has satisfied himself that the copper was not due to any impurity in his reagents, or to the gas pipes and burners.—*Jules Van Dens Berghe.*

DISINFECTANTS.—"What is the action of disinfectants?" was asked of a medical student. "They smell so bad that people open the door, and fresh air gets in." was the reply.

Domestic Economy.

The New Diet.

EDITORS PRESS:—Considering the interest that has been awakened by my last communication, on the grainia-fruit diet, as shown by letters received, I would state that a warning is needed to experimentors, that they may not suffer disadvantage and damage. The new diet has enabled me to enjoy uninterrupted good health, during the entire eight months, since I have been using it, with a gain that has resulted in such increased ability to labor, that I am able to, and actually do, perform twice the work I did, or could do, last year. I will pen a few lines to say, do not make the change too rapidly, nor look for effects too soon. Begin by leaving off meat, butter and sugar, using cooked fruit with eggs and new milk, right fresh from the cow, instead. If you feel the need of animal food meat soup can be used instead, and, in many cases, would be better than milk. Begin using a little grainia mixed with fruit juice in the milk or soup, or dry, just as you can, in place of bread, until you acquire a taste for it. Then gradually drop the use of all kinds of meat or animal food, including butter, milk and eggs, living on bread and fruit, either cooked or uncooked, as you relish it best, but preferring the latter whenever it will satisfy you, substituting grania or fine oatmeal, or both, for bread as fast as you can without feeling much objection thereto, until in a month or so you should be able to live exclusively on grania and fresh fruit. If you do not feel as strong to-day as you did yesterday, do not think you must rush back to cooking, but look and see if you are using sufficient grania, and, if necessary, take it as a duty, so there is not repugnance, and if so, see if you cannot fix it so you will like it by combining with other food, and see that you have a good variety of fruit, nuts, etc., all the time, as persons have already done damage to the cause and themselves by failing to furnish their families with variety enough—one, perhaps, furnishing his family on almost exclusive diet of green peas, which are very good for variety when quite young; another goes it on oranges until his teeth are all tender from the acid which should have been neutralized by walnuts, peanuts, almonds etc., so throughout the list. Honey seems to be fine for some, but others may not use it, or any sweet; and not only ordinary acid fruit, but plenty of lemons seem to be needed by some, and when they cannot well be had, I find fruit of different kinds soaked in strong vinegar answers a good purpose. We are all of us much benefited by the free use of tomatoes at all times of the year, and the seedy center of cucumbers I find to be not only useful but good tasted. Spinach and asparagus, either or both together, chopped fine, and packed tight, with vinegar poured over, are a nice dish with grainia. Cabbage would probably be good the same way. Grated turnip is fine; some mix with it grated horseradish. Sweet potatoes, parsnips and carrots are all appreciated by almost every one, if dried and ground in a grain or even coffee mill; so is sweet corn. So I might go on and show the list of things, for variety is large enough, if we will look around, besides the variety that comes from combination in various grainia cakes that are made of pounded or chopped apple and raisins, or other fruit, mixed with grainia.

Before closing, let me warn parents against feeding grainia to little children, say under two years of age, until it has been ground very fine, and even then, in some cases, the finest should be sifted out and used, and if the mill cuts up the grain properly, there will be a right proportion of gluten with it all; but instead of grinding so fine, you can soak it an hour or more. That will answer the purpose often better, if you are careful not to have it so long soaked as to sour before digesting. Should it cause looseness of the bowels, use some crushed walnut meat, or something of the kind. By the exercise of judgment in this diet, you nor your children will ever need medicine, after the study of which for years, I discard it entirely.

Further, in answer to inquiries, let me state that I am not a person of strong constitution, but the opposite; have inherited, or all my life been troubled with dyspepsia, turns of sick headache, biliousness and hemorrhoids; also frequently troubled with shooting pains through the body, especially the head. But I have had none of the troubles since making this reform in diet, and, though my weight is only 125 lbs., where it used to be 132, I feel or see no disadvantage—rather an advantage—from the loss of weight, which will probably be gained on the new fruit, berries, etc. Yours, for a sound mind in a healthy body, ISAAC B. RUMFORD.

Bakersfield, Cal.

STEWED VEAL.—Cut your veal in pieces, wash them clean, put them in the dinner-pot, add three pints of water, put in one onion, some pepper and salt, let it stew one hour; then add potatoes sliced, and make a crust of sour milk or cream of tartar, and put in and stew till the potatoes are done, about half an hour; the crust may be made into biscuits. Crumbs of any kind of fresh meat may be used in making a stew.

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TABLE OF CONTENTS.

EDITORIALS—Notes on Vine Pruning; The End of the Volume, 501. The Week; Our Live Stock Interests; Disinfection of Fruit Packages, 508. Silos and Ensilage, 509.

ILLUSTRATIONS—French Method of Vine Pruning and Training, 501. Design for Cow Stable and Silo Construction, 509.

CORRESPONDENCE.—Nevada County Notes, 502.

THE APIARY—Prickly Pear in Foundation Making, 502.

ARBORICULTURE—Value of Eucalyptus Timber, 502.

FORESTRY—Forest Trees of California, 502.

THE VINEYARD.—Raisin Making in Malaga, 503

POULTRY YARD—Thoroughbred Poultry; Poultry on the Pacific Coast, 503.

HORTICULTURE.—Summer Pruning; Apricot Gum Disease, 503.

PATRONS OF HUSBANDRY.—Congress and the Transportation Question; Whom to Vote for; Grange Entertainments; What is Needed in Congress, 504

AGRICULTURAL NOTES, from the various counties of California, 504-5.

HOME CIRCLE.—To F. F. on His Birthday, (Poetry); Pamela's Faculty, 506. Nobleness of Women; Entertaining Company; Chaff, 507.

YOUNG FOLKS' COLUMN.—The Baby's Autograph; A Noisy Monkey; A Public Library without Novels, 507.

GOOD HEALTH.—Hereditary Disease; Instructions by Which We May Keep from Drowning, 507.

DOMESTIC ECONOMY.—The New Diet; Stewed Veal, 507.

ENTOMOLOGICAL.—Treatment for White Ants; White and Common Ants, 508.

QUERIES AND REPLIES.—Injury to Sycamore Trees; Libocedrus Decurrens, 508.

Business Announcements.

Agricultural Implements, M. C. Hawley & Co., S. F.
California Washing Machine, Geo. M Pursell, S. F.
Interest in Nursery for Sale, D. Turner, Colton, Cal.
Turnip Seed, C. R. Rogers, Philadelphia.
Adams Springs, Miller & Stohl e, Lake County, Cal.
Kiefer Hybrid Pears, Wm. Parry, Parry, N. J.
Stockton Business College, F. R. Clark, Stockton, Cal.
California Commercial Business College. S. F.

The Week.

The harvest is well under way. The warehouses are being emptied of their old grain to save longer storage rates, and to prepare for the new grain. It is more and more clearly appearing that the harvest will be spotted in its character, some regions making remarkably fine showings, and some gathering but little—the aggregate being a moderate surplus, which will no doubt be easily sold at good prices.

Fruit is now pressing forward, and all canneries are preparing for their heavy work on apricots, peaches, plums, etc. The fruit interest is in a whirl of excitement over the enforcement of quarantine rules for the disinfection of return boxes, and the trial in this city, on Friday of this week, is regarded as the crowning event in the fruit trade of the summer.

Another week will bring us upon the confines of the national holiday, and already the explosives are beginning their patriotic racket. The city will celebrate with an old-fashioned procession, and meantime all who can escape to the glorious quiet of the country will do so. The days now passing are peerless, and life in the open air is a joy beyond compare.

THE last vestige of the toll nuisance in the Yosemite valley has been wiped out; the Yosemite Commissioners have purchased the trail leading to Eagle Point, at their recent meeting.

Our Livestock Interests.

Allow us again to call the attention of our livestock farmers of every class to the advantage of a more general participation in the agricultural discussion of the day. There are several reasons why the livestock interests should come forward more prominently. The first, perhaps, is that general discussion and comparision of experiences brings forward light, under which each may labor more intelligently and attain more satisfactory results. Second is the extension of the interest through the disposition of others to embark in enterprises which offer fair rewards, and this always results to the advantage of those who have already secured the blood which beginners need to start their individual endeavors. Third, discussion brings to an honorable industry the popular recognition and esteem which may be valuable directly in the increase of patronage, and has also an indirect value in the satisfaction which one feels in having his enterprise honored and well known.

We have only noted a few of many reasons why we should hear far more than we do of our livestock interests. These interests are now in a position to come forward more prominently and claim their proper place in popular esteem. Our horse-breeding enterprises are attaining most gratifying importance and achieving signal successes. In the matter of speed, California horses are famous all over the country. For beauty, vigor, strength, adaptation for various purposes, we doubt if any State can surpass the animals which are now being bred in abundance in different districts of the State. The horse is the king of domestic animals, indispensable in industry and in pleasure, and yet our readers tell us far more of everything else than they do of their horses. We should hear more of California horses.

Our cattle industry was never in a more promising condition so far as prospective rewards of producers is concerned. It has been shown clearly that the Pacific coast has a direct share in the great cattle trade of the Eastern seaboard, and that the splendid English demand for American beef is to extend its treasure even to the shores of our ocean. We shall now be able to produce better beef at better prices than ever before, and the preparation of a few cattle for the butcher will be a regular item in farm economy here, as it is in the older States. We should hear more of our cattle, how to breed and feed them.

California sheep are still going forward to stock the great central areas of the country. It has been demonstrated that no stock is so good as Californian for this purpose. The wool market is also yielding better results, and it is likely that California will return to her old eminence, not with vast roaming bands of sheep, but with thousands of smaller flocks better bred, better fed, and better kept than ever before. Why do we not hear more from our sheep interest?

The hog is now in the ascendancy. Some of our friends are building new houses with their pig profits, thus making the gross elevate the æsthetic. Where is there more money than in a good hog ranch, well managed, and in hogs well fed and bred? And yet who takes his pen to sound the praises of the source of sweet bacon and delicious hams? Who writes of the animal, right and wrongly handled? It is true that our appeal for hog literature drew out several good letters, but not enough—not enough. Who will sing the pig?

Our dairymen are gaining good prices this year. They have had drawbacks with slow and short feed, and the year's production will be lessened by the shortness of the pasturage season, owing to the scanty rainfall. But they are gaining more money for the product, and those who had a care to grow collateral food materials will prolong the milking and get the coin. This year's experience will yield many suggestive themes for discussion. We ought to have a pressure of dairy correspondence which would squeeze all our fruit letters into cider. Why do we not get more of it?

And the hens; has everybody told everything they know about the poultry yard, its failures and successes, its vexations and delights? Why not agitate the hen subject? Is it not clearly wrong to let all the voices of nature, as sounded by our domestic animals, go unrecorded? From week to week hardly a neigh or a low, a bleat, a grunt, a cackle is heard, and the stranger might think that California was naught but fruit and flowers. And yet in her domestic animals lies one of the greatest promises of California's agricultural greatness. Let this promise disclose its proper proportions!

OLEOMARGARINE.—We read that there is now a bill before the House of Representatives which provides that every package containing a substance appearing like butter or cheese, but not the actual product of the dairy, shall be distinctly branded with its own proper name. The penalty for neglect is $1,000, of which sum half is to go to the informer. But this is intended to apply to those substances only when intended for shipment to foreign parts; the domestic consumer of butter and cheese must still be uncertain as to what he is eating in their stead.

Disinfection of Fruit Packages.

The case of the People vs. A. Lusk & Co., for violation of the horticultural quarantine rules requiring the disinfection of empty fruit packages, was postponed until Friday of this week. In the meantime there is no abatement of interest in the principle involved on the part of fruit men, be they growers, dealers or packers. We have yet to meet a man well acquainted with the facts who denies that the horticultural interests of the Pacific coast are most seriously threatened by the myriad pests that have been imported, reinforced by indigenous allies that are adapting themselves to life upon cultivated trees and their fruits. The larva of the codlin moth is but too common in the early apples and pears now in the market. If careful parents will cut open a few specimens of the fruit for which their darlings are so clamorous, they will probably squirm at the sight that will be revealed. We doubt whether they will choose to dine on so tender a dish as the apple-worm, even when enveloped in their favorite baked pears. Many of these larvæ are so small as yet that only an expert can detect their presence, while other specimens have the pink hue, which indicates an approaching change to the chrysalis state.

The mature moth is also emerging from winter quarters, in the crevices of commission houses and old boxes and baskets, ready to be carried by the latter into hitherto clean orchards. We greatly fear that many of our orchardists will become only too well acquainted with the insect which they have known only by its bad name, and that they will pay Dame Experience a heavy bill in pears, apples and quinces.

Dealers in San Francisco, with hardly an exception, admit that the quarantine rule, requiring return packages to be disinfected, is a wise and just one. They protest, however, that commission merchants should not bear the cost of such disinfection, which benefits, first of all, the orchardist, and is intended to render his property, the package, fit for his own use and harmless to others. It is said that a few merchants are bidding for popularity by offering to disinfect the boxes passing through their hands, if the law is sustained. It remains to be seen whether their liberality will bear the test of a season of unusually good fruit crops.

The canners generally decidedly favor the free-box system, and most, if not all of them, offer to pay the grower one-half of the cost of such a package, which would relieve them of the trouble of returning empty boxes, and furnish considerable fuel for their boilers. W. W. Smith, of Vacaville, and other large growers, have decided to adopt the free box, as cheapest and safest. Apricot boxes in the shook cost but five and a half cents delivered at Vacaville; and, with the above concession by the canners, it is not worth while to have such boxes returned, with the chances of carrying with them the germs of insects, mildews, etc., which are playing havoc with the apricot, peach and cherry in other places.

We do not assume to tell growers whether the free or the disinfected package will be most economical in the long run. From our knowledge of the insects and fungi affecting fruit and fruit trees in various parts of the State, and the facilities furnished for their spread by the return package, we see that, unless stringent measures are adopted, California will be as badly off as are the Atlantic States. To insist upon the return of an empty package from the San Francisco commission house to the orchard without disinfection, is about on a par with carrying cast-off clothing from a small-pox hospital to a healthy community.

Several large growers have ordered all of their boxes scalded before returning. The Pacific Disinfecting Co. are enlarging their works to a capacity of 30,000 boxes per day, and will wait for their pay for work done until a verdict in favor of the law authorizing horticultural quarantine is obtained. Their present rates are one cent each for large boxes, and one-half cent for baskets, with the Inspector's certificate gratis. There is no monopoly in the business, as any one can set up a tank who chooses, so it be efficient in the judgment of the Chief Horticultural Officer.

THE NEXT ENSILAGE CONGRESS.—J. B. Brown, Secretary of Ensilage Congress of 1882, (55 Beekman street N. Y.), writes us that many farmers present at the Ensilage Congress held January 25, 1882 (also many who did not attend), desire to again assemble in order to compare experiences. It will be held Wednesday, Jan. 24, 1883, and continue four days (and evenings if desired). The object in making this early announcement is, that farmers with practical knowledge and experience with ensilage may be prepared with a written statement of their various operations, which shall include the actual measurements and weights as they apply to land cultivated, manures, fertilizers and seed used, and product per acre; the cost for labor, teams and power per ton of ensilage, and the comparative gain or loss in weight or product of milk and butter as compared to the feeding of hay or other dried fodder. The reports to be as concise as possible. It is requested also that specimens of the simplest farm bookkeeping be presented, and preparation made for a full discussion of the economies of mechanics and improved methods relating to agriculture, by men who know how to make farming pay.

QUERIES AND REPLIES.

Injury to Sycamore Trees.

EDITORS PRESS.—Remarks were made at the last meeting of the State Horticultural Society in regard to the injury to the sycamore trees. About 15 years ago these trees showed serious injury early in the spring, which was supposed to be the work of the frost, as these trees put out their foliage very early in the season, and therefore would appear to be tender and susceptible to injury from this cause. Still, only a portion of the foliage would droop at a time, and the injury appeared at different times and at different stages of their growth. Four or five years ago, when there had been no frost, I observed the leaves of the young shoots affected as usual, every year since the injury was first discovered, and I determined to make a close examination, suspecting that some insect had deposited an egg at the leaf-bud, which had hatched out during the first warm weather, and that the depredator had then and there gone to work from his early home to sustain life. On close examination, after paring away the wood a little below the base of the leaf, I discovered a very small borer. It was a mere chance that I discovered it; it was so very small, but it was an unmistakable borer, with a brown head and a pointed tail. The late B. F. Walkins was with me at the time when the experiment was made in his yard at San Jose, and we considered ourselves fortunate in seeing the minute grub at all, after we had made several failures to discover more. When magnified by a good glass, it was no larger than the pointed end of a pin. I will here remark that I have seen borers two inches or more in length in the body of old sycamore and other trees, but whether they come from the small ones above mentioned I cannot say, although I am satisfied that there are varieties of borers that live and grow for several years. Would judge that these very small insects soon die, from the appearance of their work—I. A. WILCOX, Santa Clara, June 19, 1882.

The discovery of this minute insect is interesting, but it does not militate against the alleged work of the fungus described by Dr. Harkness. This fungus has been clearly seen and its rapid work noted. One can find insects in vegetable growths, doing minor injury at the same time that a fungus is doing more rapid work. Nevertheless such observations as Mr. Wilcox reports are of interest and value.

Libocedrus Decurrens.

EDITORS PRESS:—In your paper, RURAL PRESS, I see by a communication styled "Shelter Belts," by W. A. Sanders, that he recommends a tree named *Libocedrus decurrens*—a native evergreen. Can you tell me where I can get the seeds? Can I get them in the city?—A. J. BIGLOW, Antioch, Cal.

Let those who have the seed address our correspondent by mail.

ENTOMOLOGICAL.

Treatment for White Ants.

EDITORS PRESS:—In answer to your Los Gatos subscriber in last week's PRESS, I would recommend him to remove the soil carefully from the collar or stem of the orange trees attacked by white ants—*Termes flavipes*. Dissolve three-fourths of a pound whale-oil soap to each gallon of water, and apply it with a sprinkling can at a temperature of 120° Fahrenheit. When the ants work above the surface of the ground, they build a wall or shell of soil around, or up, one side of the tree, and work under it to protect their delicate bodies from the sun. By sprinkling with the above solution, it demolishes the wall and kills the builders. If his trees are small, and he is using pine stakes, they should be removed and replaced, if necessary, by redwood, *Taxodium sempervirens*. I have never known them to attack California redwood.—ALEXANDER CRAW, Los Angeles, Cal.

White and Common Ants.

EDITORS PRESS:—Your correspondent who is troubled by white ants attacking orange trees just below the ground will probably find a remedy in carbon bisulphide. Let him uncover the infested portion, build a chimney of earth about it, set an open cup containing an ounce or so of the fluid close to the tree, and cover for a few hours with sacks or other heavy cloths. Merely pouring the fluid into small holes, made with a stick close to the tree, may be as efficient. Exposing the injured part and scalding with soapsuds, may be a good remedy. Common ants can be exterminated by pouring a little of the bisulphide into their burrows when they are all at home, which is generally at noon. Water which has stood in a barrel or can with coal tar deals sudden death to most insects with which it comes in contact, but it should be used on vegetation with caution.—C. H. DWINELLE, University of California, Berkeley.

A Los Gatos correspondent of the PACIFIC RURAL PRESS asks, how to keep white ants off of trees. As the question is referred to some of the southern readers of the paper, we will say, in answer, that the white ants only trouble orange trees on new soil, never on old cultivated soil; at least, that is the experience here. They establish themselves around the root of the tree and work up on the trunk, covering it with a film of mud, under which the ants work on the bark. The only thing done here to counteract their work is to watch the trees closely and destroy the ants as rapidly as they appear. In this way they are kept down the first year; a few appear the second year, and after that the trouble is over. If a strong solution of whale-oil soap and water were poured about the infected trees, or a little bisulphide of carbon were used, the destruction would be all the more effective, but these remedies are rarely used, as simply digging around the trees and breaking up their nests usually is sufficient.—*Riverside Press.*

Silos and Ensilage.

The interest manifested in this subject is quite remarkable. We are beseiged with inquiries concerning methods and materials, and we cannot do less than pursue the subject as fully as possible, that all may have the benefit of the latest experience on this plan of cattle feeding. Of course experience has to be drawn largely from Eastern sources, although there have been California tests and successes, as we have stated in the RURAL from time to time. We have now an illustrated article showing details of silo building and the arrangement of dairy stables, as now in use on the dairy farm of Burrell & Whitman, near Little Falls, New York.

Fig. 1 is a cross-section of barn and silos built on a hillside; the silos being located on the right, one behind the other. The upper floor of the barn is entered from the top of the bank, the second floor by an approach graded on the side of the bank.

Fig. 2 is a section of a portion of the silo, showing the ensilage and the system of weighting down.

Fig. 3 shows the construction of cow floor, with stanchions and manure trough with grated cover.

Fig. 4 shows the construction of the cow floor with a double row of stanchions. The floor is laid with cement. M M, manure troughs; G G, iron gratings; P P, platforms for cattle; S S, stanchions.

Burrell & Whitman's barn and silo were built in 1880. They are located on a side hill. The barn is 92 ft. long, 36 ft. wide, and has three floors: First, the cow stable in the basement, 9 ft. high, two rows of stanchions, 22 ft. space between the rows; 4 ft. 4 inches back from the stanchions is a wrought-iron grating, 3 ft. 3 inches wide, after the plan of Prof. E. W. Stewart, upon the edge of which the hind feet of the cows stand. Under the grating is a trench 3 ft. 2 inches wide and 28 inches deep; this is laid in cement and is water-tight.

All droppings from the cows pass through the grating and the urine is all saved, as well as the solid excrement. There is a driveway, 8 ft. wide, between these gratings. Sections of the gratings are on hinges and can be turned, and the manure from the pit loaded onto the sleigh or wagon. The vault has to be cleaned out once in three or four weeks. Cows are kept perfectly cleaned and dry, and we think the arrangement a good one.

On the the floor above the cows (also 9 ft. high, and the same size as the cow stable), is the granary and room for storage of all agricultural tools, implements and machinery. This floor also has entrances so that a team can be driven in at one end and out at the other. The floor above is the main barn door, and entrance is from the side hill right into the center of the barn. The silo is on the hillside next to the barn.

The bottom of the silo is on a level with the cow-stable floor, and there are entrances into the silo from both the cow stable and the floor above. The top of the silo is on a level with the upper or main floor of the barn, so that the fodder can be taken out onto any of the three floors of the barn. The convenience of this arrangement will be appreciated. The silo is built of stone, the walls are three feet thick next to the bank, and two feet thick next to barn; the roof of barn extends over silo. All around the walls 12 inches of cobblestones are filled in from top to bottom, so as to prevent any water lodging against the walls. Capacity of entire silo, about 400 tons, or 200 tons for each compartment.

On June 1st we put in seven and one-half acres of corn, with a drill in double rows, 28 inches apart, and dropping five to six kernels to a foot in each row.

In September we cut the same, hauled to the silo as fast as we cut in the field, and with a feed cutter of large size, we cut at the rate of 100 loads per day, into pieces three-sixteenths to one quarter of an inch in length, which was evenly distributed in the silos and trodden down. The corn was large stalks, 12 to 14 ft. high, single ones weighing 5 to 5½ lbs., with ears on full of milk. Into one silo we put 16 ft. and into the other 11 ft.; as soon as filled, we put on the covers. These are of plank 3 ft. wide, 16 ft. long and 2 inches thick, fitting together closely, and upon these covers we put 50 tons of stone to each silo (stone picked up on the farm).

Within a week one had settled to 12½ ft., and the other to 8½ ft. One cubic foot of ensilage weighs 47 lbs. We had, therefore, 212 tons of ensilage, and the exact cost of harvesting it, filling the silos, putting on stone, etc., was $217, allowing full wages for all employed.

On the 26th of October we opened the silo having the 8½ ft. of ensilage, and found the fodder as green and sweet as when first put in; we used no straw under the covers, and yet, right next to the boards the corn was all right. This 212 tons from seven and one-half acres, is a large result, and is equal to 70 tons of hay (or nearly 10 tons to the acre), costing but $3 per ton.

We believe that by putting all the manure back on the seven and one-half acres of land, that we can get up to 50 tons of corn fodder to the acre. Our plan for the future on this farm is to raise about 15 acres of corn, and this will be sufficient to fill the silos full, giving us 400 tons, and this, with the pasturage, will keep 40 cows 365 days. We shall pasture all on the side hill (about 20 acres) during the summer season; the pasture will grow better, because the cows will drop more upon it, than by the usual way of pasturing, for by this plan the cows will be fed all they can eat twice per day in the barn.

We think we can give the cows all they will eat, morning and night, of the ensilage, and keep, in this way, 40 head the year round, on 15 acres of corn and 20 acres of hillside pasturage. We, however, immediately after taking off the corn, early in September, plowed up the stubble and put in winter rye. This came up finely and we top dressed it, giving it a good bushing in. We harvested the rye June 1st, and cut that up the same as the corn, and stored it in one of the silos, then immediately plowed the same seven and one-half acres, and put in corn. Our yield of rye was about six tons per acre.

We have full confidence in the perpetual fertility of this corn land because it is to be replenished, not only with what grew upon it, but from the grain fed with the ensilage; for by the plan we have adopted, the liquid manure is as perfectly saved as the solid, and the most accurate experiments show that the fertilizing matter of the liquid is greater than that of the solid manure. Prof. Stewart reports that he has found the manure from one cow standing upon the self-cleaning platform, carried fresh to the field, the liquid all absorbed by the soil, equal to the manure of three cows saved in the old way by throwing into a pile and carried to the field months afterward. In fact, there is no fertilizing matter wasted or lost, except that carried off in the milk.

Fig. 1.

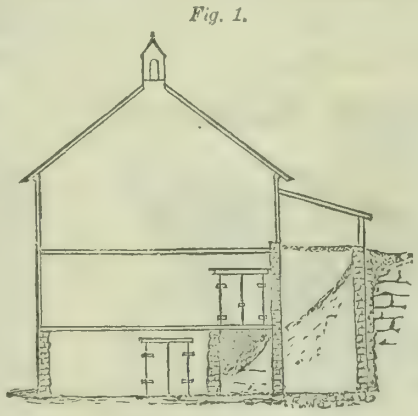

Fig. 2.

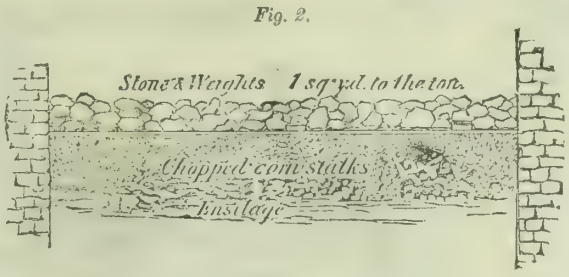

Fig. 3.

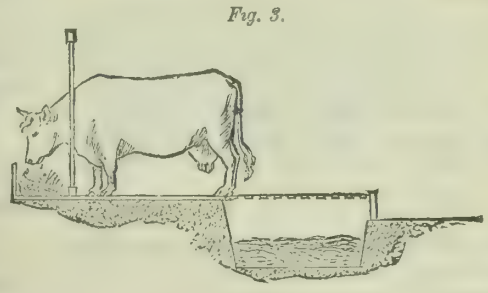

Fig. 4.

DESIGNS FOR COW STABLE AND SILO CONSTRUCTION.

Instead of spreading the manure from 40 or 50 cows over 200 acres, we use it all on the 15 acres that furnish the fodder, and shortly the land must become very rich, and then we can use the manure on other land.

Silo Building.

In building a silo on level land, as we have just done on our upper farm, we arranged as per the following plan: We excavated 10 ft.; therefore the bottom of silos is 10 ft. below the floor of the cow stables, and the top of silos is 10 ft. above. The end of silos is 12 ft. from barns, which leaves a passageway between barns and silo on the ground. The silo is covered, and roof of silo extends over against the barns. We floored from the top of silo to the barns and enclosed the same. This arrangement gives us a chamber connecting with both of the barn floors over the cows, so that the ensilage from either of the pits can be readily hoisted and conveyed to either barn and dropped down in front of the stock. The shape of the silo is as near square as we can conveniently have it. The saving of expense in building in this way over an oblong silo, 35x16 ft., is nearly 15%, we find by calculations. In fact, all farm buildings, we find, should be built as nearly square as possible, if economy in building is desired.

The earth that we excavated we used to form a bank and driveway on the west and north sides of silo, as it is best to bank up so as to drive to the top of the wall when putting in the ensilage.

The walls of the silo are perfectly plumb and parallel, so that the followers, although fitting closely, can settle without binding when loaded with stone. As you build the silo walls, if laid in stone, point up as you proceed, both inside and outside, and then plaster the entire inside (bottom as well as sides), with Portland cement, as it is necessary that the silo should be water-tight, like a cistern.

These silos we built as follows: First, having excavated for the silo, we dug a trench all around the bottom and filled it with cobblestones, and from one corner led a drain so as to carry off all water. The trench under the walls of silo being filled with cobblestones, we placed standards of scantling long enough to extend 12 inches higher than the top of the wall when it was finished. We placed these standards on each side of the proposed wall, and if you desire the wall to be 20 inches thick, then place the standards 28 inches apart, and place a pair of standards every five or six feet around the entire foundation; be particular to have these standards exactly plumb and exactly in line; fasten the bottoms of standards firmly in the ground, or by nailing a strip of wood across at the bottom of the standards and a little below where the floor of the silo will be; fasten the tops of the standards by a heavy cross-piece securely nailed, and fasten the pairs of standards in their plumb position by shores reaching the bank outside. Now, take plank one and one-half inches thick and 14 inches wide and place them edgewise inside the standards, 20 inches apart, thus forming a box 14 inches deep and running all along and around the entire foundation of the proposed wall. Fill this box with alternate layers of cobble-stones or any rough stones, etc., and mortar or concrete. First, a layer of concrete mortar and then a layer of stones, not allowing the stones to come quite out to the boxing plank, but having concrete over the edges, and the concrete must be tamped down solid. Prepare the concrete as follows:

Take one part of good Portland imported cement and mix with this four parts of sand, and mix the cement thoroughly with the sand while dry, and then mix in say six parts of clear gravel; make into a mortar and use at once. Put into the box an inch or two of this mortar and then bed in cobble-stones; then fill in with mortar, again covering the stones, and again put in a layer of stones. When the box is filled and the mortar "set," so that the wall is firm, then raise the box one foot, leaving two inches lap of plank on wall below, and go around again, raising the wall one foot each day or every second day. If no gravel is obtainable, then use five barrels of sand to one of cement, and bed in all the cobble-stones possible. Stones with rough edges are better than smooth, as they bind the wall more thoroughly, but any flat stones found about fields will do as well. A layer of loose cobble-stones should be placed against the outside of the wall before the earth is brought against it, so as to have an air space and a free passage for water.

In regard to size of silo, we would make them 20 ft. deep and put them as much below ground as possible, if good drainage can be had, banking up around the outside with the earth that is excavated as before stated. A silo 30x16 ft. and 20 ft. deep, will be large enough to contain 200 tons of pressed ensilage, and this would keep 35 cows six months, feeding 65 lbs. per day.

We would advise building a silo by dividing it into three compartments by means of two cross walls, and then feed out one at a time. This would provide an empty silo in the spring which would be ready for the winter rye, clover, June grass, etc. (Hungarian can't be grown early), which could be harvested early in June, cut up same as the corn fodder and stored in the silos for summer feeding. Our ideas are that it is best to give the stock a good feed from the silos every morning and night during the summer, in addition to pasturage.

Experience with Ensilage.

Now, as to whether people can afford to put in silos: If hay was but $8 to $10 per ton, it would pay to put in the corn crop for ensilage and build the silo to contain it. The stock would be kept as well upon the ensilage as upon hay, and yield as much manure, and the hay that could be sold at $8 to $10 per ton, would pay all expenses the first year. The right kind of corn for seed costs 85 cents to $1 per bushel. We have a feed cutter capable of cutting 10 to 12 tons per hour. Corn ensilage is probably not a perfect food for cows in milk. Linseed meal, or cotton-seed meal, with bran or oatmeal, will produce a very large flow of milk; 55 or 60 lbs. of ensilage food, with one-half pound of linseed meal and two of corn and oatmeal, or four pounds of bran, or its equivalent, will answer satisfactorily. Cows not in milk require only ensilage.

When we opened the silos we found the ensilage perfectly sweet, and hardly changed at all from what it is when first cut, but after the cover is off from a section for a few days, it changes and becomes somewhat acid. We put into our silos, when filling them, three or four acres of Hungarian grass, which we cut when it was in the milk, and mixed right in with the corn ensilage. This we have reached and fed out. It was splendid, but the cows did not seem to like it any better than the corn. We cut our corn into very short pieces—three-eighths of an inch long.

Suitably prepare the land, plow deep and top dress, manuring well; use the "revolving disk harrow" after plowing, to thoroughly pulverize the soil and work in the manure.

The silo should be air and water tight. Cut the corn, when both stalk and ear are full of milk, into short pieces, one-fourth to one-half inch long, with a "power machine" that has a capacity to cut 10 tons per hour, or 100 tons per day. If smaller power is used, then fill the silo at least three or four feet per day, and continue until it is filled; distribute about the silo evenly all the time, cover with sectional covers two and one-half feet wide, put 250 to 300 lbs. weight to each square foot of surface. When you open the silo remove the weights from one section of two and one-half or three feet and take off the cover, then with a hay knife cut down vertically and take out day by day until you reach the bottom of silo. Then remove another cover and take out that section clear down to the bottom, and so on. Cutting down with a hay knife leaves a vertical wall standing, which, as the ensilage is pressed so solidly, will be compact, and air cannot penetrate to do any harm. The ensilage is raised from the pit as described heretofore.

Feed cows that are dry 60 to 70 lbs. per day of corn ensilage only—no grain is necessary. Cows that you are trying to dry off should have but 50 lbs. ensilage and two pounds corn and one-half pound of oil-meal. If they are fed all the ensilage they want, it is almost impossible to dry them off. When we began feeding the ensilage, milch cows, all having been milked since March, increased nearly six pounds of milk each, and the quality was also improved. Cows in milk, when you desire to get a large flow, should have 70 lbs. of ensilage and five pounds of oatmeal and corn meal, and one-half pound of linseed meal. Linseed meal should be fed only as a condiment. Keep salt before stock all the time, and cows kept in stables so much of the time should be curried and brushed every day.

The best possible results are obtained by feeding five pounds of dry hay or straw, cut fine, with three pounds of corn meal or other grain and one-half pound linseed meal mixed in with the ensilage; making the daily ration for one milch cow, on an average, as follows: Ensilage, 50 lbs.; cut hay, five pounds, or seven pounds cut straw; corn meal (or its equivalent of other grain), three pounds; linseed meal, one-half pound. Feed one-third of this mixture early in the morning, one third at noon and one-third at night.

We find some cows require very much more food than others. We have cows in our herd that we feed 75 lbs. of ensilage per day, while others will only eat 45 lbs.

In every instance where we have tested the value of ensilage, as compared with either hay or grass, except in the flush of the season, there has been an immediate improvement, both in quantity and quality of milk.

Millet, clover, etc., are no doubt excellent for ensilage, but if the system prevails, corn will be the crop we shall depend upon, because it can be produced so much cheaper, and the yield is so much greater.

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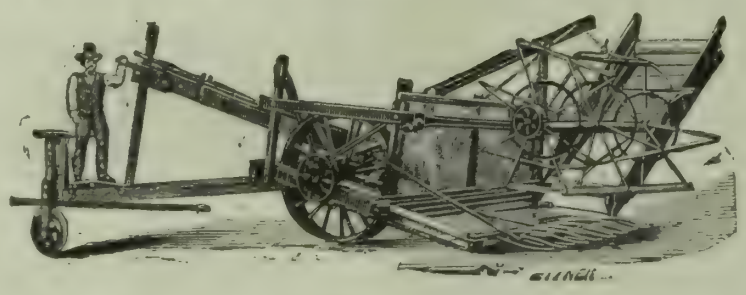

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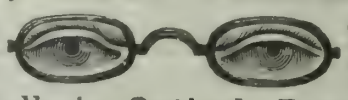
1863  1882

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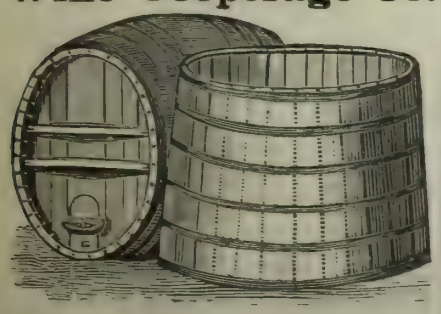

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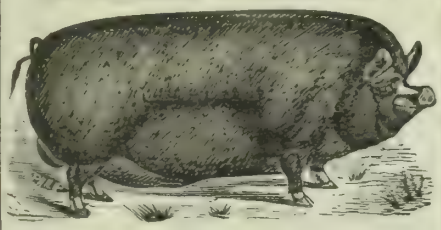

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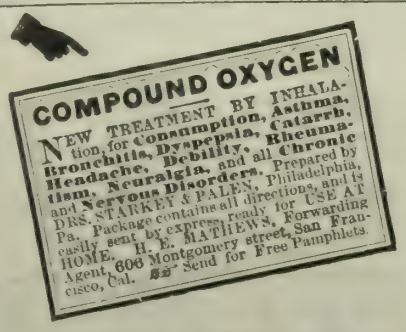

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A Credit to its Friends.

[From M. C. Hawley's *Agriculturist*, June 18, 1882.]

There is a newspaper on this coast which is worthy of special credit. We allude to the PACIFIC RURAL PRESS. It entered its field of usefulness in 1870, not as the first farming journal on this coast, but to fill the want of a first-class, reliable and enterprising home and farm newspaper. Its publishers (A. T. Dewey and W. B. Ewer A. M.), journalists of long and successful experience on this coast and elsewhere, had the means in their hands and the faith in their hearts to issue from the first a handsome, illustrated, ably edited and faithfully conducted advocate of the highest and best interests of agriculturists of all classes on this coast. With all these favorable circumstances, their enterprise was a success from the start. We question if there is a journal in the United States which enters the family circle with both reading and advertising columns freighted with matter more entirely unobjectionable to the purest and tenderest minds of the household. Its circulation extending with remarkable uniformity among the leading, thrifty and intelligent agriculturists of the Pacific coast, has, by its aid added "millions" to the material wealth of its many readers, and to the advancement of the community throughout which it has disseminated its practicable information. Its extra issues, frequently embrace from 24 to 32 pages, the last number (June 3d), being a "Tourists' Edition," containing a map of the "Springs" and other places of resort in California, and a large amount of original and condensed matter concerning the natural and wonderful health resources of our State. Considering the freshness and extent of the original matter contained in its weekly issues, they may be favorably compared with the best agricultural publications of the world. All considered, it is not too much to say that the PACIFIC RURAL PRESS is really a credit to itself, its patrons and the glorious State it represents.

AN extensive conflagration, resulting in the destruction of one of the large warehouses of the Central Pacific railroad, at the old Long wharf, Oakland, the burning of the bark *Great Western* and a large section of the wharf, and great damage to other shipping moored alongside it, occurred shortly after midnight of Monday.

Volunteer Testimonials from Those Who Have Used Booth's Exterminator.

SAN LUIS OBISPO, CAL., August 9th, 1880.

The undersigned Committee appointed by San Luis Obispo Grange, P. of H., No. 28, have used the Squirrel and Gopher Poison prepared by A. R. BOOTH, at the Eagle Drug Store, San Luis Obispo, during the growing season, when there was plenty of green things for squirrels and gophers to live upon, and we find that they take the Poison, above described, at this season of the year, and that the effect is as destructive as could be wished; and it is the cheapest and best Squirrel and Gopher Poison with which we are acquainted, or ever experimented with. Attest E. W. STEELE, A. T. MASON, F. F. WHITE, Com. Sec'y of P. of H., No. 28. L. M. WARDEN.

FASO ROBLES, CAL., January 5th, 1880.

A. R. BOOTH, *Dear Sir:* Have tried one can of your Squirrel Poison, and find it very efficacious in destroying squirrels. Should like two cans more. G. W. BREWSTER.

Our Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

G. W. MCGREW—Santa Clara county.
M. P. OWEN—Santa Cruz county.
J. W. A. WRIGHT—Merced, Tulare and Kern counties.
JARED C. HOAG—California.
B. W. CROWELL—Humboldt and Trinity counties.
H. W. MILLER.

IMPORTANT additions are being continually made in Woodward's Gardens. The grotto walled with aquaria is constantly receiving accessions of new fish and other marine life. The number of sea lions is increased and there is a better chance to study their actions. The pavilion has new varieties of performances. The floral department is replete and the wild animals in good vigor. A day at Woodward's Gardens is a day well spent.

SAMPLE COPIES.—Occasionally we send copies of this paper to persons who we believe would be benefited by subscribing for it, or willing to assist us in extending its circulation. We call the attention of such to our prospectus, terms of subscription, etc., and request that they circulate the copy sent.

LIVERY STABLE IN OAKLAND—We call the attention of farmers visiting Oakland, and others to hire teams or stable teams in Oakland, to the Hay, Sale, Boarding and Livery Stable of T. A. Cunningham, 1368 Broadway, Oakland. Mr. Cunningham (recently from Haywards where he still owns a ranch) has purchased a homestead in Oakland, and will do his best to give satisfaction to his new customers and old friends who may call.

ANNUAL STATISTICIAN (1882.)—"It is the most complete and accurate work of its kind in the world."—*S. F. Call.* Address L. P. McCarty, 502 Taylor St. Price, $4.

NEW GIG OR SULKY.—Something novel and very elegant in the way of a Sulky, may be seen across the way from our office, at the store of Geo. A. Davis, the well-known Agricultural Hardware man. It must be seen to be appreciated. A cut of it will appear in our columns soon. Photographs sent on application to Geo. A. Davis, S. F., or Jacob Price, Sebastopol, who is the inventor of it.

HOW TO STOP THIS PAPER.—It is not a herculean task to stop this paper. Notify the publishers by *letter*. If it comes beyond the time desired, you can depend upon it we do not know that the subscriber wants it stopped. So be sure and send us notice by *letter*.

Cylinder Printing Press for Sale.

A large cylinder Hoe printing press, for country newspaper work, can be bought cheap by addressing

Press, Box 2361, S. F.

S. F. MARKET REPORT.

NOTE—Our quotations are for Wednesday, not Saturday the date which the paper bears.

Weekly Market Review.

DOMESTIC PRODUCE, ETC.

SAN FRANCISCO, Wednesday, June 21, 1882.

Trade has been rather more in amount the past week, although the tone is weak and prices as a rule about the same. The latest from abroad is as follows:

LIVERPOOL, June 20th.—Wheat: California spot lots are steady, at 9s 8d@9s 11d. Cargo lots are 46s 6d for just shipped, 49s for nearly due and 48s 6d for off coast.t

London Wool Market.

LONDON, June 16th.—At the Wool sales to-day 10,500 bales were disposed of, comprising New Zealand, Sydney and Port Phillip. Prices were unchanged.

Eastern Wool Markets.

BOSTON, June 16th.—The Wool market for the pas week has been quiet, although sales foot up a good average, aggregating 2,490,000 pounds.

BOSTON, June 16.—The Wool market the past week has been quiet, although the sales foot up a good average. The transactions of the week include 2,490,000 pounds of all grades and qualities. A lot of 800,000 pounds of Valparaiso carpet has been taken by manufacturers, and this leaves the market almost bare of carpet Wools. New Wool continues to be held at high figures in the interior, but there is a disposition on the part of both dealers and manufacturers to hold back. California Wool has been very quiet, as the prices asked are above the views of buyers. Some small lots of Spring have been sold at 26@33c. Pulled Wool is in fair demand, and has been selling at 45@48c for choice Eastern and Maine and 25@42c for fair and good.

NEW YORK, June 19th.—Domestic Wools have found a continued irregular distribution, and the market still fails to settle in a positive form, though there is not much to encourage the selling interest. The same slack tone is reported on other markets, with occasional transactions taking place at concessions that surprised the buyers. At San Francisco and Texas the holding is about as before, but there is more stock to carry, and a decided falling off in the attendance of buyers. From the West advices at hand report some sales at Michigan at 33@35, and Ohio at 35@38c; but these rates are below the general asking level, and the clip is not moving with freedom as yet. Sales include 51 bales Spring California, at 26c; 25,000 lbs scoured, at 27½@32½; 1,500 lbs scoured, at 64½c.

The Foreign Review.

LONDON, June 20. The *Mark Lane Express*, in its review of the British Grain trade for the past week, says: The weather has been extremely unfavorable. There are very small quantities of native produce to offer. Prices were weaker. Foreign Breadstuffs were depressed. Values were gradually weakening for Flour. There was a very quiet consumptive demand. Maize was weaker, and occasionally 6d cheaper. Cargoes were quiet and drooping. There were 7 fresh arrivals, and 3 were withdrawn, and 4 of the remainder sold. About 20 cargoes are due to arrive this week. The total sales of English Wheat during the past week were 24,652 quarters at 47s 5d ℔ quarter, against 212,929 quarters at 44s 9d ℔ quarter for the corresponding week of last year.

Freights and Charters.

The following is a summary of the engaged and disengaged Wheat tonnage in port and to arrive, according to the latest advices:

In port.	1882.	1881.
Engaged, tons	31,300	41,500
Disengaged, tons	27 000	
To arrive, tons	307,300	308,000
Total	366,600	349,500
Increase for 1882		17,000

The amount of tonnage under engagement yesterday to load Wheat was 26,300 tons, against 36,500 tons for the corresponding date last year, showing a decrease of 10,200 tons. The British ship *G. C. Trufant*, 1,529 tons, is chartered for Wheat to Cork, U. K., or Havre, £2 7s 6d, no reduction for direct port; ship *Jabez Howes*, 1,648 tons, Wheat to Antwerp direct, private, but said to be £2 6s 2d.

BAGS—Sales have been few. On 'Change call, bids and offers were: Calcutta, June, $9.15 bid, $9 25 asked; July, $9.25 asked; July 15th, $9.30 asked. Sale on the Grain Exchange of 25,000 Calcutta, July, $9.25. Bids and offers were: Buyer July, $9.30 bid; Dundee, June or July, $8.85.

BARLEY—Prices for choice old Barley are well maintained, as high as $2 being quoted for fine brewing, and $1 77½ for fine old feed. New Barley is held down to $1.50. Sales on the Produce Exchange call of (tons) 50 No. 1 feed, June, $1.77½; 200, August, $1.23; 100, $1.23; 100, September, $1.22½; 100 December, $1.29; 15, No. 2 feed, new, seller 5, $1.30; 50, $1.40; 100, August, $1.18¾. Bids and offers were: No. 1 brewing, old, September, $2 bid; October, $1.35 bid, $1.40 asked; No. 2 brewing, October, $1.27½ bid, $1.35 asked; No. 1 feed, new, seller 5, $1 47½ bid, $1.55 asked; new, spot, $1.50 bid, $1 50 asked; July, $1.25 bid, $1.27½ asked; October, $1.23¾ bid, $1.26 asked; November, $1.25 bid, $1 29 asked; No. 2 feed, July, $1.16 bid, $1.21 asked; September, $1.15 bid, $1.18 asked; October, $1.18 bid, $1.18½ asked; November, $1.19 bid, $1.20 asked; December, $1.20 bid, $1.21 asked; seller 1882, $1.13½ bid, $1.15 asked; No. 3, Chevalier, July, $1.21 bid, $1.26 asked; October, $1.15 bid, $1.16½ asked. Sales on the afternoon call of 100 No. 2 feed, October, $1.18½; 100, $1.18; 200, November, $1.19; 100, December, $1.20; 50, June, new, $1.40; 100 No. 3, Chevalier, September, $1.17. For seller 1882, No. 2 feed, $1.10 was bid, $1.15 asked. On the Grain Exchange business was livelier than usual, amounting to 1,000 tons No. 1 feed, as follows: 200, August, $1.23¾; 100, September, $1.23; 400, $1.22½; 300, October, $1.23¾.

BEANS Pea and Small White Beans are quotable at $4 25—a reduction of 25c ℔ ctl.

BUCKWHEAT—Buckwheat is unchanged.

CORN—Corn is held about as last week. On the Produce Exchange morning call sale of 100 tons No. 2, October, $1.48½. Bids and offers were: No. 2, seller 1882, $1 25 bid, $1.36½ asked; Nebraska, spot, $1.80 asked. Sales at 3 o'clock of 50 No 2 Yellow, October, $1 52½, and 50, seller 1882, $1.32½.

DAIRY PRODUCE—Butter is in a slightly larger supply and is about 1c cheaper. Cheese is unchanged.

EGGS—Choice fresh eggs go as high as 27½c, but there is much discrimination and some sell down to 24c ℔ doz.

FEED—Bran is doing a little better. Call sales: 100, July, $13.87½; 100, $13 90; 100, November, $14.25. Bids and offers were: June, $14.50 bid, $15.25 asked; December, $13,75 bid, $14.25 asked. Sale on the afternoon call of 100, seller 1882, $13.25.

FRESH MEAT—Prices are generally unchanged from last week. Beef is now in fair supply. Pork is still high.

FRUIT—Peaches are now coming in more freely. Apricots are also abundant. Blackberries sell at 50c@65c ℔ drawer. The first Figs sold on Monday at 50c@35c ℔ lb. Our list gives the latest prices which are changed considerably from last week.

HOPS—A call for supplies from New York has elevated choice Hops to 30c in this market.

HONEY—New Honey is arriving in fine condition, and has sold up to 18c for choice Comb.

OATS—Sales are being made from $1.75 to $2. per ctl, according to quality. Sales on the Produce Exchange call: 100 tons No. 2, October, $1 40. Bids and offers were: Extra Choice, September, $1.55 bid; No. 1 July, $1.50 bid, $1.60 asked; September, $1. 47 bid, $1.50 asked; October, $1.46 bid, $1.48 asked; No 2, September, $1.40 bid, $1.42½ asked; Seller, 1882, $1.34 bid, $1.36½ asked; No. 1, seller 1882, $1.41 bid, $1.42½ asked.

ONIONS.—Onions still range from 40 to 55c per ctl.

POTATOES.—The best Potatoes sell about as last week-$1.25 per ctl. There are more of inferior quality arriving, and sell as low as 40 c.

PROVISIONS.—Rates are higher and the trade is strong.

POULTRY.—Hens and roosters are doing a little better this week.

VEGETABLES.—Full supplies of Fresh Vegetables are now arriving, and rates are shading off. Our list gives the latest rates.

WHEAT.—Wheat is about the same as last week, and rather slow of actual sale. There were no sales on the Produce Exchange call. Bids and offers were: Extra choice, spot, $1.70 bid; No. 1 white, spot, $1.70 asked; October, $1.67½ bid; No. 2 white, August, $1 63 bid, $1.64½ asked; No. 1 Sonora, August, $1 66 bid, $1 68¾ asked; No. 1 white, seller 5, Port Costa, $1.67½ bid, $1.68¾ asked; No. 1 amber, spot, Oakland, $1 70 asked. There were no sales in the afternoon. Business on the Grain Exchange footed up 2,600 tons, as follows: 200 No. 1 white, August, $1.70; 100 No. 2, July, $1.64½; 100 September, $1.63½; 800, $1.63¾; 100, $1.64; 900, October, $1.64; 200, November, $1.64, and 200, $1 64½. For No. 1 white, October, Port Costa, $1 70 was bid, and for No. 2, August, $1 63¾ was bid, $1.64½ asked.

WOOL.—Wool is reported dull, and prices unchanged.

General Merchandise.

WHOLESALE.

WEDNESDAY M., June 21, 1882.

CANDLES.	
Crystal Wax	16 @18
Paraffine	20 @—
Patent Sperm	25 28
CANNED GOODS.	
Asartd Pie Fruits	
2½ lb cans	2 25
Table do	3 50 @ —
Jams and Jellies	3 75 @
Pickles, hf gal	3 25 @
Sardines, qr box	1 67 @
Hf Boxes	2 50@1 90
Merry, Faull & Co's	
Preserved Beef	
2lb, doz	3 25 @3
do 4 lb doz	6 50 @6 —
Preserved Mutton	
2 lb, doz	3 25 @3 50
Beef Tongue	5 75 @6 00
Preserved Ham,	
2 lb, doz	5 50 @5 60
Deviled Ham, 1 lb, doz	3 00 @3 50
do Ham ½ lb doz	2 50 @ —
Boneless Pigs Feet	
3lbs	3 50 @3 75
2 lbs	2 75 @
Spiced Fillets 2 lbs	3 50 @ -
Head Cheese 3 lbs	3 50 @ —
COAL Jobbing.	
Australian, ton.	@ 8 50
Coos Bay	— @ 6 50
Bellingham Bay	@
Seattle	@ 6 50
Cumberland	@13 00
Mt Diablo	@ —
Lehigh	@
Liverpool	@
West Hartley	@ 8 50
Scotch	@ 8 50
Scranton	— @ —
Vancouver Id	@
Wellington	@ 9 00
Charcoal, sack	@
Coke, bush	@ —
COFFEE.	
Sandwich Id lb.	— @
Costa Rica	12 @ 14
Guatemala	12 @ 14
Java	18 @ 20
Manilla	15 @
Ground, in cs	— @ 22½
FISH.	
Sac'to Dry Cod	— @ 5
do in cases	@ 5½
Eastern Cod	7 @ — 7½
Salmon, bbls	7 00 @ 7 50
Hf bbls	3 50 @ 4 00
1 lb cans	1 12½@ 1 22½
Pkld Cod, bbls	— @
Hf bbls	— @ —
Mackerel, No. 1	
Hf bbls	9 50 @ 10 00
In Kits	1 75 @ 1 85
Ex Mess	3 50 @ 4 00
Pickled Herring, box	3 00 @ 3 50
Boston Smoked Herring	65 @ — 70
LIME, etc.	
Plaster, Golden Gate Mills	3 00 @ 3 25
Land Plaster, ton	10 00 @ 12 50
Lime, Snta Cruz bbl	1 25 @ 1 50
Cement, Rosendale	1 75 @ 2 00
Portland	3 75 @ 4 00
NAILS.	
Asartd sizes, keg	3 75 @ 4 00
OILS.	
Pacific Glue Co's Neatsfoot, No. 1	1 00 @1 00
Castor, No. 1	— @1 05
do, No. 2	@ 95
Baker's A A	— @1 30
Olive, Plagnoli	5 25 @5 75
Possel	4 75 @5 25
Palm, lb	9 @ -
Linseed, Raw, bbl	@ 60
Boiled	— @ 65
Cocoanut	80 @ -
China nut, cs	68 @ 69
Sperm	1 40 @
Coast Whales	35 @ —
Polar	— @ —
Lard	— @1 00
Petroleum (110°)	18 @ 22
Petroleum (150°)	28 @ 35
PAINTS.	
Pure White Lead	7¾@ 8
Whiting	1½@
Putty	4 @ 5
Chalk	1½@
Paris White	2½@
Ochre	3½@
Venetian Red	3½@ —
Averil mixd Paint gal	
White & Tints	2 00 @2 00
Green, Blue and Ch Yellow	3 00 @3 50
Light Red	3 00 @3 50
Metallic Roof	1 30 @1 60
RICE.	
China Mixed, lb	4¾@ 5
Hawaiian	4¾@ 5
SALT.	
Cal. Bay, ton	14 00 @22 00
Common	6 50 @14 00
Carmen Id	14 00 @22 00
Liverpool fine	14 00 @20 00
SOAP.	
Castile, lb	9 @ 10
Common brands	4½@ 6
Fancy Brands	7 @ 8
SPICES.	
Cloves, lb	37½@ 40
Cassia	19 @ 20
Nutmegs	85 @ 90
Pepper Grain	15 @ 16
Pimento	16 @ 17
Mustard, Cal ½ lb Glass	— @1 25
SUGAR, ETC.	
Cal. Cube lb	@ 12c
Powdered	— @ 13½
Fine Crushed	@ 12½
Granulated	— @ 12½
Golden C	@ 11
Cal Syrup, kgs	65 @ —
Hawaiian Mol'sses	25 @ 30
TEA.	
Young Hyson, Moyune, etc	40 @ 65
Country pkd Gunpowder & Imperial	35 @ 75
Hyson	30 @ 35½
Fooo-Chow O	27½@ 32
Japan, medium	35 @ 37½

Signal Service Meteorological Report.

SAN FRANCISCO.—Week ending June 20, 1882.

HIGHEST AND LOWEST BAROMETER.

June 14	June 15	June 16	June 17	June 18	June 19	June 20
29.923	29.973	30.036	29.984	29.880	29.991	30.071
29.846	29.916	29.973	29.879	29.834	29.880	29.952

MAXIMUM AND MINIMUM THERMOMETER.

63	63	62	64.5	66	64	63
53	53.5	54	55	55	54	52

MEAN DAILY HUMIDITY.

79.0	79.0	81.7	81.3	83.7	74.0	67.3

PREVAILING WIND.

SW	W	W	SW	SW	SW	W

WIND—MILES TRAVELED.

262	334	329	359	348	390	315

STATE OF WEATHER.

Fair.	Clear.	Fair.	Foggy.	Fair.	Fair.	Clear.

RAINFALL IN TWENTY-FOUR HOURS.

					.02	

Total rain during the season, from July 1, 1881, 16.1 inches.

Domestic Produce.

WHOLESALE.

WEDNESDAY M., June 21, 1882.

BEANS & PEAS.	
Bayo, ctl	2 75 @3 25
Butter	3 75 @4 25
Castor	3 50 @4 00
Pea	4 25 @ —
Red	2 50 @3 00
Pink	2 50 @3 00
Large White	3 50 @3 75
Small White	4 25 @
Lima	4 00 @4 50
Field Peas, Wlkeye	1 5 @1 75
do, green	2 50 @2 25
BROOM CORN.	
Southern	3 @ 3½
Northern	4 @ 6
CHICCORY.	
California	4 @ 4½
German	6½@ 7
DAIRY PRODUCE, ETC.	
BUTTER.	
Cal. Fresh Roll, lb.	27 @ 29
do Fancy Brands	30 @
Pickle Roll	— @ —
Firkin, new	28 @ 29
Eastern	18 @ 20
New York	— @ —
CHEESE.	
Cheese, Cal., lb	12 @ 13½
EGGS.	
Cal. Fresh, doz	24 @ 27½
Ducks	— @ —
Oregon	— @ —
Eastern, by expr'ss	— @ —
Pickled here	— @ —
Utah	— @ —
FEED.	
Bran, ton	14 50 @15 0
Corn Meal	— @38 00
Hay	10 00 @15 00
Middlings	25 00 @26 00
Oil Cake Meal	— @27 50
Straw, bale	62½@— 70
FLOUR.	
Extra, City Mills	5 25 @5 50
do, Co'ntry Mills	4 75 @5 00
do, Oregon	4 75 @5 12½
do, Walla Walla	4 50 @5 00
Superfine	3 50 @4 25
FRESH MEAT.	
Beef, 1st qual'y, lb	7½@ 8
Second	6 @ 7
Third	5 @ 5½
Mutton	3½@ 4
Spring Lamb	6 @ 8
Pork, undressed	6½@ 7½
Dressed	9½@ 10½
Veal	7½@ 8
Milk Calves	7½@ 8
do, choice	— @ 10
GRAIN, ETC.	
Barley, feed, ctl	1 70 @1 77½
do, New	— @1 50
do, Brewing	1 80 @2 00
Chevalier	— @1 70
Buckwheat	1 50 @1 75
Corn, White	— @ —
Yellow	1 75 @1 80
Small Round	— @1 75
Oats	1 85 @1 92
Milling	1 95 @2 00
Rye	2 05 @2 12
Wheat, No. 1	1 67½@1 70
do, No. 2	1 62½@1 65
do, No. 3	1 45 @1 50
Choice Milling	— @1 70
HIDES.	
Hides, dry	19 @ 19
Wet salted	9½@ 11
HONEY, ETC.	
Beeswax, lb	23 @ 25
Honey in comb	17 @ 18
Extracted, light	8 @ 9
do, dark	7 @ 8
HOPS.	
Oregon	20 @ 21
California, new	22 @ 30
Wash Ter	19 @ 20
Old Hops	— @ —
NUTS Jobbing.	
Walnuts, Cal	10 @ 11
do, Chile	7½@ 8
Almonds, hd shl lb	8 @ 10
Soft shell	15 @ 17
Brazil	10 @ 11
Pecans	12 @ 15
Peanuts	6½@ 7
Filberts	14 @ 15
ONIONS.	
Red	— @ -
Silverskin	40 @ 55
Oregon	— @ —
POTATOES.	
New, ctl	65 @1 25
Early Rose	— @ —
Petaluma, ctl	— @ —
Tomales	— @ —
Humboldt	— @
" Kidney	— @ —
" Peachblow	— @ —
Jersey Blue	— @ —
Cuffey Cove	— @ —
River, red	— @
Chile	— @
do, Oregon	— @ --
Oregon Peerless	— @ —
Salt Lake	— @ —
Sweet	— @
POULTRY & GAME.	
Hens, doz	6 50 @ 8 00
Roosters	5 50 @10 50
Broilers	3 50 @ 6 50
Ducks, tame, doz	4 50 @ 6 00
Geese, pair	1 00 @1 25
do, young	1 25 @1 75
Wild Gray, doz.	— @3 00
White do	50 @1 00
Turkeys	13 @ 18
do, Dressed	— @ —
Turkey Feathers, tail and wing, lb.	10 @ 20
Snipe, Eng	1 75 @2 00
do, Common	50 @ 75
Quail, doz	75 @ 90
Rabbits	1 25 @ 1 50
Hare	2 00 @ 2 25
Venison	5 @ 7
PROVISIONS.	
Cal. Bacon, extra clear, lb	15@ 15½
Medium	@ 15½
Light	16@ 18½
Lard	13@ 16
Cal. Smoked Beef	14½@ 15
Shoulders	9½@ 10½
Hams, Cal	14 @ 15
do, Eastern	16 @ 17½
SEEDS.	
Alfalfa	14 @ 16
do Chile	— @ —
Canary	3½@ 4
Clover, Red	14 @ 15
White	45 @ 50
Cotton	— @ 20
Flaxseed	2½@ 3
Hemp	— @ 5
Italian Rye Grass	25 @ --
Perennial	25 @ —
Millet, German	10 @ 12
do, Common	7 @ 10
Mustard, White	1½@ 2
Brown	2½@ 3
Rape	2½@ 2½
Ky Blue Grass	20 @ 25
2d quality	16 @ 18
Sweet V Grass	— @ 75
Orchard	20 @ 25½
Red Top	— @ 15
Hungarian	8 @ 10
Lawn	30 @ 40
Mesquite	10 @ 12½
Timothy	9 @ 10
TALLOW	
Crude, lb	7 @ 7½
Refined	10½@ 11
WOOL ETC (SPRING—1882)	
San Joaquin, free	20 @ 22
do, fair	18 @ 19
do, dusty	15 @ 17
Southern Coast	16 @ 22
Stanislaus & Tuolumne	23 @ 25
Sonoma & Mendo cino	25 @ 27
Nor Sacramento	24 @ 26
Oregon, eastern	22@ 26

Fruits and Vegetables.

[WHOLESALE.]

WEDNESDAY M., June 21, 1882

FRUIT MARKET.	
Apples, bx	1 00 @ 1 25
do, Basket	40 @ 75
Apricots, box	75 @ 1 00
Bananas, bnch	2 50 @ 4 00
Cherries, chst	5 50 @ 9 00
Cherry Plums	@ 50
Cocoanuts, 100	6 00 @ 7 00
Cranberries, bbl	12 50 @14 00
Currants, chst	3 00 @ 4 00
Gooseberries	— 4 @— 8
Limes, Mex	10 00 @12 00
do, Cal, box	— 75 @ 3 50
Lemons, Cal, bx	1 00 @ 2 00
Sicily, box	9 00 @10 00
Australian	— @ — —
Oranges, Cal, bx	4 50 @ 5 00
do, Tahiti M	— @40 00
do, Mexican	15 00 @17 00
do, Loreto	— @ — —
Peaches, box	75 @ 1 50
Pears, bsk	— 25 @— 40
Pineapples, doz	8 00 @ 9 00
Raspberries, cht	8 00 @11 00
Strawberries, chst	8 00 @11 00
DRIED FRUIT.	
Apples, sliced, lb	— @— 10
do, evaporated	— @— 12½
do, quartered	— 6 @— 6½
Apricots	— 18 @— 20
Blackberries	— 14 @— 16
Citron	— 28 @— 30
Dates	— 9 @— 10
Figs, pressed	— 4 @— 6
do, loose	— 3½@— 4
Nectarines	— 9 @— 15
Peaches	— 10 @— 10½
do pared	— 16 @— 19
Pears, sliced	— 9 @— 6½
do whole	— 7 @— 8
Plums	— 6 @— 7
Pitted	— 11 @— 12½
Prunes	— 9 @— 10
Raisins, Cal, bx	— @ 2 50
do, Halves	— @ 2 75
do, Quarters	— @ 3 00
Eighths	— @ 3 25
Zante Currants	— 8 @— 10
VEGETABLES.	
Artichokes, doz	— 10 @— 12
Asparagus, box	— 75 @ 1 00
Beets, ctl	— @— 75
Cabbage, 100 lbs	87½@ 1 00
Carrots, sk	— 65 @— 75
Cauliflower, doz	1 00 @ 1 25
Corn, green	10 @ 20
Cucumbers, doz	12½@ 37½
Egg plant, lb	— @ 15
Garlic, lb	— @— 3
do, pow	1 @ 1½
Lettuce, doz	— 10 @— —
Mushrooms, bx	— @— —
Okra, green, lb	— 35 @— 37½
Peas, green, lb	— @— 1½
do, sweet	— 1½@— 2
Parsnips, lb	— @— 2
Peppers	10 @ 12
do, Chile	15 @ 20
Rhubarb, bx	— 50 @ 1 00
Squash, Marrow fat, ton	— @50 00
String Beans	— 5 @— 6
do, wax	— 5 @— 6
Summer Squash, box	— 50 @ 1 25
Tomatoes	— 5 @— 6
do, Vacaville	— 7 @— 8
Turnips, ctl	— 75 @ 1 00

Retail Groceries, Etc.

WEDNESDAY M. June 21, 1882

Butter, California Choice, lb	45 @ 55
Cheese	17 @ 25
Eastern	25 @ 30
Lard, Cal	— @ 18
Eastern	20 @ 25
Flour, ex fm, bbl	8 00 @8 00
Corn Meal, lb	2½@ 3
Sugar, wh. crushd	12½@ 13½
Light Brown	8 @ 9½
Coffee, Green	23 @ 35
Tea, Fine Black	50 @1 00
Finest Japan	55 @1 00
Candles, Adm'te	15 @ 25
Soap, Cal	7 @ 10
Rice	8 @ 10
Yeast Powdr, doz	1 50 @2 00
Can Oysters, doz	2 00 @3 00
Syrup, S F & cold'n	75 @1 10
Dried Apples, lb	10 @ 15
Gen Prunes	12½@ 20
Figs, Cal	9 @ 10
Peaches	15 @ 25
Oils, Kerosene	50 @ 60
Wines, Old Port	3 50 @5 00
French Claret	1 00 @2 50
Cal. doz bot	2 00 @4 50
Whisky, O K, gal	3 50 @5 00
French Brandy	4 00 @8 00

Bags and Bagging.

[JOBBING PRICES.]

WEDNESDAY M., June 1, 1882

Eng Standrd Wheat	8¾@ 9
Cal Manufacture	
Hand Sewed, 22x36	8½@ 9
20x36	8½@ 82
23x40	12 @13
24x40	12½@13½
Machine Swd 22x36	8½@ 9
Flour Sks, halves	9½@10½
Quarters	6 @ 6½
Eighths	4½@ 4½
Hessian, 60 inch	— @12
45 inch	9½@ 9½
40 inch	8½@ 8½
Wool Sks Hand Swd	
3½ lb	@47
4 lb do	52½@55
Machine Sewed	— @49½
Standard Gunnies	18½@19
Bean Bags	6½@ 7
Twine, Detrick's A	32½@35
" " AA	36 @37

MARCUS C. HAWLEY & CO.,

DEALERS IN

Hardware and Agricultural Implements.

Sole Agents for the following Well-Known Machinery:

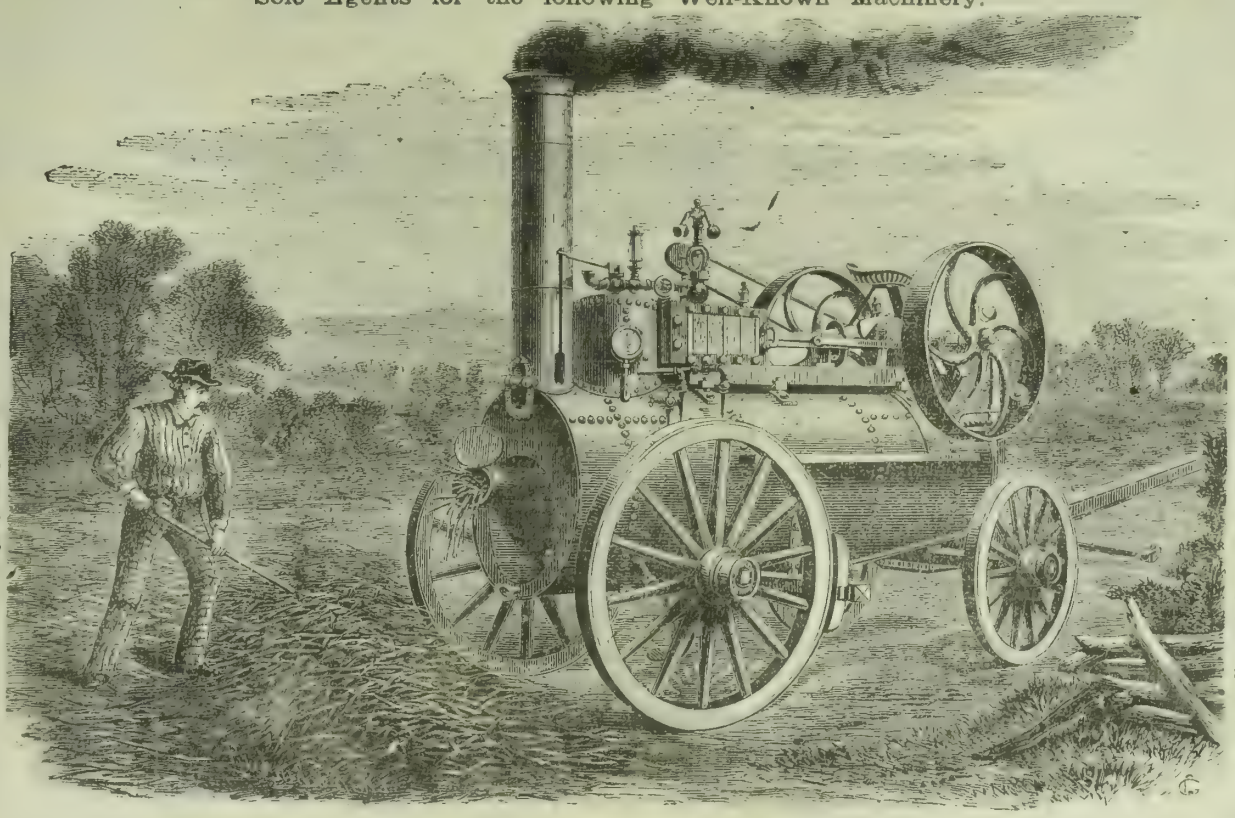
RICE'S

Straw-Burning

ENGINE

Is the only Reliable Straw-Burning Engine Manufactured.

It has this season an improved Safety Valve, and many important improvements have been made in the construction of the Boilers and Running Gear. The Cylinders are made larger this season, thus increasing their Power, while no addition has been made to the price. Rice's Engine is without doubt the safest and most powerful Engine in existence.



THE "Gold Medal" SEPARATOR

THE

Acknowledged Perfection OF THRESHERS,

Requires no encomiums. Ask your neighbor and he will tell you just what we claim for it, that IT SAVES GRAIN WHERE OTHER THRESHERS WASTE IT, AND IT WILL DO MORE WORK IN A GIVEN TIME THAN ANY OTHER THRESHER MADE.

To farmers wanting a Thresher for doing lighter work, we can recommend the

Canton Pitts' Thresher

As the best for the purpose.

HODGES' HAINES' and HODGES' CASE'S HEADERS

Are greatly improved for 1882, and, without doubt, the best in the market. ☞ Send for Catalogue. ☜

MARCUS C. HAWLEY & CO.,

San Francisco, - - - - - - California.

GEO. W. MEADE & CO.,

Office and Warehouse, Nos. 416 and 418 Front Street, San Francisco, Cal.

WHOLESALE DEALERS IN

California and Oregon Sun Dried and Evaporated Fruits,

CALIFORNIA RAISINS AND FRENCH PRUNES.

CALIFORNIA COMB AND EXTRACTED HONEY, ALMONDS, WALNUTS, Etc., Etc.

☞ As the LEADING HOUSE and HEADQUARTERS in all these products, we are ready to correspond with the producers with the view of purchase or contract for the coming crops. REMEMBER, that we purchase outright either at points of production, paying freights, etc., ourselves, or delivered in S. F., freight paid. Remember, also, that in dealing with us you are operating through strictly FIRST HANDS. NO COMMISSIONS charged. NO DELAYS in settlements.

Commission Merchants.

JAS. P. HULME, Late Miller & Co. — JACKSON HART.

HULME & HART,

(Successors to MILLER & CO.,)

Wool, Grain,

AND GENERAL

Commission Merchants.

10 Davis Street, near Market,

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MOORE, FERGUSON & CO.,

COMMISSION MERCHANTS

Grain, Flour, Wool, Etc.

(Members of the San Francisco Produce Exchange).

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☞ Liberal advances made on Consignments

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And Dealers in

CALIFORNIA AND OREGON PRODUCE,

Green and Dried Fruits,

Grain, Wool, Hides. Beans. Potatoes.

404 & 406 DAVIS STREET,

P. O. Box 1936 — SAN FRANCISCO.

CONSIGNMENTS SOLICITED.

WOOL and GRAIN.

J. H. CONGDON & CO.,

Produce & General Commission Merchants

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Orders for Goods not in our line will be carefully purchased by experienced buyers. Ranch Supplies and the best Sacks and Twine, Tobacco, Sheep Dips, etc, furnished to customers. Doing business exclusively on commission. Liberal advances made on consignments at low rates of interest. Personal attention given all consignments. We are agents for the

PARADISE MILLS FLOUR.

The lowest priced first-class Family Flour in the market —try it. All orders from the interior promptly filled.

ESTABLISHED 1860.

P. STEINHAGEN & CO.,

(Successors to J. W. GALE & CO.,)

Fruit and General Commission Merchants,

And Wholesale Dealers in California and Oregon Produce, *Also, Grain, Wool, Hides, Beans, Potatoes, Cheese, Eggs, Butter and Honey.*

Brick Stores: No. 402 Davis Street, and 120 Washington St., S. F.

Prompt Returns. Advance Liberally on Consignments.

PETER MEYER. — LOUIS MEYER.

MEYER BROS. & CO.,

—IMPORTERS AND—

Wholesale Grocers,

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TOBACCO AND CIGARS.

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Front Street Block, bet. Clay & Washington, San Francisco.

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Commission Merchants in Cal. Produce

REFERENCES.—Tradesmen's National Bank, N. Y.; Ellwanger & Barry, Rochester, N. Y.; C. W. Reed; Sacramento, Cal.; A. Lusk & Co., San Francisco, Cal.

REMITTANCES to this office should be made by postal order or registered letter, when practicable; cost of postal order, for $15 or less, 10 cts.; for registered letter, in addition to regular postage (at 3 cts. per half-ounce), 10 cts.

PACIFIC BRANCH.

GEO. D. DORNIN.....Manager.

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INSURES ON GROWING CROPS under a plain and easily understood Contract, also on Grain in Warehouse, Dwellings, Barns and other Farm Property.

ASK FOR A LION POLICY.

RESIDENT AGENTS FOR

THE LION

IN ALL PRINCIPAL LOCALITIES.

J. H. WYTHE, M. D.

Residence: 965 West Street, Oakland. Before 10 A. M., after 5 P. M. | Office: 769 Market St., San Francisco From 11 A. M. to 3 P. M.

The Daily Swelling of Plants.

With delicate means of measurement Herr Kraus has recently proved the existence of a phenomenon in all plant organs, which is connected with their variable water-content, and consists in a periodical swelling and contraction in the 24 hours. Leaves, etc., decrease in thickness from the early morning till the afternoon, when they begin to swell again, attaining a greater size by night than by day (this is well seen in agave, aloe, and the like). Similarly with buds, flowers, green cones, fruits, etc., and with stems and branches. Herr Kaiser had before proved such a period in trunks of trees, and Herr Kraus shows that both wood and bark share in it, independently or unitedly. The various experiments of Herr Kraus—removal of foliage, watering, shutting out light, etc.—lead to explanation of the phenomena by the varying reciprocal action of those factors which bring water into the plant and those which carry it away. By night only the water-absorbing activity of the parts below ground operates; by day the water-consuming activity of the parts above ground besides. The water-consuming activity depends mainly on the foliage and on light (removal of leaves or of light stops the contraction) and consists essentially in transpiration. Herr Kraus states that when a plant is watered these things occur: In a short time, less than an hour, the stem begins to swell; both wood and bark take part in this, the wood always first. The swelling progresses at a pretty quick rate, upward of several meters per second. After some time, perhaps an hour, contraction gradually recurs. The contraction began at the upper part of an acacia after 10 minutes, whereas the swelling at the lower part continued 50 minutes. This shows that the contraction is due to the activity of the foliage, and is gradually extended downward.

Is the Mediterranean of Recent Origin?

The degree of likeness or unlikeness of the fauna and flora in regions more or less apart, may be found to throw light on changes that have occurred in the configuration of land and sea. This line of thought has lately engaged the attention of M. Blanchard. In an interesting paper to the Paris Academy he shows, by numerous examples, how the fauna and flora on the extensive coasts of the Mediterranean present the same general character, which disappears at a short distance from the coast, where the ground rises. If the Mediterranean coasts, he says, were brought together, the most attentive investigator might pass from Europe to Africa, or to Asia, without any trait of living nature making him aware of it. Now, as very moderate obstacles prevent the dissemination of a large number of animals and plants, it seems certain that the Mediterranean would be absolutely impassible for most species.

M. Blanchard infers that the sea has been formed at a recent epoch, in the midst of a region already inhabited by the animals and plants now found on its coast. Recent data as to the marine fauna he regards as confirming this view; for the fauna of the depths appear to be entirely from the Atlantic. The inland sea must at one time have extended much further eastward, and may have communicated with Arctic waters and with the Indian ocean; it appears not to have been in junction with the latter since the miocene epoch. From the geological point of view, M. Daubree was unable to think the Mediterranean of quite recent formation; for there are cretaceous, eocene, and miocene deposits in the space it covers. More recently, in pliocene times, the sea exceeded its present shores, and pliocene deposits are found throughout the extent of the present basin in the numerous islands which rose from the sea at the end of the tertiary epoch.

Hay Rakes

The celebrated hay rakes manufactured by John Dodds, Dayton, Ohio, can be found in large stock at the San Francisco branch, 37 Market St. The old reliable Hollingsworth Rake has taken three Gold Medals at International Fairs. The Red Bird is cheap, simple and a great favorite. The new Reindeer is the strongest and most durable Self-Dump Rake on the market. The iron axle and wheels, rocker-frame movement, adjustable teeth, dumping device and other improvements make them the most desirable Rakes manufactured. See the agent, S. H Gould, before purchasing, 37 Market St., S. F.

Try the Rural Press for 25 Cts. a Month.

Tell your friends that they can have the PACIFIC RURAL PRESS mailed to them one month on trial for 25 cents. Four back Nos. will be added on receipt of 10 cents additional—making eight copies for 35 cents. It is a handsomely printed and illustrated home journal. Mail it to friends abroad.

OUR attention has been called to the remarkable curative properties of Burnham's Abietene. It is not a compound, but a pure distillation from a peculiar kind of fir balsam. It is really one of nature's remedies. Used both internally and externally. As a specific for croup it stands without a rival, and does away with the nauseating effects of hive syrup and emetics. Cures colds, coughs, sore throat, rheumatism, neuralgia, kidney troubles, etc. Used as a liniment for bruises, burns, stiff joints, sprains, poison oak, etc., it has no superior. For circulars and testimonials of its merits address Wm. M. Hickman, druggist, Stockton, Cal. For sale by all druggists. Price, 50 cts. and $1 per bottle.

AGENTS can now grasp a fortune. Outfit worth $10 sent free. Full particulars address E. G. RIDEOUT & Co., 10 Barclay St., N. Y.

F. A. HILL, Superintendent. E. P. PALMER, Secretary.

BENICIA AGRICULTURAL WORKS,

Recently removed from San Leandro, to Benicia, Cal. Formerly Sweepstake Plow Co.

Manufacturers of

AGRICULTURAL IMPLEMENTS,

Gang Plows, Road and Field Single Plows, Iron and Wood Frame Harrows, Cultivators, Seed Sowers, Hay Presses, Haying and Harvesting Machinery, Headers, Iron Farm and Freight Wagons, Patent Iron Gear Spring Wagons,

Spring and Thoroughbrace Wagons

OF ALL KINDS.

Buckboards, Barrows, Store and Warehouse Trucks, Grain Cleaners, Barley Crushers, Eureka Ditching and Grading Plows, Sweepstake Quartz Mills, Etc.

The Largest and Most Complete Agricultural Works on the Coast

[illegible] dred dollars.

WE ALSO MANUFACTURE

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BENICIA AGRICULTURAL WORKS,

Or Agents, BAKER & HAMILTON, San Francisco and Sacramento

Educational.

The Harmon Seminary,

BERKELEY, CAL.

A NEW BOARDING AND DAY SCHOOL, FOR YOUNG LADIES.

Will be conducted by REV. S. S HARMON and Mrs. F. W. HARMON, for the last 10 years associate principals of Washington College

The HARMON SEMINARY will receive girls of all ages [illegible] comprising Primary, Preparatory and Academic. Thorough course in the English branches. The Arts, Music and Modern Languages in charge of well known masters. Special course preparatory to the State University.

The HARMON SEMINARY will be first-class in all respects, and will combine the best educational advantages with home care, guidance and guardianship.

The first year will open August 3, 1882.

For prospectus and other information, address

S. S. HARMON, Berkeley, Cal.,

Or. E. J. WICKSON, 314 Clay st., S. F.

HOPKINS ACADEMY,

Oakland, Cal.

REV H. E. JEWETT............Principal.

This Institution, heretofore known as Golden Gate Academy will open Tuesday A. M., July 18, 1882. The building and grounds are undergoing extensive improvements. Classical Literary and English courses. Telegraphy taught. Boys and young men received. Send for prospectus to **H. E. JEWETT, Principal.**

THE HOME SCHOOL
—FOR—
YOUNG LADIES,

1825 Telegraph Avenue, Oakland, Cal.

The next year will begin on

WEDNESDAY, JULY 26, 1882,

H. N. FIELD, Principal.

QUALITY NOT QUANTITY. OUR NEW PACK FOR 1882, 50 ALL Chromo Cards. Extra fine Stock! Artistic designs of Swiss Floral, Sea-View, Wreath, Landscape, Gold and Silver Panel, Bird Motto, Butterfly, Moonlight, Summer and Winter Scenes, all in beautiful [not gaudy] colors, with your name in fancy type, 10c. Sample Book of 90 costly Styles for 1882 25c. 40 per cent paid to Ag'ts, or beautiful prizes given for clubs. Particulars with every order. CAXTON PRINTING CO. Northford Conn.

Engraving. Superior Wood and Metal Engraving, Electrotyping and Stereotyping done at the office of the MINING AND SCIENTIFIC PRESS, San Francisco, at favorable rates

Pacific Congress Springs.

This Celebrated Resort for PLEASURE and HEALTH will be opened for the reception of guests

On and after April 15th

Stages connect [illegible] with MORNING and AFTERNOON trains of the Narrow Gauge Railroad

THROUGH TICKETS

Can be purchased at FERRY LANDING, foot of Market street, San Francisco, PRICE, $2.75

ROOMS CAN BE SECURED

And arrangements made at any time by addressing

LEWIS A. SAGE,

Saratoga, Cal. Proprietor

BARTLETT SPRINGS.

Situated 16 Miles Northeast of Clear Lake, in Lake County.

Forty miles West of Williams, Colusa county, on the [illegible] road from Colusa to [illegible].

Three Different Routes to the Springs,

One via WILLIAMS, one via CLOVERDALE LAKEPORT and UPPER LAKE, one via CALISTOGA and LOWER LAKE, and all connecting with the train

LEAVING SAN FRANCISCO AT 8 A. M.

Fare will not exceed TWELVE Dollars either way. Daily Mail via LAKEPORT, Semi-weekly mail via WILLIAMS. Post Office, Express Office and Telegraph Office here all the year through.

C. R. CLARKE, J. C. CRIGLER, Proprietors.

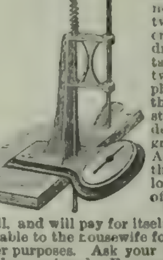
HARBIN HOT SULPHUR SPRINGS,

LAKE COUNTY, CAL.

The Springs are now open for the reception of guests. Stages leave Calistoga daily, on arrival of morning trains from San Francisco and Sacramento. Stage Fare Reduced to $3. RICHARD WILLIAMS Proprietor

Excelsior Fruit Pitter.

Invented by A. Donatella.



This machine recommends itself by the following good qualities: Rapidity of work, one operator doing the work of four with knives. It cleans the pit perfectly, wastes no fruit, and leaves the plum in two equal parts. It is easily operated. Makes no litter, the pits dropping in a vessel under the table. The plum remaining between thumb and finger can be placed directly on the riddle for the Dryer. Simplicity of construction. Cannot get out of order. Will work equally well on green or very ripe Plums. Prunes, Apricots or Nectarines pitted with this machine dry more evenly and look nicer than when chipped off with a knife.

The low price comes within reach of all, and will pay for itself with two day's work. It is invaluable to the housewife for preparing fruit for canning and other purposes. Ask your hardware dealer for it. Try it and be convinced. For particulars address,

A. DONATELLA, Healdsburg, Cal.

BY TELEPHONE.—Subscribers, advertisers and other patrons of this office can address orders, or make appointments with the proprietors or agents by telephone, as we are connected with the central system in San Francisco.

Summer Resorts.

Highland Springs

SANITARIUM.

This popular and healthful summer and winter resort for families, pleasure seekers and invalids, is situated in

Lake County, 25 Miles from Cloverdale,

Seven miles south of Lakeport, four miles of Kelseyville, and in sight of Clear Lake, at an altitude of 1700 feet, and is Sheltered from the Chilling Coast Winds and Fogs by mountains 1600 feet in hight, which for

Grandeur and Beauty of Scenery are Unsurpassed on the Pacific Coast,

While the Beneficial Effects of its Mineral Waters are equal to any in the United States or Europe.

MAGIC SPRING,

Analyzed by Prof. W. B. Rising, University of California

TEMPERATURE............85°

	Grains per U. S. Gallon.
Chloride of Sodium	1.290
Bicarbonate of Potash	0.544
Bicarbonate of Soda	21.763
Bicarbonate of Lime	60.411
Bicarbonate of Magnesia	79.213
Bicarbonate of Iron	0.973
Carbonate of Manganese	trace
Silica	7.293
Alumina	0.169
Organic Matter	trace
Free Carbonic Acid	74.402
Total	237.262

W. B. RISING, Berkeley, April 3, 1882

Dr. C. M. BATES (formerly of San Francisco), having [illegible] purchase and lease of these [illegible] Springs, will devote all necessary time and attention to persons requiring the use of the waters.

Good Hotel and Cottage Accommodations

Carriages, Buggies and Saddle Horses Furnished at Reasonable Rates.

[illegible]

On Tuesdays, Thursdays and Saturdays

[illegible] with private conveyance, if needed.

For further particulars, address

DR. C. M. BATES,

Highland Springs, Lake Co. (via Cloverdale).

SODA BAY HOTEL,

A NEW AND BEAUTIFUL

SUMMER RESORT.

SODA BAY, on Clear Lake, Lake county, Cal. [illegible] Soda Bay.

[illegible] are made to Borax Lake, Sulphur Banks [illegible] to the summit of [illegible].

Ample provisions are made for the entertainment of the patrons of this popular resort. The Hotel and the cottages are furnished with comfort and taste. Among the diversions [illegible] yacht and steamer [illegible] fishing and hunting, and a beautiful pavilion for music and dancing; in short nothing is lacking for the enjoyment of those who seek rest and recuperation, or interesting and healthful recreation beneath the shady oaks and by the ever beautiful lake, in a climate which, for health and for comfort, is acknowledged to be unsurpassed, if, indeed, equaled in the world. Billiards, croquet, ten pins, and baths free.

To reach Soda Bay from San Francisco, go by train to Calistoga or Cloverdale, thence by stage to Kelseyville at which place a carriage from the hotel will meet passengers. Through time, 11 hours. For further information address

A. K. GREGG, Uncle Sam P. O., Lake Co., Cal.

MAMMOTH GROVE HOTEL,

Calaveras Big Trees,

CALAVERAS COUNTY, CAL.

J. L. SPERRY, - - Proprietor.

Tourists can find at the Calaveras Group larger, taller and a greater number of Big Trees than can be found in all other groves of California combined.

THE MAMMOTH GROVE HOTEL is situated right in the Calaveras Grove. This grove contains 93 of these giants of the forest.

THE SOUTH PARK GROVE

Is six miles distant, and contains 1,380 Big Trees of immense size. This grove has been inaccessible to visitors until quite recently. A good horseback road now connects the two groves. There is the finest trout fishing and hunting in the immediate vicinity.

Those seeking health or pleasure can find the very best climate in California, and first-class hotel accomodations.

Fare from San Francisco, $11; from Stockton, $8. Leave Stockton at 8 o'clock A. M.; by rail to Milton. Thence by stage coach to Trees—same day.

Stage to and from Yosemite leaves and arrives daily.

No. 3 Montgomery St., S. F.

How the News Came to Marysville and Yuba City.

Shortly after eight o'clock Mayor Bingham received the following dispatch: "Judge Temple has decided the Gold Run case in favor of the valley. He sustains the injunction." The news spread like an electric flash. Everything else was forgotten; merchants left customers standing and rushed to the street to hear the tidings, and soon cheer after cheer resounded from every quarter. A huge bonfire was started on the corner of Third and D streets, and in a half an hour a dozen were burning in all parts of the city. Then the bells began to peal, and the factory whistles added their shrill shrieks to the tumult. Over the Sierras, where the hydraulic miners carry on their operations, hung a cloud, pall-like in its blackness and density, while from its inky depths came vivid flashes of lightning—a phenomenon so rare in this country. An enthusiastic individual grasped our arm and said: "See, the very heavens ratify Judge Temple's righteous decision."

Soon the strains of martial music called the throng together, and a procession was improvised, which moved to Mayor Bingham's residence, where he was serenaded, and responded in a few timely and enthusiastic remarks. He was loudly cheered, then followed cheers for Judge Temple, for Attorney-General Hart, for our attorneys in the case, and cheers for everybody. Dr. Stone was next visited, was greeted with enthusiasm, and responded enthusiastically. Then all the vehicles that could be obtained were pressed into service, and the band, accompanied by upwards of a hundred persons, started for Judge Keyser's residence in Yuba City. The rain poured down in torrents, or the whole crowd would have come. The Judge's residence was taken by storm, and he responded to the overture in enthusiastic and glowing terms. Toasts were drank to every person and organization that had taken part in this movement on behalf of the valley. The *Sutter County Farmer* was toasted and eulogized in glowing terms. Judge Keyser, Col. E. A. Belcher and C. E. Sexey did most of the talking.

The entire scene is beyond description. The peal of the bells, strains of martial music, the shrieks of steam whistles, enthusiastic speeches, the cheers from hundreds of throats, the glare of numerous bonfires, commingled with the flash of celestial pyrotechnics and the roll of the "thunder drum of heaven," formed a scene seldom witnessed on the Pacific coast. All was enthusiasm. Some one told Mr. Wightman that the boys were stealing his header boxes. "Let them go it, they can burn a machine if they want to," was his response.

All day Tuesday the excitement ran high. Farmers, dissatisfied with the meager intimations they had received, came in to learn more. By Tuesday noon, nearly all the residents of this county had learned the news. The opinion generally expressed is that of intense satisfaction. "The Supreme Court cannot go back of the Black Diamond decision," is frequently heard. "They would be the laughing stock of all Christendom if they did." "Well, Judge Temple found the hydraulic miners were injuring the rivers, and Attorney-General Hart would be derelict in his duty did he not protect the interests of the State," says another. It is a time for rejoicing, and the *Farmer* rejoices that the dark clouds that have hung over this fertile valley are being dispelled, and knows that beneath the benignant beams of the sun of justice, no more happy and prosperous community will be found upon the face of the earth than this.—*Sutter County Farmer.*

THE Pension Appropriation bill, appropriating $100,000,000, passed the House.

Progressive and Substantial.

The SCIENTIFIC PRESS Patent Agency was established in 1860, and has ever since been the leading Patent Agency on this side of the continent. Thousands of patents have been secured through this old and reliable Agency; and, from personal experience, most of the leading inventors of this coast can testify their great satisfaction at the promptness and dispatch with which their business has been put through, and the best patent claims admissible obtained.

There are few solicitors of Patents in the United States who have been as largely, or so continuously and successfully engaged in the soliciting of patents.

As editors and publishers of leading scientific, mechanical and industrial newspapers for the past 20 years on this coast, thay have superior facilities for acquiring and giving information upon all subjects of discovery, whether in the line of the farmer, the miner, the manufacturer, the mechanic or the scientific inventor.

Their files of illustrated, scientific and mechanical publications afford an encyclopædia of useful knowledge pertaining to the development of all branches of business upon this coast for many years past.

Their library of books on home and foreign patent laws; United States and Foreign Patent Office Reports; mechanical, industrial, and scientific text books, encyclopedias, etc., is one of the most complete in the United States outside of Washington.

Here an inventor can secure a knowledge of the State of the art, in any particular class he wishes to investigate and improve in, that will greatly aid him in his work of inventing.

The Patent Agency is favorably located and connected with the MINING AND SCIENTIFIC PRESS and the PACIFIC RURAL PRESS offices, at No. 252 Market St., S. F., journals that are well known among the ably conducted and widely circulated progressive American weeklies of the day.

Mixing and Applying Paints.

The composition of paints should be governed by the nature of the material to be painted. Thus the paints respectively best adapted for painting wood and iron differ considerably. The kind of surface to be covered, *i. e.*, a porous surface requires more oil than one that is impervious. The nature and appearance of the work to be done—delicate tints require colorless oil; a flatted surface must be painted without oil, which gives gloss to a shining surface. Again, paint used for surfaces intended to be varnished must contain a minimum of oil. The climate, and the degree of exposure to which the work will be subjected; thus, for outside work boiled oil is used, because it weathers better than raw oil. Turpentine is avoided as much as possible, because it evaporates and does not last; if, however, the work is to be exposed to the sun, turpentine is necessary to prevent the paint from blistering. The skill of the painter also effects the composition; a good workman can lay on even coats with a smaller quantity of oil and turpentine than a man who is unskillful; extra turpentine especially, is often added to save labor. The quality of the materials often makes an important difference in the proportions used. Thus, more oil and turpentine will combine with pure, than with impure white lead; thick oil must be used in greater quantity than thin oil. When paint is purchased ready ground in oil, a soft paste will require less turpentine and oil for thinning than a thick paste. Lastly, the different coats of paint vary in their composition; the first coat laid on to new work requires a good deal of oil to soak into the material; on old work, the first coat requires turpentine to make it adhere; the intermediate coats contain a proportion of turpentine to make them work smoothly, and to the final coats the coloring materials are added, the remainder of the ingredients being varied as already described, according as the surface is to be glossy or flatted.

The exact proportion of the ingredients to be used in mixing paints varies according to their quality, the nature of the work required, the climate, and other considerations. The composition of the paint for the different coats also differs considerably.

The area which a given quantity of paint will cover depends upon the nature of the surface to which it is applied, the proportion of the ingredients and the state of the weather. When the work is required to dry quickly, more turpentine is added to all the coats.

In repainting old work, two coats are generally required, the old painting being considered as priming. Sometimes another coat may be deemed necessary.

For old outside work exposed to the sun, and in cold weather, more turpentine should be used to make the paint flow freely.

All priming should be rubbed out as far as possible, for if it is flowed out loosely or laid on thick, it will be apt to blister and run. In priming over spots, however, where patching is being done, it may sometimes be necessary to leave the coat thick or heavy, for new work can never be re-touched and look well after the work is second coated or finished; for such retouching would show and spoil the whole work. In priming, the paint should flow easily, and the brush should be pressed on to the wood so that the paint will be forced into the pores. In all cases it is a great saving of time to cover as large a surface as convenient before smoothing or finishing off. All work on the same surface should be finished at the one application, if possible, for "laps"—which form the junctions of work done at different times—should be avoided wherever they can, as they are sure to disfigure the work where they exist. Of course, it is sometimes impossible to avoid laps, but where they must occur, care should be taken to make the connection with as little "lap" as possible, or it will be certain to show through the work when finished. The defect, if occurring during the second coating, will show much worse than in the priming coat.

In painting, like everything else, a system must be followed to make much headway. Experience, perhaps, is the only effective teacher in this matter; and any rules laid down by us will have but little effect, if the operator does not, or can not systematize. The workman who follows a system will do nearly twice as much work with less labor as the man who works only by the rule of thumb. In painting blinds, lattices, railings, cut brackets or other similar work, some method of operation should be adopted. A little observation on the part of the operator will soon teach him the best methods to adopt in doing any particular kind of work. We copy the above from a little work just published in New York, and entitled "Hints for Painters, Decorators and Paper Hangers."

MUCILAGE.—Persons are often at a loss for a very strong mucilage, having sufficient power of tenacity to fasten sheets of pasteboard together. The following cement is recommended by a scientific authority: Melt together equal parts of pitch and gutta percha. To nine parts of this add three parts of boiled oil and one-fifth part litharge. Continue the heat with stirring until a thorough union of the ingredients is effected. Apply the mixture hot, or somewhat cooled, and thinned with a small quantity of benzole or turpentine oil.

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Pacific Coast Weather for the Week.

[Furnished for publication in the PRESS by NELSON GEROM, Sergt. Signal Service Corps, U. S. A.]

The following is a summary of the rainfall for each day of the week ending 11:58 A.M. Wednesday, June 21st, at noon, for the stations named:

Date.	Olympia.	Portland.	Roseburg	Red Bluff	Sacram'to	San Francisco.	Visalia.	Los Angeles.	San Diego.
Thursday.	.00	.00	.00	.00	.00	.00	.00	.00	.00
Friday....	.00	.00	.00	.00	.00	.00	.01	.00	.00
Saturday.	.00	.00	.00	.00	.00	.00	.00	.00	.00
Sunday ..	.04	.00	.00	.00	.00	.00	.00	.00	.00
Monday..	.00	.06	.03	.00	.00	.02	.00	.00	.00
Tuesday..	.02	.74	.07	.00	.00	.00	.00	.00	.00
Wed'sday.	.23	.02	.00	.00	.00	.00	.00	.00	.00
Totals....	.29	.82	.10	.00	.00	.02	.01	.00	.00

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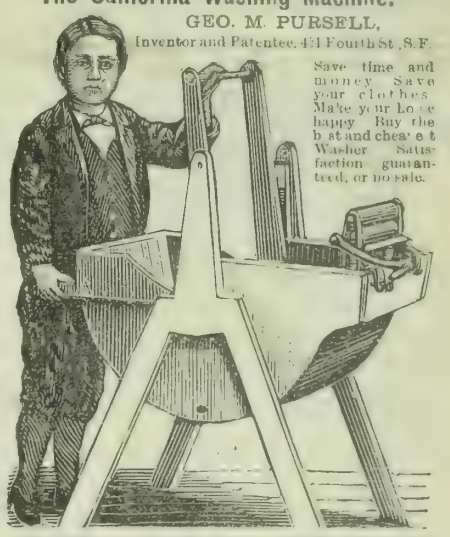

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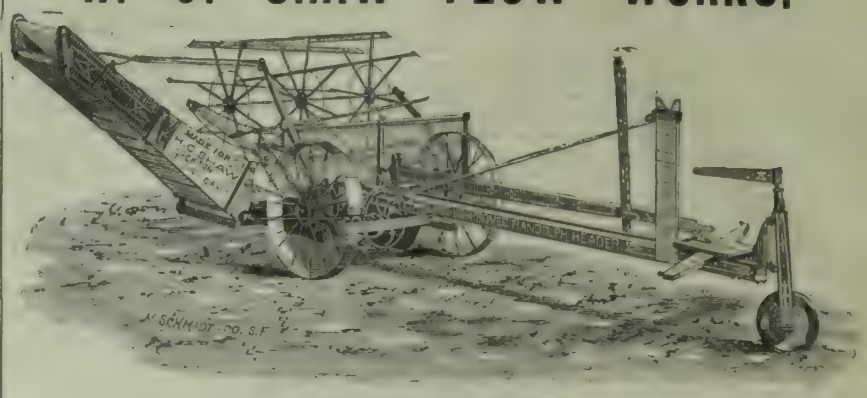

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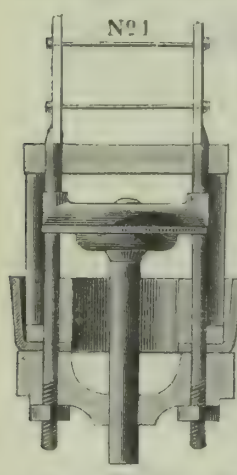

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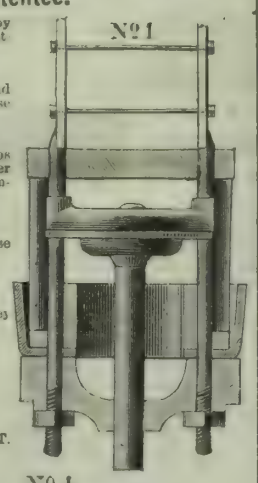

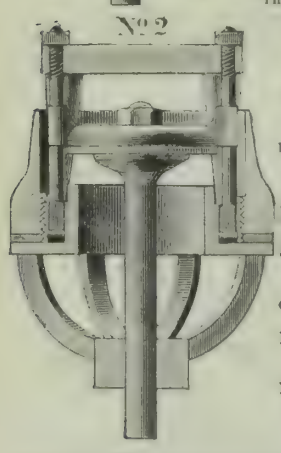

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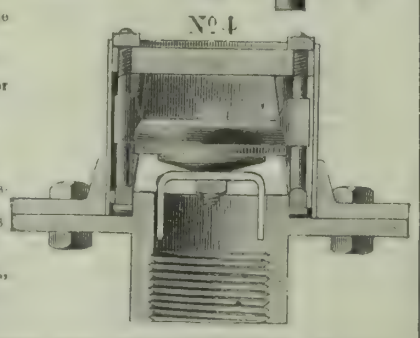

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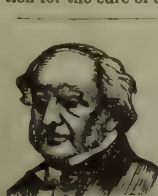

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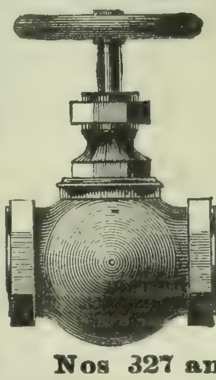

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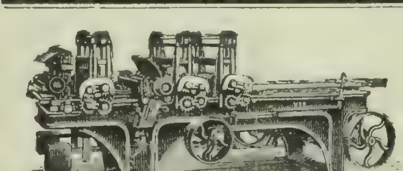

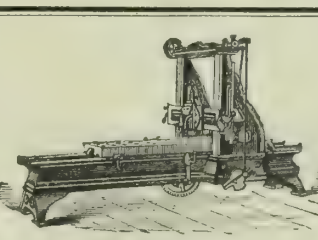

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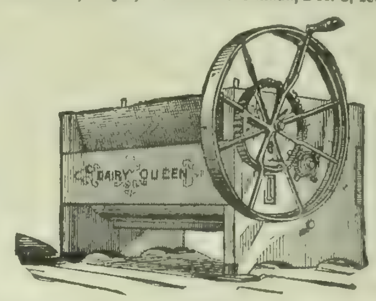

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INDEX TO VOLUME XXIII.

OF THE

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A

[illegible]
Academy of Sciences....493
[illegible]
Ants on Orange Trees....468
Aphis, Plum, Dose for..
Aphis, Woolly... 8, 26, 283
Apple Crop.
Apple Geometer 264, 312
Apricot Gum Disease....503
Army Worms.......
Aunt Sarah's Fortune.

B

Bat Guano
Beet Contracts..........148
Bermuda Grass.169, 321, 488
*Big Trees, Calaveras....473
Birds and Insects.37, 74, 170
Blackleg.........176
Bluestone ..3, 30, 58, 98, 114 115, 152, 153, 170
Boar, Use a Good........131
Boilers, Cleaning.....76, 170
tion 257
Borers..........8½, 26, 39
Bread, Copper in.
Burns, Soda for.........195
Burr Clover.............169
*Butter, Cooling by evaporation
Butter Outlet.
†Butter.

C

Calaveras County..
California Climate....... 1
Camping from Valley to Coast
464, 465
Catalpa ....
Cattle Feeding......147,
Cattle Interest of U. S.....
Cattle, Nevada.........101
*Cells, Growth of...153, 177
†Ceres, Death of.......350
†Chairs, Three Little....418
Cheese Factory Report.. 24

Cheese, Gilroy 20
†Childhood, Sweet.......134
ner....................419
Children, Training...78, 135
100, 113, 117, 189, 233, 265
Citrus Fair, San Diego...172
Citrus Fruits, Profits in..265
Color Blindness.....151, 356
*Columbia, Scene on.... 57
Colusa County..4, 20, 40, 60 100, 116, 132, 148, 172, 236 260, 308, 324, 348, 416, 432
Cook in Exile..........175
308, 309, 324
Corn Popping..........170
Corn, Yield per Acre....132
Cotton in California...20, 64 147
Cotton Seed Oil......... 7
Country School-Yards...398
Cow Treated Like a Lady.263

D

Dairy Products, Shipping.152
Debris Decision.........489
Debris Question.149, 190, 214
De Long, Death of 369
Diphtheria..23, 135, 334, 395
Donner Lake..........437
Dyspepsia 7

E

Eads' Ship Railway..176, 181
Hatching 483
El Dorado County 4, 148, 372
Electrical Toy..........134
Electricity as Motor.....200
Electric Light 234, 370
El Sobrante Decision....149
Engines, Enright's 346
Eucalyptus............ 82
Eucalyptus, Hardy......136
Eucalyptus Timber..482, 502
Evaporation and Seepage. 45

F

Face Worms........119, 395
Fairs, Judging at....294, 330
*Farm Engineering..158, 223
Farm, Letter from the...466
Farmers and Saloons.. .286
Farming, Old and New...148
†Fern, Petrified......... 78
Ferrets.................282
Flail, Man With.........287
Flirting................ 62

Flowers at Christmas Time
*Flume on Cliff 81
Foolish Mistake......... 78
Forests and Census......281
Forest Fires, to Prevent.431
Fresno County..4, 38, 40, 60 76, 116, 192, 216, 236, 322 324, 361, 377, 392, 434
Friendship, Silence of...394
Frost, Severe.......389, 416
Frost and Smoke........417
Fruit, California, at the East
Fruit, Cost of..27, 49, 74, 101
Fruit, Disinfection of...104 120, 221
Fruit, Dried............337
Fruit Growers' Convention 8½, 26
Fruit Packing.......193, 337
*Fruit Shipping Trade...442
Fungi on Forest Trees...463
Fungi on Plants..2, 152, 463

G

Gas Lime, Use of
Girls, Education of..350, 486
Girls, Folly of..........311
Glacier Movement ...62, 234
Grain Call Business..104, 113 161, 220, 353, 396, 413
Grain, Stages of Nutrition
Grange and College of Agriculture..........392
Grange, The............260
Grange, Alhambra. 324, 372
Grange Business Association..76, 100, 372, 392, 416
Grange Incorporations...416
Grange, Floral Tribute..
Grange, Eden..........
Grange, Healdsburg.
Grange Lecturers.
Grange, National.. ..4, 20
Grange Leaflets.... 432, 484
Grange Notes......
Grange, Pescadero
Grange, Placerville ..40, 372
Grange, Sonoma
Grange, Temescal. .116,
Grange, Sacramento....
Grange, Santa Cruz
Grangers' Bank......9½,
Grange, Oregon.......324
Grange Principles.......464
Grange, Walnut Creek 461
Grape Grafting Machines..........137
Grape Rot.
Gum, Sweet..........371
Grasses, California..10, 104
Grass Crop, Value of....369
Guernsey Cattle........233

H

Harvey's Deed 134
Hay in California...328, 352
Hay and Climate........321
Hay, Stock of..........321
Hay in U. S...........328
Hay in Georgia.........329
Health in Town and Country
*Herald Island..........221
Hessian Fly............369
Hog Pasture........129, 235
Hop Growing...236, 322, 372
Hop Plant Diseases..129, 196
Hops, Russian River.416, 432
*Horse Breeding Farm, Dunham's.........113
*Horse Power Pump, Bebee's 45
Horticultural Society,
*House, a Poem....
House Cleaning.....
Humboldt County..
Husbandman, The.
Haywards in Trade and

I

Immigration Association 49, 81, 137, 233, 345, 473
Incubator, Pacific

Incubators, Notes on
Infants' Food
Insects and Colors.......294
Inventors and Agriculture.................. 1
Inyo County...........223
Irrigation..20, 39, 60, 97, 148 149, 176, 266, 322, 372, 405 416
Irrigation, Lines for Ditches.............120
Irrigation Surveys 307
*Isthmus Canals....450, 469

J

Jersey Values. 241
Jerseys, Yerba Buena....330
John's Joke............194
Jonathan Niles.........103
Jute.................. 81

K

*Kennel Surprised ... .365
Kern County..20, 46, 100, 172 216, 236, 348, 484, 505
Kerosene Butter.....312
Kittenpaws 62

L

Lace, Cleaning.......... 63
Lady-Birds.............488
Lake County...4, 40, 76, 116 172, 189, 324, 346, 390, 461
Lassen County..130, 216, 484
Lemon, Lake County....189
Lemon Ice
Lemons, Imported.......290
Library Without Novels..507
Librocedrus Decurrens ..508
Lime in Germination....345
Linnet Nuisance...18, 20, 74 136, 347
†Longfellow's Last Poem..394
Los Angeles County.4, 18, 20 40, 60, 76, 100, 116, 132, 148 149, 170, 172, 192, 216, 236 264, 308, 324, 348, 372, 392 416, 432, 464, 484, 505
†Love of the Old 262
Lumber, Days Cutting. .345
Lumber on Sierras 373
Lye for Insects..116, 120, 396

M

Malarial Poison.....263, 327
Mammoths............289
Mangold Growing...221, 307
†Man, What Makes a.... 62
Market, Oakland Free...432
Mars, Canals on.........398
Mary's Recompense. 262
†May is here...........350
Meat and Nervous Diseases 487
416, 432, 465, 484
Merced County.20, 40, 60, 77
Meteorological..32, 300, 320
Microscopes, Improvements 307
Microscope Power 179
Mildews...2, 8½, 21, 325, 372
Milk, Fat in............179
Mineral Lands, Timber on
Mineral Springs of California.......436, 438, 450
Moisture and Fruit Preservation 481
Moon, Origin of,.... ...198
†Mother, Kissed His.....102
Mother...........174, 194
†Mother's Work.........466
Molds.................. 2
Mountain Lakes, California.............437
Mouth Disinfectant......356
Mrs. Perry, No Third....286
Mt. Diablo Valley.......306

N

Napa County...4, 20, 40, 100 116, 149, 192, 324, 348, 390
Nevada 101, 133, 309
Nevada County Notes...502
Newspaper, American...294
North Wind 64
Nurserymen's Convention 450

O

Oaks, Large 417
Oak Trees, Keep Your...414
Oats 17
Oat Straw in Dairy......147
†Ojai, The..........22, 324
Oleomargarine.. 73, 157, 177 240, 288, 393
Olive Growing..
Olive Pickling..........306
Olive Oil, Adulterated...306
O'Neil, Death of Owen...264

Oranges, California, in New York
*Oranges, Riverside..264, 270
Oranges, Solano....... 21
Orange, The King.......
Orchard, Housetop..... 120
Orchards, Care of..4, 74, 154 234, 306
Orchards, Yields 57
Organs, Manufacture of .450
Orizaba, Legend of......434
Order
Oregon Notes
Organist, Mysterious....
Our Livestock Interest. .508
Out of the Common.....
Overwork............... 43

P

Pacheco Valley..........347
Packages, Fruit
Packers' Exchange
Pamela's Faculty 506
*Paso Robles Springs
Pasturage, Wild 361
Patents, Recent...32, 52, 208 237, 296, 338, 360, 400,
Peach Trees Killed
People's Representatives.
Piece That was Lost..... 4
Pillow of Thorns .....
Pin Worms.............
*Plains, Crossing the....241
Plants, Growth of 152, 177
Pleasants' Valley ...
†Plow, King of the.....
Plumbago ....
Poisonous Plants
Poland China Hogs. ..171
Pomological Society ..323
Population of Globe
*Portland.......... 37
Potatoes, Potash for.....
Poultry, Care of..19, 59,
Poultry Diseases....292, 396
Poultry House, Bayley's.281
Poultry, Product of...22,
Poultry, Thoroughbred 50,
†Press and Plow.........
Princeton Reunion......247
Principal and Interest. .374
Probate Confiscation..
Pruning 8½
Pruning, Summer....
*Public Lands, The...
*Pumps, Ruhl's......
Pyrethrum Growing..
Price of Wheat in S. F....504
Price of Wheat Bags in S. F.

R

Railroad, National ......
Rainfall and Ring-Growths.............
Rainfall Table........84, 85
Raisin Jam 239
Raisins, California..4, 17, 60, 132, 265
Raisin Making in Malaga..503
Rams, Selection of 323
Raspberry, Varieties.....397
Recipes .. 23, 43, 63, 79, 151, 195, 219, 239, 263, 287 311, 327, 351, 375, 395, 467, 487
Redlands, Colony of.436, 453
Redwood.................193
Resorts, Fairs to........433
Resorts, Pleasure and Health
Resorts, Map with Routes to
Rheumatism, Salycylic Acid
Riverside Fair Report
Riverside Progress 270
Roses, Prizes for New...
Roses, Santa Barbara....400
Roses, Santa Cruz.......470
Rose's Stock Farm 285
Rural Improvement.....
Rye Bread 7

S

Sackett School..........464
Sacramento County..20, 100 132, 173, 216, 308, 416
Salmon in Carquinez Straits...............346
Sam Sperry's Pension....150
282, 349, 373, 393
San Bernardino County.. 20 40, 60, 77, 100, 132, 149, 372
San Diego County
San Gabriel Mission . .257
San Joaquin County ..20, 41 77, 173, 217, 309, 432, 465
20, 132, 216, 237, 261, 393
San Mateo County ..149, 349
100, 172, 192, 193, 216, 235 282, 309, 372, 465, 481
Santa Clara County....4, 116, 149, 216, 324, 345, 349 373, 393, 400, 405, 505
Santa Cruz Mountains...431

*Sap Circulation.........153
Sardines, Preparing 7
Saws, Safety Shield......405
Scale Insect Parasites.24, 488
Scales, Quarantine.......372
49
Science Club..43, 79, 119, 154 195, 239, 287, 398, 467
Science, Value to All....431
Seed Growing 149, 461
Settlers, ...481
Shark Skins, Use of......503
145, 216, 260, 313, 416, 485
Sheep, California ...307, 312
Sheep in Arizona........149
Sheep Breeding.........323
Sheep in Vermont ..154, 200
Sheep Losses....64, 116, 148
Sheep, Salt Storms and .113
Sheep Shipping East.100, 117 416
Short Horn, Dairy....... 58
Short Horn Convention..330
Sickle Bar, New.........417
Sierra County.......217, 373
Signal Service........24, 25
*Silk Culture in California 171, 191, 215, 265, 358, 371 391, 413, 415, 470
Siskiyou County.........416
Sleep, Breathing in...... 7
Slugs, Soot for..........264
Soap and Candle Works..450
Soapstone and Fertility..312
Solano County..5, 20, 61, 100 193, 217, 284, 349, 373
Sorghum Sugar..........420
Soledad.................462
Sonoma County..5, 21, 41, 61 77, 116, 149, 193, 237, 284 309, 349, 373, 393, 432, 465 485
Soups...................263
Springs, California, Mineral................309
Springs, Using
Stains, Removing.......467
77, 100, 192, 282, 349, 393 416, 432, 485
Steam Diggers..241, 306, 325
Steam Wagons..........148
Stockton Notes 2, 381
Strawberries, Mammoth..393 420
Strawberry Fields.......325
Strawberry, Bidwell.....189
Summer Heat, Avoiding..396
Summer Life and Reveries
Sunshine, Heating by...466
Sutter County....21, 61, 101 284, 324, 393, 432, 465
Sweet Story.............434
Sycamores, Disease of ...463
Sycamore Trees, Injury to

T

Tahoe Leaflets .103, 195, 326
Tea, Prickly Pear. 502
Tehama County..11, 117, 193
Temperance and Health..327
The Baby's Autograph...507
Timber Reservations ....
Timothy Hay 145
†To F. F. on His Birthday.506
Tobacco Evils........... 7
Tobacco for Insects......120
Tom's Wife..............486
†Tramp, Thoughts on....286
Transportation..........390
Trips for Pleasure in California.............437
True Story..............327
101, 117, 132, 161, 361, 393
Tuolumne County. 5, 21, 74
Turkey Cooking..... 61
Twine Binders... ..308, 405

U

Unhappiness 311
Upholstery Colors.... 219

V

Valentine, Our....
Varnish, Rubber..
Veal, Stewed
Ventilation and Fresh Air..............239
Ventura County....5, 41, 61 117, 132, 173, 193, 325, 373
Vine, Chinch Bug. 420
130, 169, 234, 290, 306
Vine-Knot...........83, 397
Vine Planting 29, 234, 237 306
Vine, Long Pruning..38, 74
*Vine Pruning, Notes on..501
*Vine Setter, Stanley.... 41
Vines, Portuguese 3, 29

Vines, Frosted
Vines, Wild
Vineyards, Hermitage...223
Vineyards of Southern California.............462
*Vista, A.............. 73
Vital Statistics
Viticultural Commission. 77 322, 485
Volume, End of.........501

W

Wages, Farm
*Wagon, Benecia Agricultural Works........433
*Wagon, Sanborn...217, 453
Wagon Tires, Tightening.361
Walnut Cultivation......120
Walnut Præparturiens... 99 131, 158, 173, 290
Warehouses, Grain......116
Warts and Their Cure
Washington, State of
Water, Excessive Use of..266 405
Water Rates, Riverside..140
Water, Blue Color of....328
Wattle, Black.......... 147
Wells, Artesian..77, 101, 161 313
We t, The..........218, 395
†What the Years Bring..150
Wheat by Electric Light
Wheat, California...356, 402
Wheat, Chemistry of....354
*Wheat Cleaner, Carter's.261
Wheat Cleaning........8, 261
Wheat Crop of U. S.....
Wheat, Hybridizing.....
Wheat in Drills
Wheat Growers' Meeting.
Wheat, History of
Wheat, Indian...........356
Wheat Lands of California.................. 89
Wheat Supply.17, 46, 285, 312
Wheat, Rust Proof..145, 470
Wheat Transportation...172 257, 396
Wheat Varieties.121 397, 465
Who Was She
Widow Appledore's Romance

Wife, Death of.......... 42
Wife, The True.......... 62
Wife's Portemonnaie
Willow for Timber.......356
*Window Gardens.......389
Windbreaks..............392
*Windmills, Althouse....169
Wind Pressures
Wines, Tax on......322, 398
*Winter Scene in Summer Land................233
Woman, Free Agent.. ..151
Woman's Dress.118, 151, 194
Women, Single..........435
Womens' Strength.......287
Woman's Duties..7, 103, 350
Woman's Kingdom......351
Woman's Rights in Africa.310 374
Woman's Strength 435
†Woman's Heart 22
Woman's Work..........419
Women, Inquisitive.....135
Women, Cheerful. 23
Women, Nobleness of....507
Wood Acid..............259
Wood, Piling............133
Wool Cleaning 117
Wool Clip of 1881........ 5
Wool Growers' Association..............192, 484
Wool Trade of 1881...46, 376
Wool, Table of Prices....284
Wool Tariff 80
Worm............... 118
Worry 351

Y

Year, Old and New...... 8
Yellow Dye 332
Yolo County..21, 61, 101, 133 149, 193, 325, 393, 432, 465 505
Yosemite, Preservation of 461
*Yosemite, Scene in.. 461
Yuba County...149, 193, 284 417, 432, 465, 505

Z

Zuyder Zee, Reclaiming the..... 354

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